

# Cohere Medical Policy – Musculoskeletal Commercial

*Clinical Guidelines for Medical Necessity Review*

**Consolidated Reference** • 73 Policies

**Updated on** 05/26/2026

# Important Notices

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## **Cohere Medical Policy – Tarsometatarsal Arthrodesis**

*Clinical Policy for Medical Necessity Review*

**Version: 3**

**Cohere Health UMC Approval Date: July 31, 2025**

Last Annual Review: July 31, 2025

Revision: Not Applicable

Next Annual Review: July 31, 2025

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Tarsometatarsal Arthrodesis

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Tarsometatarsal Arthrodesis***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Tarsometatarsal (TMT) arthrodesis is a minimally invasive procedure that involves the surgical fusion of the tarsal bones (calcaneus, talus, cuboid, navicular, and cuneiform bones) with the metatarsal bones (the long bones that connect the toes to the rest of the foot). The goal of the procedure is to eliminate movement and pain in the affected joints by fusing the bones together. This is typically achieved through the use of internal fixation devices such as screws, plates, or rods.<sup>1,2</sup>

## **Medical Necessity Criteria**

### **Indications**

**Tarsometatarsal arthrodesis** is considered appropriate if **ALL** of the following are **TRUE**:

- **ANY** of the following:
  - Current nicotine user with no product use for 6 weeks; and **ANY** of the following<sup>3-5</sup>:
    - Negative urine (cotinine) lab test within 30 days<sup>6</sup>; **OR**
    - Surgery is urgently required due to documented reason; **OR**
  - No history of nicotine product use within the last 12 months; **OR**
  - No lifetime history of nicotine product use, **AND**
- The patient has **ANY** of the following positive findings<sup>1,2,7-11</sup>:
  - Bunion deformity and **ALL** of the following:
    - Persistent pain; **AND**
    - Difficulty walking; **OR**
  - Documented hypermobility of the first tarsometatarsal (TMT) joint suggested by greater than 10mm of total sagittal motion; **OR**
  - Painful TMT joint with tenderness on exam; **OR**
  - Osteoarthritis of the midfoot; **OR**
  - Hindfoot deformity or arthrosis and triple arthrodesis indicated; **OR**
  - Congenital foot deformities (e.g., tarsal coalitions, metatarsus adductus, clubfoot, or neurological flatfoot deformities)<sup>12-15</sup>; **AND**
- **ANY** of the following:
  - Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>2,7</sup>:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**

- Physical therapy or a physician-directed home exercise program; **AND**
- **ANY** of the following:
  - Corticosteroid injection if medically appropriate; **OR**
  - Documentation that corticosteroid injection is contraindicated; **OR**
  - Shoe modification; **OR**
  - Shoe insert or orthotics; **OR**
  - Trauma or wound due to deformity of the midfoot (e.g., Lisfranc injury)<sup>16,17</sup>; **AND**
- Radiographic confirmation with report (must be weight-bearing radiographs of the foot) of **ANY** of the following<sup>18</sup>:
  - Intermetatarsal (IM) angle greater than 15 degrees<sup>7</sup>; **OR**
  - Advanced osteoarthritis of the TMT joint or midfoot (e.g., joint space narrowing, osteophyte formation, subchondral cysts)<sup>19</sup>; **OR**
  - Traumatic disruption of the midfoot.

## Non-Indications

**Tarsometatarsal arthrodesis** is not considered appropriate if **ANY** of the following is **TRUE**<sup>2,20</sup>:

- The presence of active, untreated infection at the surgical site (may be necessary for a DM ulcer correction); **OR**
- Significant bone loss with shortening of the foot rays that requires bone block fusion.

### **Level of Care Criteria**

Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                 |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 28297                 | Correction, hallux valgus (bunionectomy), with sesamoidectomy, when performed; with first metatarsal and medial cuneiform joint arthrodesis, any method |
| 28730                 | Arthrodesis, midtarsal or tarsometatarsal, multiple or transverse                                                                                       |
| 28735                 | Arthrodesis, midtarsal or tarsometatarsal, multiple or transverse; with osteotomy (eg, flatfoot correction)                                             |
| 28740                 | Arthrodesis, midtarsal or tarsometatarsal, single joint                                                                                                 |

## Medical Evidence

Schwartz et al. (2024) conducted a two-part, randomized, double-blind, active-controlled trial. The study examined the efficacy, safety, and how liposomal bupivacaine (LB) works in the body when given through ultrasound-guided sciatic nerve block in the popliteal fossa during bunionectomy surgery. When administered through a sciatic nerve block in the popliteal fossa following a bunionectomy, LB 133 mg exhibited superior and enduring pain management compared to BUPI. The results are clinically significant as they were accompanied by simultaneous decreases in pain levels and opioid usage for up to 4 days post-surgery, with a notably higher proportion of participants abstaining from opioids. (ClinicalTrials.gov Identifier: NCT05157841).<sup>8</sup>

Ilfeld et al. (2021) performed a randomized controlled trial (RCT) to determine the impact of percutaneous peripheral nerve stimulation on postoperative pain levels and usage of opioids. Study participants included patients undergoing foot/ankle, knee, or shoulder surgeries. Each patient received percutaneous peripheral nerve stimulation preoperatively, followed by a single injection of long-acting local anesthetic along the same nerve. Postoperatively, patients were randomized into groups receiving active or sham stimulation for 14 days. The primary outcome measures were opioid consumption and pain scores within the first 7 postoperative days. Results showed that participants receiving active stimulation had significantly lower opioid consumption and pain scores compared to those receiving sham treatment. The authors concluded that percutaneous peripheral nerve stimulation effectively reduced pain and opioid requirements after ambulatory orthopedic surgery without systemic side effects.<sup>9</sup>

Stødle et al. (2020) conducted an RCT to evaluate primary arthrodesis of the first tarsometatarsal (TMT) joint in comparison to temporary bridge plating for managing unstable Lisfranc injuries. The study compared primary arthrodesis (PA) and temporary bridge plate (BP) treatments for Lisfranc injuries, 48 patients were followed for 2 years. PA involved fusing the medial 3 TMT joints, while BP involved placing a plate over the first TMT joint and fusing the second and third TMT joints. The main outcome measured was the American Orthopaedic Foot & Ankle Society (AOFAS) midfoot scale, with



secondary measures including SF-36, VAS pain scores, and radiographic assessments. Results showed no significant difference in AOFAS scores between groups, but better alignment of the first metatarsal was noted in the BP group. Overall, favorable outcomes were noted for both treatments.<sup>10</sup>

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# Policy Revision History/Information

| Original Date: April 19, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Version 2                     | 09/20/2024 | <p>Updated language regarding conservative treatment.</p> <p>Added non-indication for "ABI less than 0.7."</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Version 3                     | 07/31/2025 | <p>Annual Review.</p> <p>Added CPT code 28730.</p> <p>Added standard nicotine indications.</p> <p>Updated conservative care indications to revised standard language.</p> <p>Updated indication for hypermobility of the first tarsometatarsal (TMT) joint to include, "suggested by greater than 10mm of total sagittal motion."</p> <p>Added indication, "Osteoarthritis of the midfoot."</p> <p>Added indication, "Congenital foot deformities (e.g., tarsal coalitions, metatarsus adductus, clubfoot, or neurological flatfoot deformities)."</p> <p>Added "Trauma or wound due to deformity of the midfoot (e.g., Lisfranc injury)" as an indication that does not require failure of conservative care.</p> <p>Added "Traumatic disruption of the midfoot" to the possible radiographic confirmation indications.</p> <p>Removed non-indications, "The patient has not reached skeletal maturity," and "ABI less than 0.7."</p> |

|  |  |                                                                                                                                                                                                                             |
|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>Added non-indication, "Significant bone loss with shortening of the foot rays that requires bone block fusion."</p> <p>Literature review - Description and Medical Evidence sections updated (including references).</p> |
|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## **Cohere Medical Policy – Ankle Arthrodesis**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 3  
**Effective Date:** January 16, 2025

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy - Ankle Arthrodesis

**Date of last literature review:** 1/6/2025

**Document last updated:** 1/16/2025

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## **Service: Ankle Arthrodesis**

### **Recommended Clinical Approach**

Ankle arthrodesis is indicated when ankle arthroscopy or arthroplasty is not appropriate, and the patient has failed at least six months of conservative therapy. Additional surgery may be authorized when medically necessary and initial surgery was unsuccessful. Ankle arthrodesis is often performed for end-stage arthritis to relieve pain and improve function. The procedure involves the bonding of the tibiotalar joint and is performed arthroscopically or with an open approach. Compared to ankle arthrodesis, ankle arthroplasty is preferred for pain relief and functional improvement.<sup>1-2</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ An **ankle arthrodesis** is considered appropriate if **ALL** of the following are **TRUE**:

- ◆ No nicotine product use for 6 weeks with a negative lab test within 30 days of planned surgery; **AND**
  - ◆ The patient has **ANY** of the following:
    - Musculoskeletal congenital or acquired dysfunction<sup>3-4</sup>; **OR**
    - Increased arthritis pain due to **ANY** of the following:
      - Infection-related to septic or reactive arthritis; **OR**
      - Trauma<sup>5-6</sup>; **OR**
      - Chronic instability; **OR**
      - Avascular necrosis of the talus<sup>7-8</sup>; **OR**
      - Inflammatory arthropathy; **OR**
      - Primary osteoarthritis; **OR**
    - Neuropathic arthropathy; **OR**
    - Tumor resection; **OR**
    - Unsuccessful open reduction and internal fixation<sup>9-10</sup>; **OR**
    - Unsuccessful total ankle arthroplasty<sup>11</sup>; **OR**
    - The patient demonstrates evidence of end-stage arthritis<sup>12</sup>;
- AND**

- ◆ Failure of conservative management for greater than 6 months, including **ALL** of the following:
  - Oral steroids, anti-inflammatory medications, or analgesics; **AND**
  - Physical therapy; **AND**
  - Orthotic devices; **AND**
  - **ANY** of the following:
    - Corticosteroid injection if medically appropriate; **OR**
    - Corticosteroid injection is contraindicated.

### Non-Indications

→ An **ankle arthrodesis** is not considered appropriate if **ANY** of the following is **TRUE**<sup>12</sup>:

- ◆ Active viral, bacterial, parasitic, or fungal infection; **OR**
- ◆ Development of subtalar arthritis after calcaneus fracture; **OR**
- ◆ Asymptomatic or has minimal symptoms of arthritis.

### Level of Care Criteria

Inpatient or Outpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                         |
|----------------|------------------------------------------------------------------------------------------|
| 27870          | Arthrodesis, ankle, open                                                                 |
| 27871          | Arthrodesis, tibiofibular joint, proximal or distal                                      |
| 28705          | Arthrodesis; pantalar                                                                    |
| 29899          | Arthroscopy, ankle (tibiotalar and fibulotalar joints), surgical; with ankle arthrodesis |

## Medical Evidence

Daniels et al. (2014) conducted a prospective study to evaluate and compare the intermediate-term (4 to 10 year) clinical outcomes of total ankle replacement and ankle arthrodesis in patients with end-stage ankle arthritis. Patients from the Canadian Orthopaedic Foot and Ankle Society (COFAS) Prospective Ankle Reconstruction Database were included. A total of 388 ankles were analyzed and separated into two groups; 281 in the ankle replacement group and 107 in the arthrodesis group. The follow-up rate was 83%. The mean Ankle Osteoarthritis Scale scores improved from 53.4 points to 33.6 in the arthrodesis group and from 51.9 points to 26.4 in the group that underwent ankle replacement.<sup>2</sup>

The American College of Foot and Ankle Surgeons (ACFAS) published a position statement titled *Total Ankle Replacement Surgery*. Ankle fusion has been the long-standing treatment for end-stage ankle arthritis. The restriction of the range of motion can put additional stress on adjacent joints, which may also cause the joints to become arthritic. Ankle replacement techniques are more refined and offer an additional treatment option. While both procedures have comparable safety profiles, the ACFAS recommends ankle replacement over ankle fusion due to better patient function, pain relief, and quality of life.<sup>1</sup>

The American Orthopaedic Foot and Ankle Society (AOFAS) published a position statement entitled *The Use of Total Ankle Replacement for the Treatment of Arthritic Conditions of the Ankle*. While pain reduction is achieved with both ankle replacement and ankle arthrodesis, complication rates are higher following ankle replacement, including the need for a secondary surgical procedure. Compared to ankle arthrodesis, ankle arthroplasty shows “marked improvement in quality of life, pain, and function.” Patients undergoing ankle arthroplasty report higher satisfaction with range of motion and gait when compared to ankle arthrodesis.<sup>2</sup>

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# Clinical Guideline Revision History/Information

| Original Date: September 7, 2023 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Version 2                        | 9/20/2024 | Updated language regarding conservative treatment and nicotine use.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Version 3                        | 1/16/2025 | <ul style="list-style-type: none"> <li>• Annual review:</li> <li>• Reviewed boolean logic.</li> <li>• Changes the language in the following indications: <ul style="list-style-type: none"> <li>○ Added " ...within 30 days of planned surgery" to the first indication ("No nicotine product use for 6 weeks with a negative lab test requirement").</li> <li>○ "Recovery of an unsuccessful TAA" has been replaced with "Unsuccessful TAA"</li> <li>○ "The patient demonstrates evidence of end-stage arthritis functional impairment that ankle arthroscopy is not appropriate" has been replaced with "The patient demonstrates evidence of end-stage arthritis."</li> </ul> </li> <li>• Updated references.</li> </ul> |
|                                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



## **Cohere Medical Policy – Ankle Arthroplasty**

*Clinical Policy for Medical Necessity Review*

**Version:** 4

**Policy Number:** CHP-003-4

**Cohere Health UMC Approval Date:** January 15, 2026

Last Annual Review: January 15, 2026

Revision: Not Applicable

Next Annual Review: January 15, 2027

This policy was reviewed by the American Association of Orthopaedic Surgeons (AAOS) prior to publication.

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Ankle Arthroplasty

**Policy Number:** CHP-003-4

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)



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# Medical Necessity Criteria

## ***Service: Ankle Arthroplasty***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Duplicate exams or requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed and/or treated with a single study or procedure.

## **Description**

Ankle arthroplasty, or total ankle replacement, is a surgical procedure wherein an FDA-approved artificial implant replaces a damaged ankle joint.<sup>1,2</sup> Newer generation three-component implants permit motion at two interfaces, allowing for greater flexibility and long-term stability of the implant.<sup>3</sup> Through an incision, the surgeon first debrides osteophytes, inflamed synovial tissue, excessive joint capsule, and clears the medial and lateral gutters. Soft tissue, including tendons, are then retracted and bony structures are resected and shaped to permit implant placement and fixation.

## **Medical Necessity Criteria**

### **Indications**

**Ankle arthroplasty** is considered appropriate if **ALL** of the following are **TRUE**:

- **ANY** of the following:
  - **ALL** of the following:
    - Current nicotine user with no product use for 6 weeks; **AND**
    - Negative urine (cotinine) lab test within 30 days<sup>4-6</sup>; **OR**
  - No history of nicotine product use within the last 12 months<sup>5</sup>; **OR**
  - No lifetime history of nicotine product use<sup>5</sup>; **AND**
- **ANY** of the following:
  - The procedure is an **initial ankle arthroplasty**, and **ALL** of the following:
    - Tibiotalar joint disease<sup>7</sup>; **AND**
    - The patient is experiencing **ANY** of the following:
      - Moderate or severe pain that limits activities of daily living<sup>8</sup>; **OR**
      - Reduction of mobility in the affected ankle; **AND**
    - Imaging findings with radiographic report are consistent with moderate to severe osteoarthritis of the ankle<sup>9</sup>; **AND**
    - The patient is not a candidate for joint-preserving procedures<sup>10</sup>; **AND**
    - Failure of conservative management<sup>A</sup>, including **ALL** of the following<sup>8</sup>:
      - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
      - **ANY** of the following:
        - **ALL** of the following:
          - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP)

provided by a physician or physical therapist targeting the requested region; **AND**

- PT/HEP trialed for a duration of 3 months or more within the past 6 months; **OR**
  - Progression or worsening of symptoms due to PT/HEP treatment; **OR**
  - Physical therapy/home exercise program not appropriate due to severe osteoarthritis with weight-bearing bone-on-bone contact, or documentation of another contraindication; **AND**
- **ANY** of the following:
  - Corticosteroid injection if medically appropriate<sup>11</sup>; **OR**
  - Documentation that corticosteroid injection is contraindicated; **OR**
  - The procedure is a **revision ankle arthroplasty** of a previous surgery that has failed due to **ANY** of the following<sup>12-13</sup>:
    - Implant failure; **OR**
    - Infection; **OR**
    - Incorrect positioning; **OR**
    - Periprosthetic fracture.

## Non-Indications

**Ankle arthroplasty** is not considered appropriate if **ANY** of the following is **TRUE**:

- Absence of the distal part of the fibula<sup>14</sup>; **OR**
- Untreated infection at the surgical site (with or without osteomyelitis or osteitis)<sup>3,8</sup>; **OR**
- Instability due to incompetent ligaments<sup>13</sup>; **OR**
- Charcot foot<sup>3,8</sup>; **OR**
- Neuropathy and vascular insufficiency<sup>4</sup>; **OR**
- The patient has poorly controlled diabetes as indicated by laboratory tests.<sup>15</sup>

## Definitions

### <sup>A</sup> **Failure of conservative management:**

- The patient has completed a full course of conservative management without meaningful improvement.
- Patient noncompliance, closure of therapy offices, and patient inconvenience do *not* constitute a failure of conservative treatment.

### **Level of Care Criteria**

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                         |
|-----------------------|-------------------------------------------------|
| 27700                 | Arthroplasty, ankle                             |
| 27702                 | Arthroplasty, ankle; with implant (total ankle) |
| 27703                 | Arthroplasty, ankle; revision, total ankle      |
| 27704                 | Removal of ankle implant                        |
| 27870                 | Arthrodesis, ankle, open                        |
| C1776                 | Joint device (implantable)                      |

## Medical Evidence

Mercurio et al. (2025) reviewed outcomes after ankle arthroplasty conducted via anterior and lateral surgical approaches. While the more often used anterior approach provides superior access to the ankle joint and facilitates direct visualization of tibial and talar cuts, it also carries a greater risk of intraoperative medial malleolar fracture and potential injury to neurovascular structures. The lateral approach, in contrast, enables greater lateral and posterior joint visualization and permits curved cuts that better align with ankle anatomy while requiring fibular osteotomy. The authors reviewed studies comparing complications after both approaches and reported that while the anterior approach resulted in higher infection rates and had a greater risk of reduced soft-tissue coverage, the lateral approach had a higher risk of complications requiring surgical revision. Short-, medium-, and long-term implant survivorship and functional outcomes were similar across approaches, with the authors concluding that approach selection should consider individual patient characteristics, including activity demands, comorbidities, and disease etiology.<sup>7</sup>

Bagheri et al. (2023) conducted a meta-analysis evaluating long-term (ten years or longer) follow-up after ankle arthroplasty. They reported that across five studies and 938 ankles, AOFAS (American Orthopaedic Foot and Ankle Society) scores increased by over 40 points postoperatively. Across five studies and 866 ankles, visual analog score improved by 4.5 points. The overall revision rate was 20.5%. These results indicate that ankle arthroplasty can have meaningful and enduring positive effects for patients with end-stage ankle arthritis. However, the authors also note the high revision rate, comparing it to the relatively lower revision rates for hip arthroplasty (less than 5%) and knee arthroplasty (around 6%).<sup>16</sup>

Norvell et al. (2019) discuss a multisite prospective cohort study comparing treatments for end-stage ankle arthritis. A total of 517 participants were included. Foot and Ankle Ability Measure (FAAM) activities of daily living and Short Form-36 (SF-36) scores were higher 24 months after surgery in patients who underwent total ankle arthroplasty compared to patients who underwent ankle arthrodesis. The authors concluded that while both procedures are effective, arthroplasty yields more improved outcomes.<sup>17</sup>

The American College of Foot and Ankle Surgeons (ACFAS) published a position statement titled, *Total Ankle Replacement Surgery*. While ankle fusion has been the long-standing treatment for end-stage ankle arthritis, the consequent restricted range of motion can put additional stress on adjacent joints, leading to the development or worsening of arthritis in those joints. Ankle replacement techniques better preserve adjacent joint function and offer an additional treatment option. While both procedures have comparable safety profiles, the ACFAS recommends ankle replacement over ankle fusion due to better patient function, pain relief, and quality of life.<sup>1</sup>

The American Orthopaedic Foot and Ankle Society (AOFAS) published a position statement titled *The Use of Total Ankle Replacement for the Treatment of Arthritic Conditions of the Ankle*. While pain reduction is achieved with both ankle replacement and ankle arthrodesis, complication rates are higher following ankle replacement, including the need for secondary surgical procedures. Compared to ankle arthrodesis, ankle arthroplasty shows “marked improvement in quality of life, pain, and function”. Patients undergoing ankle arthroplasty report higher satisfaction with range of motion and gait when compared to ankle arthrodesis. Based on evidence in peer-reviewed literature, the AOFAS supports ankle arthroplasty over ankle arthrodesis for the treatment of ankle arthritis when conservative management has failed.<sup>2</sup>

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# Policy Revision History/Information

| Original Date: September 7, 2023 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Version 2                        | 9/20/2024  | Updated language regarding conservative treatment and nicotine use.                                                                                                                                                                                                                                                                                                                                                                               |
| Version 3                        | 1/2/2025   | <p>Annual review.</p> <p>No changes to procedure codes.</p> <p>Removed specific device names from indications.</p> <p>Removed "Instability due to incompetent ligaments" from non-indications.</p> <p>Reviewed boolean logic.</p> <p>Literature review – Medical Evidence section updated (including references).</p> <p>References accessed, reviewed, and updated.</p>                                                                          |
| Version 4                        | 01/15/2026 | <p>Annual review.</p> <p>Updated description, medical evidence, and references.</p> <p>Updated nicotine cessation/abstinence and conservative care language.</p> <p>Removed provider education requirement and aseptic loosening indication.</p> <p>Removed the following nonindications: allergic reaction to metal, circulatory disorders, neuromuscular diseases, osteonecrosis, peripheral vascular disease, poor bone quality, poor skin</p> |

|  |  |                                                                                                                                                                             |
|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>integrity due to scarring or trauma, severe malalignment, severe osteoporosis, and significant bone loss.</p> <p>Added nonindication for poorly controlled diabetes.</p> |
|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## **Cohere Medical Policy – Bone Growth Stimulators**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 2  
**Revision Date:** February 6, 2025

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Bone Growth Stimulators – Single Service

**Date of last literature review:** 1/6/2025

**Document last updated:** 2/5/2025

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)

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# Medical Necessity Criteria

## **Service: Bone Growth Stimulators**

### **Recommended Clinical Approach**

Electricity and ultrasound can stimulate bone growth and repair. Non-invasive osteogenic devices use opposing pads wired to an external power supply placed over a cast to create an electromagnetic field at the fracture site. Invasive devices electrically stimulate the fracture site directly through percutaneously placed cathodes or a coiled cathode wire surgically implanted into the fracture site. The power pack for the implanted device is embedded in the soft tissue near the fracture site and is subcutaneously connected to the cathode, creating a self-contained internal system. The power supply for the percutaneous device is externally placed, and the leads are connected to the inserted cathodes. An ultrasonic bone growth stimulator is a noninvasive device that emits low-intensity, pulsed ultrasound through conductive coupling gel on the surface of the skin at the fracture site. Electrical and ultrasonic bone growth stimulators are used as durable medical equipment (DME) to accelerate the healing of fresh fractures, fusions, delayed unions of fractures, or difficult-to-heal fractures or fusions before and/or after surgical intervention when the bone is stabilized on both ends of the fracture and is not infected.<sup>1-2</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ **A bone growth stimulator** is considered appropriate if **ALL** of the following are **TRUE**<sup>3-7</sup>:

- ◆ The request is for a non-invasive or invasive stimulator; **AND**
- ◆ **ANY** of the following is **TRUE**<sup>8</sup>:
  - Documented nonunion of a fracture; **OR**
  - Fusion revision following failed fusion at least 9 months since the last surgery; **OR**
  - Congenital pseudoarthroses; **OR**
  - At least 2 radiographs confirm that healing of the fracture has stopped at least 3 months before the start of treatment with a bone growth stimulator; **OR**
  - As an adjunct to spinal fusion surgery when **ANY** of the following is **TRUE**<sup>8</sup>:

- The patient has a high risk of pseudoarthrosis due to a prior failed spinal fusion at the same site; **OR**
- A multilevel fusion is planned (e.g., involving 3 or more vertebrae [lumbar L3 to L5, lumbar L4 to sacral S1, etc.]); **OR**
- The patient is at risk of non-union of fracture, as documented by **ANY** of the following comorbidities:
  - Diabetes; **OR**
  - Chronic kidney disease (stage 3B or higher)<sup>9</sup>; **OR**
  - Inflammatory arthritis (e.g., rheumatoid arthritis) that has required long-term corticosteroid therapy; **OR**
  - Immunocompromised (e.g., undergoing chemotherapy or radiation therapy to the spine, hypogammaglobulinemia, granulocytopenia, acquired immune deficiency syndrome, chronic granulomatous disease); **OR**
  - Systemic vascular disease; **OR**
  - Spondylolisthesis grade II or greater<sup>10</sup>; **OR**
  - Osteopenia; **OR**
  - Osteoporosis; **OR**
  - Active nicotine use.

## Non-Indications

→ **A bone growth stimulator** is not considered appropriate if **ANY** of the following is **TRUE**<sup>3-7</sup>:

- ◆ Skeletal immaturity; **OR**
- ◆ Pregnancy; **OR**
- ◆ Local infection; **OR**
- ◆ Malignancy; **OR**
- ◆ Nonunion fractures of the skull; **OR**
- ◆ Nonunion fractures of vertebrae; **OR**
- ◆ Tumor-related nonunion fractures; **OR**
- ◆ Ultrasonic bone growth stimulators used with other non-invasive bone growth stimulators; **OR**
- ◆ Ultrasonic bone growth stimulators for fresh fractures and delayed unions; **OR**
- ◆ There is no documentation of consultation with a cardiologist before the use of electrical stimulation for any patient with a cardiac pacemaker or defibrillator.<sup>8</sup>

## Level of Care Criteria

Inpatient or outpatient.



### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                          |
|-----------------------|----------------------------------------------------------------------------------|
| 20974                 | Electrical stimulation to aid bone healing; noninvasive (nonoperative)           |
| 20975                 | Electrical stimulation to aid bone healing; invasive (operative)                 |
| E0747                 | Osteogenesis stimulator, electrical, noninvasive, other than spinal applications |
| E0748                 | Osteogenesis stimulator, electrical, noninvasive, spinal applications            |
| E0749                 | Osteogenesis stimulator, electrical, surgically implanted                        |
| E0760                 | Osteogenesis stimulator, low intensity ultrasound, non-invasive                  |

## Medical Evidence

Piazolla et al. (2024) conducted a multicentre randomized controlled trial (NCT05803681) to examine the roles of non-invasive capacitively coupling electric fields (CCEF) in the resolution of vertebral bone marrow edema (VBME) and pain relief, in stimulated patients with acute vertebral fragility fractures (VFFs). Of 66 patients (male: 9, 13.63%; mean age: 73.15 years) with 69 VFFs, 33 were randomized in the CCEF group. In the CCEF group, 94% of patients adhered to the therapy, indicating good compliance. No adverse effects were recorded. Faster VBME resolution, significantly less vertebral body collapse during follow-up, faster pain reduction, lower analgesic consumption, and improvement in ODI mean scores were observed in the CCEF group compared to the control group. In the CCEF group, VBME showed a faster resolution in male patients compared with females. The authors conclude that CCEF, as an adjunct to traditional conservative treatment, is a useful tool to hasten VBME resolution and prevent vertebral body deformation.<sup>2</sup>

In 2023, the North American Spine Society (NASS) published coverage recommendations for electrical stimulation for bone healing. The NASS supports electrical stimulation for augmentation of spinal fusion for all regions of the spine in patients with above average risk for pseudoarthrosis with specific criteria (e.g., correction of previous spinal fusion, fusion of three or more vertebrae, presence of comorbidities, patient unable to cease smoking before fusion). The NASS does not support coverage for low-intensity pulsed ultrasound or combined magnetic field technology for spinal use.<sup>4</sup>

The National Institute for Health and Care Excellence (NICE) published 3 interventional procedure guidelines. The first guideline states that while safety concerns are minimal, the medical literature does not show a high level of efficacy of low-intensity pulsed ultrasound in promoting the healing of fresh fractures at low risk of non-healing.<sup>5</sup> A second guideline states that low-intensity pulsed ultrasound to promote healing of fresh fractures which are at high risk of non-healing is suitable in a research context and that future research should focus on patient selection, fracture site selection, and risk factors or comorbidities that may delay healing. There are no safety concerns

in the guideline.<sup>6</sup> The third guideline states that clinical evidence supports using low-intensity pulsed ultrasound with other treatments to promote the healing of delayed-union and nonunion fractures.<sup>7</sup>

Patel et al. (2024) conducted a prospective multicenter clinical trial with a retrospective cohort control to evaluate cervical spine fusion rates in 213 patients at risk for pseudoarthrosis who received pulsed electromagnetic field (PEMF) treatment for 6 months following surgery. At the 12-month follow-up, patients treated with PEMF demonstrated significantly higher fusion rates than the control group (90.0% vs. 60.4%). A statistically significant improvement in fusion rate was also observed in patients treated with PEMF who underwent multilevel surgery and had higher body mass index (BMI) than the control group. The authors concluded that the adjunctive use of PEMF stimulation significantly improves cervical spine fusion rates in patients despite advanced age, higher risk for pseudoarthrosis, and higher surgical complexity.<sup>8</sup>

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# Clinical Guideline Revision History/Information

| Original Date: November 3, 2023 |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Version 2                       | 2/6/2025 | <ul style="list-style-type: none"><li>• Annual review</li><li>• Aligned to current policy template</li><li>• Recommended clinical approach updated</li><li>• Medical evidence updated</li><li>• References updated</li><li>• Removed "Surgery is planned for nonunion of a fracture" and "patient compliance with a non-invasive bone stimulator is a concern" sub-bullets under the "invasive stimulator" bullet.</li><li>• Indications updated: obesity, chronic kidney disease added</li><li>• Non-indications updated:<ul style="list-style-type: none"><li>○ Skeletal immaturity added</li><li>○ "Infection" changed to "local infection"</li></ul></li><li>• Changed "smoker" to "active nicotine use"</li></ul> |



## **Cohere Medical Policy – Bone Xenograft**

*Clinical Guidelines for Medical Necessity Review*

**Version: 3**

**Cohere Health UMC Approval Date: July 24, 2025**

Last Annual Review: July 24, 2025

Revision: Not applicable

Next Annual Review: July 24, 2026

# Important Notices

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## Guideline Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Bone Xenograft

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)



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# Medical Necessity Criteria

## ***Service: Bone Xenograft***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the

patient's primary symptoms can be adequately assessed with a single study or procedure.

### **Description**

Xenografts are bone grafts derived from non-human animal sources, most commonly bovine (cow) or porcine (pig) bone. These grafts are used to repair bone defects, fractures, or to augment bone in various orthopedic procedures. Xenograft implantation into the articular surface is a cartilage repair procedure to replace naturally occurring damage resulting from trauma or disease.<sup>1-4</sup>

### **Medical Necessity Criteria**

#### **Indications**

**Bone Xenograft Implantation** is considered appropriate if **ANY** of the following is **TRUE**:

- This procedure is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

#### **Non-Indications**

**Bone Xenograft Implantation** is not considered appropriate if **ANY** of the following is **TRUE**:

- This is not applicable, as there are no indications.

### **Level of Care Criteria**

None

### **Procedure Codes (CPT/HCPCS)**

| CPT/HCPCS Code | Code Description                                  |
|----------------|---------------------------------------------------|
| 0737T          | Xenograft implantation into the articular surface |

## Medical Evidence

A systematic review and meta-analysis, conducted by Oettl et al. (2025), examined the safety and efficacy of xenograft augmentation in rotator cuff repair. The review sought to compare the outcomes of xenograft repair with standard rotator cuff repair techniques. The authors found no statistically significant differences between the two approaches in strength measurements and range of motion, though xenograft augmentation was associated with slightly higher complication rates and functional scores.<sup>5</sup>

In their study of osteochondral regeneration, Rastegar et al. (2022) examined the regenerative effect of decellularized osteochondral extracellular matrix xenografts in combination with biological products in an osteochondral defect. The objective of this study was to prepare decellularized osteochondral scaffolds from sheep and implant the xenograft into a rabbit model with an osteochondral defect. The decellularization was performed by multistate methods and resulted in approximately 98% cell elimination. The authors concluded that xenograft decellularized extracellular matrix and biological factor platforms represent a promising approach to human osteochondral regeneration.<sup>6</sup>

Anderson et al. (2022) reviewed studies related to NeoCart, a third-generation autologous chondrocyte (ACI) therapeutic. Phased clinical trials, which began in 2003, found that the control microfracture procedure demonstrated the most pain relief and functional improvement depending on the size of the patient's lesion. The study was terminated in Phase III, and the therapy was not approved for use.<sup>2</sup>

Amid et al. (2020) conducted a systematic review to evaluate the chemical and structural features of various xenograft bone substitutes. Of the 25 studies included in the final review, 19 were examinations of bovine xenografts. The authors found that the porosity, crystallinity, Ca/P (calcium-to-phosphorus) ratio, and osteogenesis of the xenografts varied significantly—a heterogeneity they attributed to disparate preparation methods.<sup>7</sup>

Elder et al. (2018) evaluated an antigen removal procedure as part of a larger effort to develop an osteochondral xenograft for articulate cartilage repair. The antigen removal protocol extracted nearly 90% of DNA from cartilage and bone and 80% of glycosaminoglycan from cartilage. The authors concluded that this procedure for producing an osteochondral xenograft shows promise for the treatment of osteochondral lesions in human knees.<sup>8</sup>

Sutherland et al. (2015) examined the use of cartilage matrices, including their promise as a biomaterial for enhanced cartilage regeneration. These materials provide for enhanced cartilage regeneration due to their ability to provide stem cells with physical attachment sites, as well as mechanical and chemical signals.<sup>1</sup>

Moyad et al. (2011) reviewed the literature regarding cartilage injuries in the adult knee and the workup and management techniques in current use. Previously, autologous chondrocyte implantation often resulted in complications from hypertrophy of the periosteal graft. Porcine tissue xenografts have been studied and found to have lower complication rates.<sup>9</sup>

No current, peer-reviewed studies were found to unequivocally support the use of xenograft implantation into the articular surface.

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# Policy Revision History/Information

| Original Date: October 6, 2023 |            |                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                 |            |                                                                                                                                                                                                                                                                                                                                                     |
| Version 2                      | 04/26/2024 | Policy criteria reviewed and updated per medical literature                                                                                                                                                                                                                                                                                         |
| Version 3                      | 07/24/2025 | <p>Annual Review</p> <p>The name of this policy has been changed from "Xenograft Implantation" to "Bone Xenograft" to reflect that the policy is limited to bone grafts.</p> <p>Added procedure description (page 4).</p> <p>The medical evidence section has been updated to include Oettl et al. (2025)</p> <p>Reference added (Oettl et al.)</p> |





## **Cohere Medical Policy – Bunionette Surgical Treatments**

*Clinical Policy for Medical Necessity Review*

**Version: 3**

**Cohere Health UMC Approval Date: July 24, 2025**

Last Annual Review: July 24, 2025

Revision: Not Applicable

Next Annual Review: July 24, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Bunionette Surgical Treatments

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Bunionette Surgical Treatments***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Bunionette (or tailor's bunion) is a deformity of the fifth metatarsal bone where the little toe meets the metatarsal head, in which the fifth metatarsal head projects laterally. During a bunionette surgical procedure, the doctor may remove part of the bone, realign the bone of the little toe, or both. Small screws or pins may be used to hold the bone in the new position while it heals. This surgery aims to correct the deformity, reduce pain, and improve function.<sup>1-4</sup>

## **Medical Necessity Criteria**

### **Indications**

**Bunionette surgical treatments** are considered appropriate if **ALL** of the following are **TRUE**:

- The patient has **ANY** of the following positive findings<sup>3-9</sup>:
  - Pain and swelling at the site of the lateral prominence of the fifth metatarsal head; **OR**
  - Lateral callus formation; **AND**
- Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>3-9</sup>:
  - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
  - Shoe modifications; **AND**
  - Padding or callus shaving; **AND**
- Radiographic confirmation of **ANY** of the following<sup>3,5</sup>:
  - Bony prominence of the fifth metatarsal head; **OR**
  - Fourth/fifth intermetatarsal (IM) angle greater than 9 degrees; **OR**
  - Fifth MTP angle greater than 15 degrees; **OR**
  - Congenital bowing.

### **Non-Indications**

**Bunionette surgical treatments** are not considered appropriate if **ANY** of the following is **TRUE**:

- Inadequate blood supply that could prevent healing<sup>10</sup>; **OR**
- Presence of active or untreated infection at the surgical site (may be necessary for a diabetic ulcer correction).<sup>11</sup>

## **Level of Care Criteria**

Outpatient

## **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                 |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------|
| 28110                 | Ostectomy, partial excision, fifth metatarsal head (bunionette) (separate procedure)                                    |
| 28308                 | Osteotomy, with or without lengthening, shortening or angular correction, metatarsal; other than first metatarsal, each |

## Medical Evidence

Cooper et al. (2023) performed a systematic literature review regarding the success rate of nonsurgical treatment of symptomatic bunionettes. These treatments include shoe wear modification, conservative treatment, and padding. Corticosteroid injections were shown in studies to have positive effects for up to two years. Metatarsal head resection is typically reserved for unhealthy patients, as poor outcomes such as transfer metatarsalgia and painful fifth toe deformity have been reported. Type I bunionette deformities are often successfully corrected with distal chevron osteotomy or subcapital oblique osteotomy.<sup>12</sup>

A systematic literature review and meta-analysis (Coll and Beech, 2021) looked at four retrospective case series published between 2000 and 2021, which reported outcomes for 68 procedures. Across all studies, scarf osteotomy showed statistically significant improvements in radiographic measurements (e.g., reduction in the fourth/fifth intermetatarsal angle) and in clinical outcomes (e.g., improved pain relief and patient function, measured by the AOFAS [American Orthopaedic Foot & Ankle Society] score). Surgical techniques were fairly consistent across studies and typically involved shifting and fixing the bone to correct the deformity, with most patients able to bear weight shortly after surgery. However, there was variation in postoperative protocols, and the ideal timeline for weight-bearing remains undefined. Despite positive clinical outcomes, the included studies were rated low quality due to their nature (case series), small sample sizes, inconsistent follow-up, and potential bias, as assessed by the Coleman Methodology Score and the Cochrane risk of bias tool.<sup>3</sup>

Michels and colleagues (2021) conducted a survey study of 50 orthopedic surgeons with specific experience in percutaneous bunionette correction. A 92% response rate was obtained, and condylectomy was found to be rarely used, while percutaneous oblique osteotomy was performed in almost all procedures. 95.7% were single osteotomies, 66.2–72.7% were complete, and 73.9% were performed with a Shannon long burr. 63.0% of respondents confirmed that the location of the osteotomy was dependent upon the deformity. It was concluded that there is some consensus on the surgical technique to be used and on the perioperative protocol.<sup>4</sup>

Nunes et al. (2020) conducted a retrospective case series of 18 patients who underwent bunionette percutaneous surgical treatment. The primary outcomes measured were functional outcomes and pain levels using the American Orthopaedic Foot and Ankle Society (AOFAS) scale and the visual analogue pain scale (VAS) preoperatively and at the last follow-up. Secondary outcomes included complications, time to radiographic consolidation, and satisfaction rate. Authors reported that AOFAS scores increased from 49.6 to 92.4, and the VAS decreased from 7.7 to 1.2. A common complication reported was the formation of a hypertrophic bone callus in the third postoperative month in three operated feet. Overall, it was concluded that percutaneous osteotomy of the fifth metatarsal without the use of hardware is a safe, reproducible technique and presents good clinical and radiographic results for the treatment of bunionette.<sup>8</sup>

In a 2019 systematic review, Cooper, Granadillo, and Coughlin state that the literature is limited regarding the success of nonsurgical treatment of bunionettes that are symptomatic. These treatments include shoe wear modification and padding. Corticosteroid injections were shown in studies to have positive effects for up to two years. From a surgical perspective, the group stated that metatarsal head resection is typically reserved for unhealthy patients, as poor outcomes such as transfer metatarsalgia and painful fifth toe deformity have been reported. Type I bunionette deformities are often successfully corrected with distal chevron osteotomy or subcapital oblique osteotomy. Minimally invasive surgical techniques have increased in popularity in recent years, with positive study outcomes.<sup>12</sup>

Thomas et al. (2009) developed a Clinical Practice Guideline for the American College of Foot and Ankle Surgeons for the diagnosis and treatment of forefoot disorders: digital deformities. The guideline consists of multiple pathways, which include digital deformities, central metatarsalgia, Morton's neuroma, tailor's bunion, and trauma. They state that trauma may be an etiology of digital deformity; however, congenital or acquired deformities are more common. Examinations are generally performed sitting or standing, and gait analysis is stated to be beneficial. Regarding clinical maneuvers, the push-up test is effective at determining whether the deformity can be reduced. The metaphalangeal joint drawer test assists in confirming sagittal and transverse instability and the potential for plantar plate pathology.<sup>5</sup>



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# Policy Revision History/Information

| Original Date: April 12, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Version 2                     | 09/20/2024 | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Version 3                     | 07/24/2025 | <p>Annual review.</p> <p>No changes to procedure codes.</p> <p>Updated conservative care language to include 3 months of: “anti-inflammatory medications, non-opioid analgesics, or prescription medications; shoe modifications; and padding or callus shaving.”</p> <p>Added “congenital bowing” to one of the possible radiographic findings.</p> <p>Removed “the patient must have reached skeletal maturity” from the non-indications.</p> <p>Reference added to support bunionette surgical treatments in pediatric and adolescent populations.</p> |



## **Cohere Medical Policy – Carpal Tunnel Release (Endoscopic or Open)**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 2  
**Effective Date:** January 16, 2025

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy – Carpal Tunnel Release

**Date of last literature review:** 11/18/2024

**Document last updated:** 1/14/2025

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

**Service: Carpal Tunnel Release (Endoscopic or Open)**

## Recommended Clinical Approach

Carpal tunnel syndrome (CTS) is a common condition caused by the compression of the median nerve at the wrist, resulting in pain, numbness, and hand dysfunction. Median nerve compression can be caused by injury, trauma, metabolic disorders such as thyroid disease, rheumatoid arthritis, and fluid retention during pregnancy. After assessing patient history and potential risk factors, the Semmes–Weinstein monofilament test and the two-point discrimination (2PD) test are used to determine the degree of nerve damage. Tools like the Katz hand diagram, Phalen’s test, Tinel’s sign, the carpal compression test, and the Flick test are used to assess likelihood.

Conservative and surgical interventions are the most commonly used treatments. Conservative therapy includes resting, immobilizing the wrist in a splint, corticosteroid injections, oral steroids, therapeutic exercises, and manual therapy. Surgery is recommended if a patient experiences persistent numbness and tingling, with or without weakness, that does not improve with conservative management. In addition, surgical intervention is indicated if a patient presents with thenar atrophy, as conservative treatment is not likely to improve patient outcomes.<sup>1-4</sup>

## Medical Necessity Criteria

### Indications

→ **Carpal tunnel release (endoscopic or open)** is considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Severe median nerve injury (e.g., fracture of the carpal or distal radius bones secondary to blunt force trauma or thenar muscle atrophy); **OR**
- ◆ Severe carpal tunnel syndrome; **OR**
- ◆ **ALL** of the following are **TRUE**<sup>1,3,5</sup>:
  - The patient has **ALL** of the following symptoms<sup>3</sup>:
    - Documented nocturnal paresthesias (burning or pricking sensation); **AND**

- Documented persistent pain, sensory loss, or paresthesia in the median nerve distribution; **AND**
- The patient has **AT LEAST TWO** positive findings from the following physical diagnostic tests<sup>3</sup>:
  - Phalen sign; **OR**
  - Tinel sign; **OR**
  - Carpal compression; **OR**
  - Thenar weakness or thumb abduction weakness; **OR**
  - Abnormal 2-point discrimination in the median nerve distribution (thumb, index, long, radial ring finger); **OR**
- The patient has electrodiagnostic testing positive for carpal tunnel syndrome, including nerve conduction study with or without electromyography<sup>6</sup>; **AND**
- Failure of conservative management for greater than 6 weeks, including **ANY** of the following:
  - A 6-week hand/wrist immobilization trial (brace or splint); **OR**
  - Occupational therapy; **OR**
  - Corticosteroid injection to the carpal tunnel; **OR**
- ◆ Repeat carpal tunnel release (endoscopic or open) when **ALL** of the following are **TRUE**:
  - Recurrent or continued carpal tunnel syndrome; **AND**
  - Failure of a previous carpal tunnel release surgery.

## Non-Indications

- **Carpal tunnel release (endoscopic or open)** is not considered appropriate for **ANY** of the following:
- ◆ Peripheral nerve compression is not located within the carpal tunnel; **OR**
  - ◆ An alternative diagnosis explains the patient's symptoms (e.g., diabetic peripheral neuropathy); **OR**
  - ◆ Current pregnancy or within 3 months postpartum; **OR**
  - ◆ Skin nerve preservation is requested with carpal tunnel release; **OR**
  - ◆ Epineurotomy (an incision into the connective tissue framework and sheath of a nerve, which binds together the nerve bundles) is requested with carpal tunnel release; **OR**
  - ◆ Flexor retinaculum lengthening is requested with carpal tunnel release; **OR**



- ◆ Internal neurolysis (application of physical or chemical agents to cause temporary degeneration of targeted nerve fibers) is requested with carpal tunnel release; **OR**
- ◆ Hydrodissection (a pressurized fine jet of water is used to divide the soft tissues associated with CTS) is requested with carpal tunnel release; **OR**
- ◆ Thread carpal tunnel release; **OR**
- ◆ Ultrasound-guided percutaneous carpal tunnel release.

### **Level of Care Criteria**

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                |
|-----------------------|------------------------------------------------------------------------|
| 64721                 | Neuroplasty and/or transposition; median nerve at the carpal tunnel    |
| 29848                 | Endoscopy, wrist, surgical, with release of transverse carpal ligament |

# Medical Evidence

Donati et al. (2024) conducted a systematic review and meta-analysis to compare the short- and long-term efficacy of manual therapy versus surgery for CTS based on 5 randomized controlled trials (RCTs) with a total of 533 participants. Manual therapy showed significant improvements at 1 and 3 months compared with surgery. However, at 6 to 12 months, surgical intervention provided greater improvements in hand function and symptom severity. The authors concluded that while manual therapy offers effective short-term relief for CTS, making it a viable option for patients with mild to moderate symptoms, surgery provides more durable, long-term outcomes, particularly for severe cases.<sup>7</sup>

Nijs et al. (2023) conducted an observer-blinded, randomized controlled superiority trial to compare US-guided axillary brachial plexus block and distal peripheral forearm nerve block in patients undergoing hand surgery and CTR. The study was conducted on 80 adults. The total anesthesia-related time of the US-guided distal peripheral forearm nerve block was significantly shorter compared with the US-guided axillary brachial plexus block (7 minutes 29 seconds versus 11 minutes 46 seconds). The US-guided axillary brachial plexus block was associated with less regional anesthesia procedural pain but more pain during surgical incision compared with the US-guided distal peripheral forearm nerve block. The findings suggest that US-guided distal peripheral forearm nerve block is superior compared with US-guided axillary brachial plexus block in reducing total anesthesia-related time in patients undergoing hand surgery and CTR.<sup>8</sup>

Fowler et al. (2019) determined the rate of false positives for nerve conduction studies (NCSs) and ultrasound (US) in a population without signs and symptoms of carpal tunnel syndrome (CTS) using a CTS-6 score of 0 as the reference standard. Patients referred for NCSs for reasons other than CTS (CTS-6 score 0) were included in the study. The cross-sectional area (CSA) of the median nerve at the level of the carpal tunnel inlet was measured using US in 40 hands. The US was positive in 9 of 40 (23%), and NCS was positive in 17 of 40 (43%). Only 2 patients had a false-positive US, (e.g., they did not have a positive NCS as well). However, there were 11 patients who had a false-positive NCS, (i.e., they did not have a positive US as well). From this prospective study, the authors concluded that US has a lower false-positive rate than NCSs in

asymptomatic patients as measured by the CTS-6 diagnostic tool. Because tests with a low false-positive rate are preferred before ordering a confirmatory diagnostic test, the authors recommend US be used rather than NCSs, if a confirmatory diagnostic test is desired.<sup>6</sup>

Jain et al. (2014) reported that carpal tunnel release (CTR) was the most common upper extremity surgery, based on the 2006 National Survey of Ambulatory Surgery. An estimated 576,924 carpal tunnel releases and 25,250 wrist arthroscopies were performed in the United States in 2006. Of the procedures assessed by Jain et al. (rotator cuff repairs, shoulder arthroscopies excluding those for cuff repairs, carpal tunnel releases, and wrist arthroscopies excluding those for carpal tunnel release), CTR had the highest utilization rate (37.3 per 10,000 persons in persons 45 to 64-year-olds; 38.7 per 10,000 persons in 65 to 74-year-olds, and 44.2 per 10,000 persons in the age group 75 years and older).<sup>2</sup>

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# Clinical Guideline Revision History/Information

| Original Date: November 3, 2023 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Version 2                       | 1/16/2025 | <ul style="list-style-type: none"><li>• Annual review.</li><li>• Clinical approach updated.</li><li>• Added two new indications regarding severe carpal tunnel syndrome/injury that bypass conservative care requirements.</li><li>• Standardized conservative care section language and added in a 6-week timeline.</li><li>• Medical Evidence section updated with two articles (Donati et al., Nijs et al.).</li><li>• CPT/HCPCS codes verified and descriptions updated.</li></ul> |



## **Cohere Medical Policy – Cervical Spinal Fusion**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 3  
**Effective Date:** December 19, 2024

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy – Cervical Spinal Fusion

**Date of last literature review:** 12/16/2024

**Document last updated:** 12/16/2024

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0–17 yo)

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# Medical Necessity Criteria

## **Service: Cervical Spinal Fusion**

### **Recommended Clinical Approach**

Cervical spinal fusion (arthrodesis) may be necessary in conditions such as fracture or dislocation, spinal deformities or stenosis, infection, tumors or degenerative changes. This may be achieved via an anterior or posterior approach.

Surgery may provide more rapid relief than non-surgical treatment options, as well as prevent further spinal cord dysfunction and neurological deficits. Advanced imaging is recommended prior to surgical intervention.<sup>1-2</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ **Cervical spinal fusion** is considered appropriate if **ALL** of the following are **TRUE**<sup>2-3</sup>:

- ◆ No nicotine product use for 6 weeks with a negative lab test within 30 days (unless surgery is urgently required for progressive neurologic deficit); **AND**
- ◆ **ANY** of the following is **TRUE**:
  - The patient has myelopathy, and **ALL** of the following are **TRUE**:
    - **ANY** of the following myelopathy symptoms:
      - ◆ Gait disturbance or abnormality; **OR**
      - ◆ Frequent falls; **OR**
      - ◆ Loss of dexterity/coordination; **OR**
      - ◆ Bowel or bladder dysfunction; **OR**
      - ◆ Spasticity or tremors; **OR**
      - ◆ Electric shock sensations; **OR**
      - ◆ Lhermitte's phenomenon; **AND**
    - **ANY** of the following myelopathy findings:
      - ◆ Lhermitte's sign (an electric shock-like sensation down the spine or into the upper

- extremities with forward flexion of the cervical spine); **OR**
    - ◆ Hoffman's sign; **OR**
    - ◆ Atrophy; **OR**
    - ◆ Hypertonicity; **OR**
    - ◆ Hyperreflexia; **OR**
    - ◆ Positive Babinski reflex (extension of toes with distal to proximal plantar stimulation of foot); **OR**
    - ◆ Multiple beats or sustained clonus; **OR**
    - ◆ Decreased proprioception or vibratory sense; **OR**
    - ◆ Positive Romberg test; **OR**
    - ◆ Dysdiadochokinesia; **OR**
    - ◆ Loss of sphincter tone; **AND**
  - A diagnostic finding of spinal cord compressive pathology or moderate canal stenosis consistent with the presentation utilizing the following<sup>4-7</sup>:
    - ◆ Magnetic resonance imaging (MRI) scans are the preferred, advanced imaging diagnostic method; **OR**
    - ◆ Computed tomography (CT) myelography is recommended if MRI is contraindicated or if ossification of the posterior longitudinal ligament (OPLL) is present; **OR**
- The patient has radiculopathy, and **ALL** of the following are **TRUE**:
  - **ANY** of the following radiculopathy symptoms:
    - ◆ Neck pain; **OR**
    - ◆ Arm pain; **OR**
    - ◆ Scapular pain; **OR**
    - ◆ Periscapular pain; **OR**
    - ◆ Anterior chest pain; **OR**
    - ◆ Weakness, numbness, or paresthesia in the upper extremity; **OR**
    - ◆ Headache; **AND**
  - **ANY** of the following radiculopathy findings:
    - ◆ Upper extremity motor strength deficit; **OR**

- ◆ Upper extremity sensory deficit; **OR**
- ◆ Absent or decreased deep-tendon reflexes; **OR**
- ◆ Scapular winging; **OR**
- ◆ **ANY** of the following positive specialty tests:
  - Spurling's test or maneuver or compression test (reproduction of symptoms with neck extension, lateral flexion, and downward compression or loading; **OR**
  - Shoulder abduction test (symptoms are relieved with shoulder abduction); **AND**
- A diagnostic finding of nerve root compressive pathology or moderate foraminal stenosis consistent with the presentation utilizing **ANY** of the following<sup>4-7</sup>:
  - ◆ MRI scans are the preferred, advanced imaging diagnostic method; **OR**
  - ◆ CT myelography is recommended in the event of MRI contraindication; **AND**
- Failure of conservative management for greater than 6 weeks, including **AT LEAST TWO (2)** of the following:
  - ◆ Anti-inflammatory medications, analgesics or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **OR**
  - ◆ Physical therapy, including a physician-directed home exercise program; **OR**
  - ◆ Injections, when medically appropriate, including **ANY** of the following:
    - Facet injections/medial branch blocks (MBB); **OR**
    - Epidural steroid injections (ESI); **AND**
- **ANY** of the following is **TRUE**:
  - ◆ The patient's severe pain or disability is affecting their quality of life and limiting their daily life (including working and ability to provide self-care)<sup>8</sup>; **OR**
  - ◆ Fracture or instability on radiographic films measuring **ANY** of the following:

- Sagittal plane angulation greater than 11° at a single level; **OR**
- Greater than 3.5 mm of anterior subluxation in association with radicular/cord dysfunction; **OR**
- Subluxation at the first cervical (C1) level at the atlantodental interval of more than 3 mm in an adult and 5 mm in a child
- Revision or repeat spinal fusion (e.g., due to prior unhealed fusion attempt) when at least 6 months have elapsed since the original surgery and imaging studies confirm the absence of healing in the preceding 3 months unless failure has occurred (e.g., pseudoarthrosis).<sup>9</sup>

### Non-Indications

- **Cervical spinal fusion** is not considered appropriate if **ANY** of the following is **TRUE**:
- ◆ Current laboratory-confirmed nicotine use (unless surgery is urgently required for progressive neurologic deficit); **OR**
  - ◆ In anterior cervical discectomy and fusion (ACDF), when there is ossification of the posterior longitudinal ligament, unless kyphosis is present.

### Level of Care Criteria

Inpatient or Outpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                                          |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 20999          | Unlisted procedure, musculoskeletal system, general                                                                                       |
| 22532          | Arthrodesis, lateral extracavitary technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic |
| 22548          | Arthrodesis, anterior transoral or extraoral                                                                                              |

|       |                                                                                                                                                                                                                                                               |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | technique, clivus-C1-C2 (atlas-axis), with or without excision of odontoid process                                                                                                                                                                            |
| 22551 | Arthrodesis, anterior interbody, including disc space preparation, discectomy, osteophylectomy and decompression of spinal cord and/or nerve roots; cervical below C2                                                                                         |
| 22552 | Arthrodesis, anterior interbody, including disc space preparation, discectomy, osteophylectomy and decompression of spinal cord and/or nerve roots; cervical below C2, each additional interspace (List separately in addition to code for primary procedure) |
| 22554 | Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); cervical below C2                                                                                                               |
| 22556 | Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic                                                                                                                        |
| 22585 | Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); each additional interspace (List separately in addition to code for primary procedure)                                          |
| 22590 | Arthrodesis, posterior technique, craniocervical (occiput-C2)                                                                                                                                                                                                 |
| 22595 | Arthrodesis, posterior technique, atlas-axis (C1-C2)                                                                                                                                                                                                          |
| 22600 | Arthrodesis, posterior or posterolateral technique, single interspace; cervical below C2 segment                                                                                                                                                              |
| 22610 | Arthrodesis, posterior or posterolateral technique, single interspace; thoracic (with lateral transverse technique, when performed)                                                                                                                           |
| 22614 | Arthrodesis, posterior or posterolateral technique, single interspace; each additional interspace (List separately in addition to code for primary procedure)                                                                                                 |

|       |                                                                                                                                                                                                                                                                                                                           |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22634 | Arthrodesis, combined posterior or posterolateral technique with posterior interbody technique including laminectomy and/or discectomy sufficient to prepare interspace (other than for decompression), single interspace, lumbar; each additional interspace (List separately in addition to code for primary procedure) |
| 22800 | Arthrodesis, posterior, for spinal deformity, with or without cast; up to 6 vertebral segments                                                                                                                                                                                                                            |
| 22802 | Arthrodesis, posterior, for spinal deformity, with or without cast; 7 to 12 vertebral segments                                                                                                                                                                                                                            |
| 22804 | Arthrodesis, posterior, for spinal deformity, with or without cast; 13 or more vertebral segments                                                                                                                                                                                                                         |
| 22808 | Arthrodesis, anterior, for spinal deformity, with or without cast; 2 to 3 vertebral segments                                                                                                                                                                                                                              |
| 22810 | Arthrodesis, anterior, for spinal deformity, with or without cast; 4 to 7 vertebral segments                                                                                                                                                                                                                              |
| 22812 | Arthrodesis, anterior, for spinal deformity, with or without cast; 8 or more vertebral segments                                                                                                                                                                                                                           |
| 22830 | Exploration of spinal fusion                                                                                                                                                                                                                                                                                              |
| 22840 | Posterior non-segmental instrumentation (eg, Harrington rod technique, pedicle fixation across 1 interspace, atlantoaxial transarticular screw fixation, sublaminar wiring at C1, facet screw fixation) (List separately in addition to code for primary procedure)                                                       |
| 22841 | Internal spinal fixation by wiring of spinous processes (List separately in addition to code for primary procedure)                                                                                                                                                                                                       |
| 22842 | Posterior segmental instrumentation (eg, pedicle fixation, dual rods with multiple hooks and sublaminar wires); 3 to 6 vertebral segments (List separately in addition to code for primary procedure)                                                                                                                     |
| 22845 | Anterior instrumentation; 2 to 3 vertebral segments                                                                                                                                                                                                                                                                       |

|       |                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | (List separately in addition to code for primary procedure)                                                                                                                                                                                                                                                                                                                                          |
| 22846 | Anterior instrumentation; 4 to 7 vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                                                                                                                                                      |
| 22847 | Anterior instrumentation; 8 or more vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                                                                                                                                                   |
| 22849 | Reinsertion of spinal fixation device                                                                                                                                                                                                                                                                                                                                                                |
| 22853 | Insertion of interbody biomechanical device(s) (eg, synthetic cage, mesh) with integral anterior instrumentation for device anchoring (eg, screws, flanges), when performed, to intervertebral disc space in conjunction with interbody arthrodesis, each interspace (List separately in addition to code for primary procedure)                                                                     |
| 22854 | Insertion of intervertebral biomechanical device(s) (eg, synthetic cage, mesh) with integral anterior instrumentation for device anchoring (eg, screws, flanges), when performed, to vertebral corpectomy(ies) (vertebral body resection, partial or complete) defect, in conjunction with interbody arthrodesis, each contiguous defect (List separately in addition to code for primary procedure) |
| 22859 | Insertion of intervertebral biomechanical device(s) (eg, synthetic cage, mesh, methylmethacrylate) to intervertebral disc space or vertebral body defect without interbody arthrodesis, each contiguous defect (List separately in addition to code for primary procedure)                                                                                                                           |
| 22899 | Unlisted procedure, spine                                                                                                                                                                                                                                                                                                                                                                            |

## Medical Evidence

The North American Spine Society (NASS) published a coverage recommendation for cervical fusion (2023). Recommendations for the procedure include anterior and posterior decompression for the treatment of pyogenic infections, including discitis osteomyelitis and epidural abscesses. Cervical fusion was recommended for the treatment of spinal tumors, and the committee stated that this should not be limited to primary bone tumors. Fusion procedures can restore spinal stability. Instability following traumatic spine injuries can be corrected with fusion, despite the lack of comparative studies available for all injury types. The recommendation further describes the benefit of the procedure for spinal deformities, cervical myelopathy, cervical radiculopathy, adjunct to excision of synovial facet cysts, nonunion pseudoarthrosis, and nontraumatic instability. The recommendation states that the procedure may not be appropriate for the treatment of axial neck pain without neurological symptoms or for patients undergoing isolated posterior foraminotomy.<sup>10</sup>

The American College of Radiology (ACR) Expert Panel on Neurological Imaging published several guidelines related to myelopathic evaluation:

- Agarwal et al. (2021) updated the previous *Myelopathy Appropriate Use Criteria*, with magnetic resonance imaging (MRI) recommended as initial imaging for acute-onset myelopathy as well as chronic or progressive myelopathy due to its superior resolution of soft tissue and ability to evaluate surrounding structures. Computed tomography (CT) is designated as 'May Be Appropriate' in the ratings, with CT myelography of possible use prior to surgical intervention.<sup>1</sup>
- McDonald et al. (2019) recommend radiography, MRI or CT for initial imaging in new or increasing nontraumatic neck pain, as well as in cervical radiculopathy. In patients with a history of cervical spine surgery, radiography and non-contrast CT are primary recommendations with a disagreement on the appropriateness of MRI (contrast and non-contrast). CT myelography is rated as May Be Appropriate.<sup>11</sup>



In a systematic review by Lannon et al. (2021), degenerative cervical myelopathy (DCM) is described as a leading cause of spinal cord injury and spinal stenosis with increasing incidence. Early surgical referral is recommended, along with conservative management, to prevent progressive neurologic compromise.<sup>3</sup>

In a 2020 clinical review, McCormick et al. discuss cervical spondylotic myelopathy including patient presentation of symptoms, preference of MRI as primary imaging, with CT myelography as an alternative, in patients with contraindications, and the necessity of surgery in moderate to severe cases. Prompt surgical referral is recommended.<sup>12</sup>

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# Clinical Guideline Revision History/Information

|                                   |            |                                                                                                                                                                                                                          |
|-----------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Original Date: September 22, 2023 |            |                                                                                                                                                                                                                          |
| Review History                    |            |                                                                                                                                                                                                                          |
| Version 2                         | 09/20/2024 | Updated language regarding conservative treatment and nicotine use                                                                                                                                                       |
| Version 3                         | 12/19/2024 | <ul style="list-style-type: none"><li>• Annual review.</li><li>• Revised conservative care and nicotine use sections.</li><li>• Literature review- additions made</li><li>• Style updates made per Style Guide</li></ul> |



## **Cohere Medical Policy - Chiropractic Treatment**

*Clinical Policy for Medical Necessity Review*

**Version: 2**

**Cohere Health UMC Approval Date: October 16, 2025**

Last Annual Review: October 16, 2025

Revision: Not Applicable

Next Annual Review: October 16, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Chiropractic Treatment

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Chiropractic Treatment***

Cohere Health takes an evidence-based approach to reviewing musculoskeletal procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Musculoskeletal procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions



## **Description**

Chiropractic healthcare focuses on the relationship between the body's structure and function, primarily focusing on the spine. Care also includes diagnosing and treating mechanical disorders and how joint dysfunction can impact the nervous system.<sup>1</sup> The primary modality is manipulation and typically involves the spine however, other extremities and joints can be involved. Individual States govern the scope of practice of chiropractic services and other modalities (e.g., electric stimulation, therapeutic ultrasound, traction, exercise, manual/massage therapy).

## **Medical Necessity Criteria**

### **Indications**

**Chiropractic treatment** is considered appropriate if **ALL** of the following are **TRUE**<sup>2-7</sup>:

- Treatment is to be performed by a licensed Doctor of Chiropractic (DC);  
**AND**
- Treatment occurs in an outpatient setting; **AND**
- The patient is experiencing **AT LEAST TWO** of the following<sup>8</sup>:
  - Pain; **OR**
  - Tenderness; **OR**
  - Asymmetry/misalignment identified by observation or palpation; **OR**
  - Limited range of motion; **OR**
  - Tissue tone or texture abnormality; **OR**
  - Functional deficits; **AND**
- The patient has a musculoskeletal or neuro-musculoskeletal condition that is creating a functional impairment, necessitating evaluation and treatment that affects **ANY** of the following<sup>9,10</sup>:
  - Neck<sup>9,11</sup>; **OR**
  - Cervicogenic headache<sup>9</sup>; **OR**
  - Mid-back/thoracic region<sup>12</sup>; **OR**
  - Lower back/lumbar region<sup>9</sup>; **OR**
  - Pelvis; **OR**
  - Shoulder; **OR**
  - Hip; **OR**
  - Knee; **OR**
  - Foot and ankle; **AND**

- The plan of care includes appropriate documentation to demonstrate medical necessity, including **ALL** of the following:
  - Long- and short-term goals that are specific, quantifiable (measurable), and objective; **AND**
  - Estimated time to achieve goals; **AND**
  - Frequency and duration of treatments; **AND**
  - Treatments provided with applicable procedure codes listed, and body regions treated (specify the precise level of subluxations that bear a direct causal relationship to symptoms); **AND**
  - Objective measures at the beginning, during, and after treatment to quantify progress, support continued treatment; **AND**
  - Home recommendations, as applicable; **AND**
  - To support the onset and continuation of treatment, there must be a reasonable expectation of recovery or improvement in function.

## Non-Indications

**Chiropractic treatment** is not considered appropriate if **ANY** of the following is **TRUE**:

- Unattended electrical stimulation when used for peripheral neuropathy; **OR**
- If no improvement is documented within 30 days despite modifying treatment, treatment is not considered medically necessary; **OR**
- Internal manipulation; **OR**
- Procedures considered experimental or investigational and not adequately supported by peer-reviewed medical literature; **OR**
- Structured interventions to improve the patient's overall physical fitness (e.g., training, conditioning); **OR**
- Services are for maintenance care, including **ANY** of the following:
  - Preserving the present level of function; **OR**
  - Begins when the goal is achieved and no further progress is occurring;**OR**
- Machine-based decompression/traction device (e.g., Accu-Spina System; Decompression Reduction Stabilization (DRS) System; DRX 9000; DX2 Decompression System; Integrity Spinal Care System; Intervertebral Differential Dynamics Therapy (IDD Therapy); Lordex Lumbar Spine System; MTD 4000 Mettler Traction Decompression System; SpineRx-LDM; VAX-D Spinal Decompression System); **OR**

- The patient has **ANY** of the following absolute contraindications for dynamic thrust techniques<sup>13</sup>:
  - Acute fracture; **OR**
  - Dislocation; **OR**
  - Unstable os odontoideum; **OR**
  - Malignancies of the spine; **OR**
  - Infection of bones, joints of spine (e.g., osteomyelitis, septic discitis, and tuberculosis of the spine); **OR**
  - Signs and symptoms of cauda equina; **OR**
  - Signs and symptoms of myelopathy; **OR**
  - Vertebrobasilar insufficiency syndrome when cervical manipulation is requested; **OR**
  - Major artery aneurysm near proposed manipulation; **OR**
  - Rheumatoid arthritis; **OR**
  - Psoriatic arthritis; **OR**
  - Osteoporosis.

### **Level of Care Criteria**

Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                         |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 97012                 | Application of modality to one or more areas; traction, mechanical                                                                                                                                              |
| 97014                 | Application of a modality to 1 or more areas; electrical stimulation (unattended)                                                                                                                               |
| 97032                 | Application of a modality to 1 or more areas; electrical stimulation (manual), each 15 minutes                                                                                                                  |
| 97110                 | Therapeutic procedure, 1 or more areas, each 15 minutes; therapeutic exercises to develop strength and endurance, range of motion and flexibility                                                               |
| 97112                 | Therapeutic procedure, 1 or more areas, each 15 minutes; neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture, and/or proprioception for sitting and/or standing activities |
| 97140                 | Manual therapy techniques (e.g., mobilization/manipulation, manual lymphatic drainage, manual traction), 1 or more regions, each 15 minutes                                                                     |
| 97530                 | Therapeutic activities, direct (one-on-one) patient contact (use of dynamic activities to improve functional performance), each 15 minutes                                                                      |
| 98940                 | Chiropractic manipulative treatment (CMT); spinal, 1-2 regions                                                                                                                                                  |
| 98941                 | Chiropractic manipulative treatment (CMT); spinal, 3-4 regions                                                                                                                                                  |
| 98942                 | Chiropractic manipulative treatment (CMT); spinal, 5 regions                                                                                                                                                    |

|       |                                                                                                                                            |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 98943 | Chiropractic manipulative treatment (CMT);<br>extraspinal, 1 or more regions                                                               |
| G0283 | Electrical stimulation (unattended), to one or more<br>areas for indication(s) other than wound care, as<br>part of a therapy plan of care |

# Medical Evidence

Systematic reviews and meta-analyses of randomized clinical trials (RCTs) have been performed to study the efficacy of spinal manipulation for neck pain and chronic low back pain. Chaibi et al. (2021) evaluated 6 studies with a total of 446 patients who experienced neck pain for 6 weeks or less. The primary outcome measure was pain intensity, which was determined by the visual analogue scale (VAS) or numeric rating scale (NRS). Secondary outcomes included measures of quality of life, adverse effects, and disability. The authors concluded that SMT is effective alone or with an additional modality to treat neck pain with minimal adverse effects.<sup>14</sup> Rubinstein et al. (2019) analyzed the benefits of spinal manipulation for low back pain. A total of 47 RCTs were included with 9211 participants (average age 35–60) with or without referred chronic low back pain. When compared to other therapies, SMT had similar effects for short-term pain relief and a minimal improvement in function. Mild to moderate adverse effects were reported.<sup>15</sup>

Haas et al. (2018) performed a dual-center randomized controlled trial focused on the dose-response and efficacy of spinal manipulation for the care of cervicogenic headache, as the optimal number of visits for spinal manipulative therapy was unknown. A total of 256 participants were studied three times per week for six weeks and received a focused light-massage control when a session did not include spinal manipulation. The highest and most effective dose was 18 visits for spinal manipulation, resulting in half the number of days when a patient experienced a cervicogenic headache.<sup>1</sup>

In a practice-based randomized controlled trial, Haas et al. (2014) examined dose-response and efficacy of spinal manipulation for the care of chronic lower back pain. Previously, there were no full-scale trials of the optimal number of visits to care for any condition with spinal manipulation. 400 patients with chronic low back pain participated in the study, in which they were treated with spinal manipulation by a chiropractor three times per week for six weeks. It was concluded that the number of spinal manipulation visits had a modest effect on chronic lower back pain above 18 visits. 12 visits were determined to yield the most favorable results.<sup>16</sup>

Masaracchio et al. (2013) investigated the short-term effects of thoracic spine thrust manipulation combined with cervical spine non-thrust manipulation (experimental group) versus cervical spine non-thrust manipulation alone (comparison group) in patients with mechanical neck pain. Of the 64 participants in the randomized clinical trial, the experimental group members demonstrated significantly greater improvements in pain and function.<sup>12</sup>

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Updated May 7, 2019.

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# Policy Revision History/Information

| Original Date: September 19, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                    |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Version 2                         | 10/16/2025 | <p>Annual review.</p> <p>Changed title from “Chiropractic Manipulative Treatment” to “Chiropractic Treatment.”</p> <p>Moved “rheumatoid arthritis, psoriatic arthritis, severe osteoporosis, or malignant tumor in the region of manipulation” from the Indications to Non-Indications section.</p> <p>Updated requirements for plan of care.</p> <p>Added non-indication for experimental and investigational procedures.</p> <p>Updated the non-indication for structured interventions.</p> <p>Added non-indication for machine-based decompression/traction devices.</p> <p>Expanded on the non-indications for acute fracture and infection (for dynamic thrust techniques).</p> <p>Added CPT 97014, 97112, 97530.</p> <p>Expanded the Medical Evidence section; added 2 citations.</p> |



## **Cohere Medical Policy – Enzyme Injection for Dupuytren's Contracture (XIAFLEX®)**

*Clinical Policy for Medical Necessity Review*

**Version: 3**

**Cohere Health UMC Approval Date: July 10, 2025**

Last Annual Review: July 10, 2025

Revision: Not Applicable

Next Annual Review: July 10, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Enzyme Injection for Dupuytren's Contracture (XIAFLEX®)

**Type:** ☒ Adult (18+ yo) | ☐ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Enzyme Injection for Dupuytren's Contracture (XIAFLEX®)***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the

patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Dupuytren's contracture, also called Dupuytren's disease, is a condition that affects the palmar fascia. This is a fibrous layer of tissue underneath the skin of the palm, and above the tendons, bones, nerves, and blood vessels. In patients with this affliction, the palmar fascia thickens and shortens, causing a contracture which can make it difficult or impossible to straighten the fingers, particularly the ring and little fingers. Over time, the contracture may interfere with hand function and daily activities. Surgical and non-surgical treatments are available depending on the severity of Dupuytren's contracture. Collagenase injections are effective for the early stages of the disease.<sup>1</sup> XIAFLEX® is a combination of bacterial collagenases indicated for treating adult patients with Dupuytren's contracture with a palpable cord.<sup>2</sup> Xiaflex is the brand name for the drug collagenase clostridium histolyticum.

## **Medical Necessity Criteria**

### **Indications**

**Enzyme injection for Dupuytren's contracture (XIAFLEX®)** is considered appropriate if **ANY** of the following is **TRUE**:

- The patient is being considered for an initial therapy request, and **ALL** of the following criteria are met<sup>1-3</sup>:
  - **ANY** of the following<sup>5-6</sup>:
    - Current nicotine user with no product use for 6 weeks, and **ANY** of the following:
      - Negative urine (cotinine) lab test within 30 days; **OR**
      - Surgery is urgently required due to documented reason; **OR**
    - No history of nicotine product use within the last 12 months; **OR**
    - No lifetime history of nicotine product use; **OR**
  - The patient is 18 years of age or older<sup>3</sup>; **AND**
  - Documented diagnosis of Dupuytren's contracture with a palpable cord with a contracture of a metacarpophalangeal (MP) joint or proximal interphalangeal (PIP) joint<sup>3</sup>; **AND**
  - Documentation of a fixed-flexion contracture in the MP joint or the PIP joint of equal or greater than 20° in at least one finger<sup>4</sup>; **AND**

- Documentation that the flexion deformity results in functional limitations impacting the patient's activities of daily living<sup>1</sup>; **AND**
- The total number of injections does not exceed 1 injection per cord per 4-week period, and no more than 3 total injections in a 12-week period<sup>3</sup>; **AND**
- No more than 2 injections in the same hand per session<sup>3</sup>; **AND**
- If **ANY** of the following is **TRUE**<sup>4</sup>:
  - If isolated MP joint involvement (per digit): documented contracture of at least 20 degrees flexion; **OR**
  - If isolated PIP joint involvement (per digit): documented contracture of at least 20 degrees flexion; **AND**
- If the patient is being considered for a subsequent Xiaflex therapy request, and **ALL** of the following criteria are met<sup>3</sup>:
  - All of the initial treatment criteria listed above are met; **AND**
  - A passive finger extension procedure was performed on each Xiaflex-treated joint at the follow-up visit, approximately 24 to 72 hours after the injection(s), if a contracture remained, to facilitate cord disruption<sup>3</sup>; **AND**
  - If 2 joints in 1 finger were Xiaflex-treated, the finger extension procedure on the affected MP joint was done before performing the finger extension procedure on the affected PIP joint<sup>3</sup>; **AND**
  - Documentation of positive clinical response (reduction in contraction to less than or equal to 5 degrees of flexion immediately following treatment) to prior treatment with Xiaflex<sup>3</sup>; **AND**
  - The previous Xiaflex treatment was at least 4 weeks ago<sup>3</sup>; **AND**
  - MP joint or PIP joint contracture persists in the affected cord from the last injection.<sup>3</sup>

## Non-Indications

**Enzyme Injection for Dupuytren's Contracture (XIAFLEX®)** is not considered appropriate if **ANY** of the following is **TRUE**<sup>3</sup>:

- The total number of injections is greater than 3 injections per specific cord (finger) in a patient's lifetime<sup>3</sup>; **OR**
- For a subsequent injection, the last injection was less than 4 weeks before this request<sup>3</sup>; **OR**
- The patient has received surgical treatment (e.g., fasciectomy, fasciotomy) on the selected primary joint within 90 days of the first injection of this agent<sup>3</sup>; **OR**



- XIAFLEX will be administered by a healthcare provider who is not experienced in injection procedures of the hand and the treatment of Dupuytren's contracture<sup>3</sup>; **OR**
- The patient received anticoagulation medications (except for up to 150 mg of aspirin daily) within 7 days before the treatment date.<sup>3</sup>

### **Level of Care Criteria**

Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                        |
|-----------------------|----------------------------------------------------------------------------------------------------------------|
| 20527                 | Injection, enzyme (eg, collagenase), palmar fascial cord (ie, Dupuytren's contracture)                         |
| 26341                 | Manipulation, palmar fascial cord (ie, Dupuytren's cord), post enzyme injection (eg, collagenase), single cord |
| J0775                 | Injection, collagenase, Clostridium histolyticum, 0.01 mg                                                      |

## Medical Evidence

In a recent review of the literature, Khaliq and Orji (2024) emphasize that a key issue in treating Dupuytren's disease is the notably high recurrence rate in surgical and nonsurgical treatments. Nonsurgical options such as collagenase injections have a high short-term success rate, but recurrence rates range from 35% to 58% depending on the study.<sup>1</sup> However, recurrent contractures can be re-treated. In an observational, open-label study conducted in subjects who had participated in Xiaflex clinical trials for Dupuytren's contracture, no adverse events were identified in patients who were retreated with Xiaflex.<sup>3</sup>

Limited fasciectomy is the most common surgery to treat Dupuytren's contracture in the United States and Europe and involves the removal of diseased cords to correct Dupuytren's contracture. Dias et al. (2024) performed a clinical trial to compare collagenase injection to limited fasciectomy in patients with moderate contracture. The Patient Evaluation Measure Hand Health Questionnaire score was the primary outcome measured in this unblinded, multicenter, pragmatic, two-arm, randomized controlled non-inferiority trial. The questionnaire score range was 0 to 100, with higher scores indicating worse outcome, and was measured at baseline, 3 months, 6 months, 1 year, and 2 years post-treatment. At 1 year post-treatment, collagenase treatment was not non-inferior to fasciectomy. Although both therapies improve hand health, collagenase injection initially results in a more significant improvement than surgery, but after one year, fasciectomy demonstrates a greater improvement. Moderate or severe adverse events were rare, yet occurred more often in the limited fasciectomy group.<sup>2</sup>

Lambi and colleagues (2023) examined pharmacotherapies in Dupuytren disease, with current and novel strategies. They discuss collagenase therapy as the only approved nonsurgical treatment besides local corticosteroid injections. Surgical therapy with limited fasciectomy and dermatofasciectomy is considered the gold standard for operative care due to its proven efficacy and low recurrence rates. Minimally invasive therapies other than collagenase and corticosteroid injections are being investigated as surgical alternatives to reduce high complication rates with surgical

interventions. Multiple classes of anti-inflammatory and anti-mitotic medications, corticosteroids, the antioxidants vitamin E and N-acetyl-L-cysteine, various anti-hypertensive and vasoactive medications, and the synthetic nonsteroidal antiestrogen tamoxifen are among several pharmacologic agents under investigation for use in Dupuytren disease, but have not demonstrated either decreased severity or recurrence in clinical trials. Currently promising therapies that target inflammation and fibrosis include tumor necrosis factor, nintedanib, pirfenidone, tocilizumab, and rituximab.<sup>8</sup>

Sandler et al. (2022) systematically reviewed the literature regarding treating Dupuytren's contracture with collagenase in MP joints and/or PIP joints of the fingers. The evidence revealed that successful treatments immediately reduced contractures to less than or equal to five degrees, with minimal adverse effects related to treatment. It was found that initial contracture reduction was greater in MP than in PIP joints. Recurrence was found in 23% of treated joints, within 6–24 months of treatment.<sup>4</sup>

Burge et al. (1997) completed a case-control study of 222 patients to examine the effects of smoking and alcohol on the risk of Dupuytren's contracture. It was found that current cigarette smoking was strongly associated with Dupuytren's contracture requiring surgical intervention. High incidence was found with alcohol use; however, the prevalence of the condition in alcoholics was likely attributed to the incidence of cigarette smoking in this population.<sup>6</sup>

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## Policy Revision History/Information

| Original Date: January 1, 2022 |            |                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                 |            |                                                                                                                                                                                                                                                                                                                                                                                                                |
| Version 2                      | 03/15/2024 | Annual review. Policy criteria reviewed and updated per medical literature.                                                                                                                                                                                                                                                                                                                                    |
| Version 3                      | 07/10/2025 | <p>Annual review.</p> <p>Added new Description section.</p> <p>Indications and non-indications were revised and updated using the criteria from the 2024 Xiaflex highlights of prescribing information, and added standard nicotine indications</p> <p>No changes to procedure codes.</p> <p>Literature review - Revised existing Medical Evidence for accuracy, and added new paragraphs with references.</p> |



# **Cohere Medical Policy – Epidural Steroid Injections (ESI)**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 4  
**Effective Date:** December 19, 2024

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy – Epidural Steroid Injection (ESI)

**Date of last literature review:** 11/5/2024

**Document last updated:** 12/19/2024

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)

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# Medical Necessity Criteria

## ***Service: Epidural Steroid Injections (ESI)***

### **Recommended Clinical Approach**

Epidural steroid injections (ESIs) are used to treat radicular back and neck pain when conservative and noninvasive treatments fail. ESI involves the administration of an anesthetic and/or steroid in the epidural space of the spinal cord to treat inflammation that affects nerve roots. Three approaches for ESI include (1) Interlaminar or translaminar, (2) caudal, and (3) transforaminal.<sup>1</sup> ESI should be performed using radiographic image guidance. This guideline does not apply to epidural, spinal injections performed for perioperative pain management, or intrathecal, epidural injections done to assess candidacy for intrathecal pump

### **Medical Necessity Criteria**

#### **Indications**

- An **epidural steroid injection (ESI)** is considered appropriate if **ANY** of the following is **TRUE**<sup>2-16,19</sup>:
- ◆ The injection is a diagnostic, transforaminal ESI or diagnostic selective nerve root block (SNRB) to identify the cause of pain for surgical planning, and **ALL** of the following are met:
    - The pain is causing a functional or vocational disability, or pain levels of greater than or equal to 4 on a scale of 0 to 10; **AND**
    - Documentation of a preoperative evaluation and plan for surgery; **OR**
  - ◆ **ALL** of the following are **TRUE**:
    - The patient has **ANY** of the following:
      - Acute herpes zoster; **OR**
      - Postherpetic neuralgia that has failed or had adverse side effects with trial of neuropathic medications;**AND**

- The patient has received no more than 6 ESIs over 12 consecutive months<sup>16</sup>; **OR**
- ◆ The patient has radicular pain or neurogenic claudication and **ALL** of the following are **TRUE**:
  - Findings are consistent with radicular symptoms or neurogenic claudication (e.g., history, signs and symptoms, or physical exam); **AND**
  - The patient has undergone advanced imaging (CT scan or MRI) that demonstrates findings consistent with ANY of the following:
    - Radicular symptoms that correlate to the side requested (e.g., spinal stenosis, foraminal stenosis, neural impingement, disc herniation, advanced degenerative changes, postlaminectomy changes etc.); **OR**
    - Neurogenic claudication; **AND**
  - **ALL** of the following are **TRUE**:
    - The patient's pain level is greater than or equal to 4 out of 10 on a scale of 0 to 10; **AND**
    - The pain is causing a functional or vocational disability; **AND**
  - **ANY** of the following:
    - **ALL** of the following:
      - ◆ The injection is for acute radicular pain secondary to acute disc herniation; **AND**
      - ◆ Failure of conservative management for greater than 2 weeks, including anti-inflammatory medications, analgesics, or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications); **OR**
    - The injection is an initial ESI injection with failure of conservative management, defined by **ALL** of the following:
      - ◆ Greater than 6 weeks duration; **AND**
      - ◆ Anti-inflammatory medications, analgesics, or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **AND**

- ◆ Physical therapy; **OR**
- A second ESI when **ALL** of the following are **TRUE**:
  - ◆ The initial injection has failed; **AND**
  - ◆ The injection is planned with a different approach, level, or medication type; **OR**
- The injection is a repeat ESI, and **ALL** of the following are **TRUE**:
  - ◆ The most recent ESI injection resulted in **ALL** of the following:
    - 50% or greater pain or symptom relief; **AND**
    - The pain or symptom relief lasted greater than or equal to 2 months duration; **AND**
  - ◆ The patient is participating in ongoing rehabilitative approaches (e.g., physical therapy, chiropractic care, or physician-guided home exercise program); **AND**
  - ◆ No more than 4 injections are given per rolling 12-month period per spinal region.

## Non-Indications

- **Epidural steroid injection (ESI)** is not considered appropriate if **ANY** of the following is **TRUE**<sup>15-16</sup>:
- ◆ Transforaminal epidural steroid injections [TFESIs] at more than 2 nerve roots (more than 1 spinal level when bilateral or more than 2 spinal levels when unilaterally)<sup>16</sup>; **OR**
  - ◆ Presence of **ANY** of the following<sup>16</sup>:
    - Non-specific low back pain (LBP); **OR**
    - Myelopathy; **OR**
    - Cauda equina syndrome; **OR**
    - Rapidly progressing neurological deficit; **OR**
    - Epidural abscess; **OR**
  - ◆ ESIs are performed at multiple anatomical regions during the same date of service; **OR**
  - ◆ ESIs performed with biologics (e.g., platelet-rich plasma, stem cells, amniotic fluid, etc.)<sup>16</sup>; **OR**

- ◆ ESI is performed with ultrasound image guidance (except for injections performed during pregnancy) where it would be reasonable to avoid radiographs<sup>16</sup>; **OR**
- ◆ ESI injection is performed without fluoroscopy or computed tomography (CT) guidance<sup>20</sup>; **OR**
- ◆ Allergy or sensitivity to local anesthetics or other medications; **OR**
- ◆ When other types of spine injections (e.g., facet, sacroiliac joint injections, ESIs to other spinal regions etc.) are performed on the same date of service, unless medical necessity to perform multiple injections is documented in chart (e.g., risk of holding anticoagulant multiple times, presence of facet cyst causing radicular symptoms for which ESI and facet injection can be allowed at the same time, etc.); **OR**
- ◆ ESIs performed for perioperative pain management; **OR**
- ◆ Intrathecal ESIs done to assess candidacy for intrathecal pump; **OR**
- ◆ A series of ESIs are included in a single request.

### Level of Care Criteria

Outpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                                                  |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 62320          | Injection(s), of diagnostic or therapeutic substance(s) (eg, anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, including needle or catheter placement, interlaminar epidural or subarachnoid, cervical or thoracic; without imaging guidance                      |
| 62321          | Injection(s), of diagnostic or therapeutic substance(s) (eg, anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, including needle or catheter placement, interlaminar epidural or subarachnoid, cervical or thoracic; with imaging guidance (ie, fluoroscopy or CT) |

|       |                                                                                                                                                                                                                                                                                                                        |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 62322 | Injection(s), of diagnostic or therapeutic substance(s) (eg, anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, including needle or catheter placement, interlaminar epidural or subarachnoid, lumbar or sacral (caudal); without imaging guidance                      |
| 62323 | Injection(s), of diagnostic or therapeutic substance(s) (eg, anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, including needle or catheter placement, interlaminar epidural or subarachnoid, lumbar or sacral (caudal); with imaging guidance (ie, fluoroscopy or CT) |
| 64479 | Injection(s), anesthetic agent(s) and/or steroid; transforaminal epidural, with imaging guidance (fluoroscopy or CT), cervical or thoracic, single level                                                                                                                                                               |
| 64480 | Injection(s), anesthetic agent(s) and/or steroid; transforaminal epidural, with imaging guidance (fluoroscopy or CT), cervical or thoracic, each additional level (List separately in addition to code for primary procedure)                                                                                          |
| 64483 | Injection(s), anesthetic agent(s) and/or steroid; transforaminal epidural, with imaging guidance (fluoroscopy or CT), lumbar or sacral, single level                                                                                                                                                                   |
| 64484 | Injection(s), anesthetic agent(s) and/or steroid; transforaminal epidural, with imaging guidance (fluoroscopy or CT), lumbar or sacral, each additional level (List separately in addition to code for primary procedure)                                                                                              |
| 64999 | Unlisted procedure, nervous system                                                                                                                                                                                                                                                                                     |

# Medical Evidence

The Centers for Medicare and Medicaid Services (CMS) (2023) published *Local Coverage Determination (LCD) Epidural Steroid Injections (ESIs) for Pain Management (L39036)*. The LCD includes several recommendations and non-indications for ESIs for radiculopathy and pain related to the spine, including Grade A recommendations for (i) contrast-enhanced fluoroscopy to guide ESIs for improved accuracy of delivery and (ii) transforaminal ESIs in patients with lumbar disc herniations with radiculopathy.<sup>16</sup>

Kreiner et al. (2014) developed a clinical guideline for the North American Spine Society (NASS) to diagnose and treat lumbar disc herniation. Twenty-nine questions and recommendations resulted from this effort, including a Grade A recommendation for use of contrast-enhanced fluoroscopy in the routine performance of ESIs; a Grade A recommendation for ESI in treatment of lumbar disc herniation with radiculopathy; no recommendation given for optimal frequency or quantity of injections; and insufficient evidence found to make a recommendation for or against the 12-month efficacy of transforaminal ESI in lumbar disc herniation with radiculopathy.<sup>16</sup>

Manchikanti et al. (2012) conducted a randomized, double-blind, active-control trial. Patients with a diagnosis of disc herniation, radiculitis, facet joint pain, or sacroiliac joint pain were excluded. The two groups of subjects received local anesthetic only or local anesthetic mixed with non-particulate betamethasone. Success was to be measured by a greater than 50% decrease in pain and disability, and the outcome was 77% in the local anesthetic-only group and 67% in the local anesthetic mixed with non-particulate betamethasone.<sup>10</sup>

In a systematic review, Kim et al. (2011) tested the hypothesis that dexamethasone phosphate (DP) and methylprednisolone acetate (MPA) would achieve similar outcomes when used in the treatment of lumbar radiculopathy by epidural injection. The study determined that, when compared with particulate methylprednisolone, nonparticulate dexamethasone appeared to be close in safety and effectiveness.<sup>8</sup>

Furman et al. (2010) conducted a prospective, single-arm, pilot, observational study. Inclusion criteria included patients with lumbar radicular pain, and exclusion criteria included the presence of irreversible psychological barriers or anatomical anomalies. The group concluded that subjects undergoing fluoroscopic-guided, contrast-enhanced lumbar interlaminar epidural steroids for primarily radicular pain versus axial pain experienced at least a 3-month improvement on the Numeric Pain Rating Scale (NPRS).<sup>7</sup>

Ahmed et al. (2023) conducted a systematic meta-analysis of randomized controlled trials to compare ultrasonography (USG) guidance and conventional fluoroscopy (FL) guidance for ESI in the treatment of radiculopathy. Of the 7 RCTs included in the meta-analysis, the authors found no statistically significant difference in pain reduction between USG and FL groups in lumbosacral ESIs at 1 and 3 months. Functional improvement after ESIs was comparable between the groups. The risk of inadvertent vascular puncture in USG-guided ESIs was lower compared to conventional FL-guided ESIs [odds ratio 0.21 (0.07, 0.64)], and the procedure time in the USG group was significantly lower compared to the FL group.<sup>17</sup>

Mahmoud et al. (2024) conducted a systematic review and meta-analysis comparing different ESI approaches with the aim of investigating the effectiveness of various ESI procedures in adults with lower back pain. The authors concluded that a transforaminal (TF) ESI approach was most effective in decreasing pain indices (visual analog score [VAS] and Oswestery disability index [ODI]) in the long term. The authors also found that a parasagittal intralaminar (PIL) approach was most effective in decreasing VAS in the short term (less than 6 months).<sup>18</sup>

Yang et al. (2020) performed a meta-analysis of 6 RCTs to compare the clinical effectiveness of ESI to conservative treatments for patients with lumbosacral radicular pain, including physical therapy, lifestyle modifications, exercise, and patient education. The meta-analysis included 490 adult patients; 249 patients received ESI, and 241 received conservative treatment. The patients had a confirmed diagnosis of lumbar disc herniation or spinal stenosis. Pooled analysis of pain scores at short-term and intermediate follow-ups for 3 RCTs demonstrated a significant reduction in pain for ESI as compared to conservative treatments. Long-term follow-up for 2 RCTs showed comparable effectiveness of ESI and conservative treatments. Pooled

analysis showed that ESI had a significantly higher number of successful events when compared to conservative treatments.<sup>1</sup>



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Epidural Steroid Injections (ESI) (Version 4)  
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# Clinical Guideline Revision History/Information

| Original Date: April 21, 2021 |            |                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                |            |                                                                                                                                                                                                                                                                                                                                                                |
| Version 2                     | 12/29/2023 |                                                                                                                                                                                                                                                                                                                                                                |
| Version 3                     | 9/20/2024  | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                                             |
| Version 4                     | 12/19/2024 | <ul style="list-style-type: none"><li>• Annual review</li><li>• Aligned to current policy guidelines.</li><li>• Updated medical evidence section.</li><li>• References updated.</li><li>• CPT codes and descriptions updated; temporary codes deleted</li><li>• Updated indications and non-indications for clarity and ease of conversion to rules.</li></ul> |



## **Cohere Medical Policy – Epidural Steroid Injections (ESIs)**

*Clinical Policy for Medical Necessity Review*

**Version:** 5

**Policy Number:** CHP-306-5

**Cohere Health UMC Approval Date:** January 15, 2026

Last Annual Review: January 15, 2026

Revision: Not Applicable

Next Annual Review: January 15, 2027

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy – Epidural Steroid Injections (ESIs)

**Policy Number:** CHP-306-5

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Epidural Steroid Injections (ESIs)***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation or those that do not align with the provided clinical information—such as mismatched laterality, body part, or CPT code—may be denied due to a lack of medical necessity resulting from insufficient or inconsistent clinical information.

### **Description**

Epidural steroid injections (ESIs) are used to treat radicular back and neck pain when conservative and noninvasive treatments fail. ESI involves the administration of an anesthetic and/or steroid in the epidural space of the spinal cord to treat inflammation that affects nerve roots. Three approaches for ESIs include interlaminar or translaminar, caudal, and transforaminal.<sup>1</sup> ESIs should be performed using radiographic image guidance. This guideline does not apply to epidural spinal injections performed for perioperative pain management or intrathecal epidural injections to assess candidacy for an intrathecal pump.



## **Medical Necessity Criteria**

### **Indications**

**Epidural steroid injections (ESIs)** are considered appropriate if **ANY** of the following is **TRUE**<sup>2-16</sup>:

- The patient has **ALL** of the following<sup>17</sup>:
  - Findings consistent with radicular pain or neurogenic claudication (e.g., history, signs and symptoms, or physical exam); **AND**
  - Advanced imaging (CT scan or MRI) findings are consistent with radicular symptoms or neurogenic claudication; **AND**
  - The patient's pain level is greater than or equal to 4 out of 10 on a pain scale (e.g., visual analog scale [VAS], numeric rating scale [NRS]); **AND**
  - **ANY** of the following:
    - The injection is an initial ESI, with failure of conservative management<sup>18</sup>, including **ALL** of the following<sup>18</sup>:
      - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
      - **ANY** of the following:
        - **ALL** of the following:
          - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
          - PT/HEP trialed for a duration of 4 weeks or more within the past 6 months; **OR**
        - Progression or worsening of symptoms due to PT/HEP treatment; **OR**
    - The injection is a repeat ESI in the same region, with **ANY** of the following:
      - The initial injection has failed, and the second ESI is planned with a different approach, level, or medication; **OR**
      - **ALL** of the following:
        - Previous ESI injection resulted in greater than or equal to 50% pain or symptom relief that lasted greater than or equal to 3 months; **AND**
        - Documentation of ongoing rehabilitative approaches (e.g., PT, chiropractic care, or HEP); **AND**

- No more than four injections are given per rolling 12-month period per spinal region; **OR**
- The injection is a diagnostic, transforaminal ESI (TFESI) or diagnostic selective nerve root block (SNRB) to identify the cause of pain for surgical planning, and **ALL** of the following:
  - The patient's pain level is greater than or equal to 4 out of 10 on a pain scale (e.g., VAS, NRS); **AND**
  - Documentation from a spine surgeon states that a diagnostic epidural injection is needed for surgical planning; **AND**
  - No more than four diagnostic injections are given per rolling 12-month period per spinal region; **OR**
- The injection is requested for acute herpes zoster or post-herpetic neuralgia, and **ALL** of the following:
  - Failed or experienced adverse side effects with trial of neuropathic medications; **AND**
  - No more than four injections are given per rolling 12-month period per spinal region.<sup>15</sup>

## Non-Indications

**Epidural steroid injection (ESIs)** are not considered appropriate if **ANY** of the following is **TRUE**<sup>15,17</sup>:

- TFESIs for more than two nerve roots (more than one spinal level when bilateral or more than two spinal levels when unilateral)<sup>15</sup>; **OR**
- Presence of **ANY** of the following<sup>15</sup>:
  - Non-specific low back pain; **OR**
  - Myelopathy; **OR**
  - Cauda equina syndrome; **OR**
  - Rapidly progressing neurological deficit; **OR**
  - Epidural abscess; **OR**
- Multiple anatomical regions are treated on the same date of service; **OR**
- Biologics (e.g., platelet-rich plasma, stem cells, amniotic fluid, etc.) are being used, as biologic ESI treatment is considered experimental<sup>18,19</sup>; **OR**
- Ultrasound image guidance is requested (except for injections performed during pregnancy) when it would be reasonable to avoid radiographs<sup>15</sup>; **OR**
- The ESI is requested without fluoroscopy or computed tomography (CT) guidance<sup>20</sup>; **OR**
- Allergy or sensitivity to local anesthetics or other medications; **OR**
- When other types of spine injections (e.g., facet, sacroiliac joint injections, ESIs to other spinal regions, etc.) are performed on the same date of service, unless medical necessity to perform multiple injections is documented in the patient's chart (e.g., risk of holding anticoagulant multiple times, presence of facet cyst causing radicular symptoms for which an ESI and facet injection can be allowed at the same time, etc.); **OR**
- The ESI is performed for perioperative pain management, as this use is out of scope for this policy on chronic pain; **OR**
- An intrathecal or epidural injection is performed to assess candidacy for intrathecal pain pumps, as this use is out of scope for this policy on chronic pain; **OR**
- A series of ESIs is included in a single request.

## **Definitions and Notes**

### **<sup>A</sup>Failure of conservative management:**

- The patient has completed a full course of conservative management without meaningful improvement.
- Patient noncompliance, closure of therapy offices, and patient inconvenience do *not* constitute a failure of conservative treatment.

## **Level of Care Criteria**

Outpatient

## **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                                                           |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 62320                 | Injection(s), of diagnostic or therapeutic substance(s) (eg, anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, including needle or catheter placement, interlaminar epidural or subarachnoid, cervical or thoracic; without imaging guidance                      |
| 62321                 | Injection(s), of diagnostic or therapeutic substance(s) (eg, anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, including needle or catheter placement, interlaminar epidural or subarachnoid, cervical or thoracic; with imaging guidance (ie, fluoroscopy or CT) |
| 62322                 | Injection(s), of diagnostic or therapeutic substance(s) (eg, anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, including needle or catheter placement, interlaminar epidural or subarachnoid, lumbar or sacral (caudal); without imaging guidance                 |
| 62323                 | Injection(s), of diagnostic or therapeutic substance(s) (eg, anesthetic, antispasmodic, opioid, steroid, other                                                                                                                                                                                                    |

|       |                                                                                                                                                                                                                               |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | solution), not including neurolytic substances, including needle or catheter placement, interlaminar epidural or subarachnoid, lumbar or sacral (caudal); with imaging guidance (ie, fluoroscopy or CT)                       |
| 64479 | Injection(s), anesthetic agent(s) and/or steroid; transforaminal epidural, with imaging guidance (fluoroscopy or CT), cervical or thoracic, single level                                                                      |
| 64480 | Injection(s), anesthetic agent(s) and/or steroid; transforaminal epidural, with imaging guidance (fluoroscopy or CT), cervical or thoracic, each additional level (List separately in addition to code for primary procedure) |
| 64483 | Injection(s), anesthetic agent(s) and/or steroid; transforaminal epidural, with imaging guidance (fluoroscopy or CT), lumbar or sacral, single level                                                                          |
| 64484 | Injection(s), anesthetic agent(s) and/or steroid; transforaminal epidural, with imaging guidance (fluoroscopy or CT), lumbar or sacral, each additional level (List separately in addition to code for primary procedure)     |
| 64999 | Unlisted procedure, nervous system                                                                                                                                                                                            |

# Medical Evidence

Mahmoud et al. (2024) conducted a systematic review and meta-analysis comparing different epidural steroid injection (ESI) approaches to investigate the effectiveness of various ESI procedures in adults with lower back pain. The authors concluded that a transforaminal (TFESI) approach was most effective in decreasing pain indices (visual analog score [VAS] and Oswestry disability index [ODI]) in the long term. The authors also found that a parasagittal intralaminar (PIL) approach was most effective in decreasing VAS in the short term (less than 6 months).<sup>21</sup>

Yang et al. (2020) performed a meta-analysis of six randomized controlled trials (RCTs) to compare the clinical effectiveness of ESIs with conservative treatments for patients with lumbosacral radicular pain, including physical therapy, lifestyle modifications, exercise, and patient education. The meta-analysis included 490 adult patients with a confirmed diagnosis of lumbar disc herniation or spinal stenosis. A pooled analysis of pain scores at short-term and intermediate follow-ups from three RCTs demonstrated a significant reduction in pain with ESIs compared to conservative treatments. Long-term follow-up for two RCTs showed comparable effectiveness of ESIs and conservative treatments. The pooled analysis revealed that ESIs had a significantly higher number of successful events compared with conservative treatments.<sup>1</sup>

Kreiner et al. (2014) developed a clinical guideline for the North American Spine Society (NASS) to diagnose and treat lumbar disc herniation. Grade A recommendations include the use of contrast-enhanced fluoroscopy in the routine performance of ESIs and ESI for the treatment of lumbar disc herniation with radiculopathy. No recommendation was provided for the optimal frequency or quantity of injections, and insufficient evidence was found to support or refute the 12-month efficacy of TFESI in treating lumbar disc herniation with radiculopathy.<sup>18</sup>

Furman et al. (2010) conducted a prospective, single-arm, pilot, observational study in patients with lumbar radicular pain. Patients undergoing fluoroscopic-guided, contrast-enhanced lumbar interlaminar epidural steroids for primarily radicular pain compared with axial pain experienced at least a 3-month improvement on the Numeric Pain Rating Scale (NPRS).<sup>7</sup>

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# Policy Revision History/Information

| Original Date: April 21, 2021 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Version 2                     | 12/29/2023 | Policy criteria reviewed and updated per medical literature.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Version 3                     | 9/20/2024  | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Version 4                     | 12/19/2024 | <p>Annual review</p> <p>Aligned to current policy guidelines.</p> <p>Updated medical evidence section and references.</p> <p>CPT codes and descriptions updated; temporary codes deleted.</p> <p>Updated indications and non-indications for clarity and ease of conversion to rules.</p>                                                                                                                                                                                                                          |
| Version 5                     | 1/15/2026  | <p>Annual Review.</p> <p>Restructured indications for clarity and efficiency.</p> <p>Added indication for no more than four diagnostic injections per rolling 12-month period per spinal region to the “diagnostic, transforaminal ESI or diagnostic selective nerve root block (SNRB)” and “acute herpes zoster or post-herpetic neuralgia” sections.</p> <p>Modified indications for pain level of greater than or equal to 4 out of 10; no longer includes functional or vocational disability requirement.</p> |

|  |  |                                                                                                                                                                                                                                 |
|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>Removed indication that imaging report must document the side and level requested.</p> <p>Updated conservative care language in initial and repeat ESI sections.</p> <p>Updated medical evidence section and references.</p> |
|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## **Cohere Medical Policy – Facet Injections**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 4  
**Effective Date:** December 19, 2024

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy – Facet Joint Injections

**Date of last literature review:** 11/08/2024

**Document last updated:** 12/19/2024

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Facet Joint Injections***

### **Recommended Clinical Approach**

The facet joint is the articulating bridge between adjacent vertebral bodies. It is innervated by two medial branch nerves from the corresponding dorsal rami, one from the spinal nerve above the joint and one from the spinal nerve below the joint. Facet injections, also known as facet joint intraarticular injections, facet blocks, or medial branch blocks (MBB), are local anesthetic injections, with or without a steroid medication, into the facet joints or near the medial branch nerve that innervates the facet joint. Facet injections are intended for diagnostic or therapeutic purposes and must be performed under CT or fluoroscopy guidance. If such a block relieves pain, radiofrequency ablation may be considered for longer relief.<sup>1-3,7-12</sup>

### **Medical Necessity Criteria**

#### **Indications**

- A **facet injection** is appropriate if **ANY** of the following is **TRUE**:
- ◆ The injection is an initial diagnostic injection, and **ALL** of the following are **TRUE**:<sup>1,3-4</sup>
    - The pain is predominantly axial neck or back pain; **AND**
    - **ANY** of the following are **TRUE**:
      - The patient's pain level is greater than or equal to 4 out of 10 on a scale of 0 to 10; **OR**
      - The pain is causing a functional disability; **AND**
    - Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>8</sup>:
      - Anti-inflammatory medications, analgesics, or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **AND**
      - Physical therapy; **AND**
    - The patient does not have untreated radiculopathy (except caused by facet joint synovial cyst) as the primary pain generator; **AND**

- Physical exam findings are suggestive of facet-mediated pain (e.g., pain exacerbated by extension, rotation, facet loading, etc.); **AND**
  - A radiology study has ruled out non-facet pathology that can explain the source of the patient's pain; **AND**
  - Frequency limitation indicated by **ALL** of the following:
    - No more than 1 spinal region (cervical, thoracic, or lumbosacral) is injected per session; **AND**
    - No more than 2 facet joint levels (either unilateral or bilateral) are injected per spine region per session; **AND**
    - No more than 4 diagnostic facet injections per cervical, thoracic, or lumbar spinal region in 12 consecutive months (unilateral injections performed at the same level on the right vs. left within 1 month of each other are considered one procedure toward the total number of facet procedures allowed per 12 months); **OR**
- ◆ The injection is a subsequent confirmatory diagnostic injection and **ALL** of the following are **TRUE**.<sup>5</sup>
- The first injection provided greater than or equal to 80% pain relief; **AND**
  - The injection is being performed at the same level as the initial diagnostic injection; **AND**
  - Frequency limitation indicated by **ALL** of the following:
    - No more than 1 spinal region (cervical, thoracic, or lumbosacral) is injected per session; **AND**
    - No more than 2 facet joint levels (either unilateral or bilateral) are injected per spine region per session; **AND**
    - No more than 4 diagnostic facet injections per cervical, thoracic, or lumbar spinal region in 12 consecutive months (unilateral injections performed at the same level on the right vs. left within 1 month of each other are considered one procedure toward the total number of facet procedures allowed per 12 months); **OR**
- ◆ The injection is a therapeutic facet injection, and **ALL** of the following are **TRUE**.<sup>5</sup>



- Medical necessity justification documented regarding why radiofrequency ablation (RFA) cannot be performed; **AND**
- The pain is predominantly axial neck or back pain; **AND**
- **ANY** of the following is **TRUE**:
  - The patient's pain level is greater than or equal to 4 out of 10 on a scale of 0 to 10; **OR**
  - The pain is causing a functional disability; **AND**
- **ANY** of the following is **TRUE** regarding prior facet injection(s):
  - Two diagnostic facet injections provided greater than or equal to 80% pain relief; **OR**
  - Prior therapeutic facet injection has provided greater than or equal to 50% pain relief for greater than or equal to 3 months; **AND**
- The patient is participating in ongoing rehabilitative approaches (e.g., physical therapy, chiropractic care, or physician-guided home exercise program); **AND**
- The patient has not had greater than 3 therapeutic injections at that level per year (unilateral injections performed at the same level on the right vs. left within 1 month of each other are considered one procedure toward the total number of facet procedures allowed per 12 months); **OR**
- ◆ Intra-articular facet joint injection and synovial cyst aspiration/rupture when **ALL** of the following are **TRUE**<sup>6,14</sup>:
  - Advanced diagnostic imaging confirms a facet joint synovial cyst; **AND**
  - Documentation shows clinical and physical symptoms related to synovial facet cyst; **AND**
  - Cyst aspiration or rupture may be repeated once per individual cyst and only if there is 50% or more consistent improvement in pain for at least 3 months; **OR**
- ◆ A diagnostic injection (pars injection) to confirm a stress fracture in the pars interarticularis or pars defect as the primary pain generator for low back pain if **ALL** of the following are **TRUE**:
  - Imaging studies confirm the presence of pars defect or pars interarticularis fracture; **AND**
  - **ANY** of the following is **TRUE**:

- The patient's pain level is greater than or equal to 4 out of 10 on a scale of 0 to 10; **OR**
- The pain is causing a functional disability; **AND**
- No more than two diagnostic injections.

### **Non-Indications**

→ A **facet injection** is not considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Facet joint injection performed without computed tomography [CT] or fluoroscopic guidance; **OR**
- ◆ Facet joint injection performed with ultrasound guidance; **OR**
- ◆ Diagnostic or therapeutic facet injection at the same level as a previously successful radiofrequency ablation (RFA); **OR**
- ◆ When other types of spine injections (e.g., ESI, sacroiliac joint injections, facet injections to other spinal regions, etc.) are performed on the same date of service unless medical necessity to perform multiple injections is documented in a chart (e.g., risk of holding anticoagulant multiple times, presence of facet cyst causing radicular symptoms for which ESI and facet injection can be allowed at the same time, etc.); **OR**
- ◆ Facet injections performed with biologics (e.g., platelet-rich plasma, stem cells, amniotic fluid, etc.); **OR**
- ◆ Facet joint prolotherapy injections; **OR**
- ◆ Facet injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2).

### **Level of Care Criteria**

Inpatient and outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                                  |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 64490                 | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), cervical or thoracic; single level                                                                                  |
| 64491                 | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), cervical or thoracic; second level (List separately in addition to code for primary procedure)                      |
| 64492                 | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), cervical or thoracic; third and any additional level(s) (List separately in addition to code for primary procedure) |
| 64493                 | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), lumbar or sacral; single level                                                                                      |
| 64494                 | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), lumbar or sacral; second level (List separately in addition to code for primary procedure)                          |
| 64495                 | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), lumbar or sacral; third and any additional level(s) (List separately in addition to code for primary procedure)     |

|       |                                                                                                                                                                                                                                                                           |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 64999 | Unlisted procedure, nervous system                                                                                                                                                                                                                                        |
| 0213T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; single level                                                                                  |
| 0214T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; second level (List separately in addition to code for primary procedure)                      |
| 0215T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; third and any additional level(s) (List separately in addition to code for primary procedure) |
| 0216T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; single level                                                                                      |
| 0217T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; second level (List separately in addition to code for primary procedure)                          |
| 0218T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; third and any additional level(s) (List separately in addition to code for primary procedure)     |

## Medical Evidence

Appeadu et al. (2022) performed a systematic review and meta-analysis on the effectiveness of intraarticular cervical facet steroid injections as a treatment for cervicogenic headache. From an analysis of 3 studies with a total of 64 patients, the authors concluded intraarticular cervical facet injections demonstrated improvement in the mean pain score from baseline to post-intervention. The overall effect size, defined as the pooled mean difference in the visual analog scale (VAS) for pain scores, was 3.299 (95% confidence interval: 2.045 to 4.552, P less than 0.001).<sup>12</sup>

Viva et al. (2024) conducted a systematic review to assess the efficacy, accuracy, and feasibility of ultrasound (US)-guided cervical facet injections for chronic neck pain. From an analysis of 9 studies with a total of 958 patients, the authors concluded that US-guided cervical facet injection for the treatment of cervical facet joint syndrome (CFJS) shows a high degree of accuracy (92% to 98%) and efficiency (i.e. the procedure relieves pain with a decrease in the procedure time and fewer needle passes compared to the X-ray-guided technique, which also involves radiation exposure). However, the authors note the procedure strictly depends on the operator's expertise.<sup>13</sup>

Ashmore et al. (2022) performed a systematic review and meta-analysis on the use of fluoroscopy to confirm needle placement when performing lumbar medial branch blocks (MBB) and facet joint injections (FJI). The authors note a high risk of incorrect needle placement using ultrasound-guided MMB and FJI when fluoroscopy or CT is used to confirm.<sup>7</sup>

Bodor et al. (2022) studied 36 patients (60 cervical facet joints) with facet pain. Ultrasound was used to guide the injections: C2-3 (22%), C3-4 (40%), C4-5 (33%) and C5-6 (5%). The accuracy rate was high (92% to 98%), and patient outcomes were good.<sup>8</sup>

Kershen et al. (2018) performed a comparative study on intraarticular injections' short- and long-term efficacy for lumbar pain. A total of 77 patients

were examined, including 100 procedures with 205 total facet joints injected. Pain improvement scores were high immediately following injection and at the 1-week follow-up.<sup>9</sup>

Manchikanti et al. (2015) performed a systematic review to analyze the clinical efficacy of therapeutic facet joint interventions for individuals with chronic spinal pain. A literature review from 1966 through March 2015 yielded 21 randomized control trials (RCTs) that met inclusion criteria; a total of 5 observational studies were evaluated. Long-term efficacy is supported by Level II evidence of radiofrequency ablation (RFA) neurotomy and facet joint nerve blocks for the lumbar, cervical, and lumbar spine. Intraarticular injections had an evidence Level III for lumbar injection and an evidence Level IV for cervical and thoracic injections. The primary outcome measure was short-term (6 months or less) and long-term (6 months or more) pain relief. Secondary outcome measures included functional status improvement, psychological status, ability to return to work, and reduced opioid usage.<sup>10</sup>

In 2020, the American Society of Interventional Pain Physicians (ASIPP) published a guideline on *Facet Joint Interventions in the Management of Chronic Spinal Pain*. The level of evidence is weak for the use of lumbar, cervical, and thoracic intraarticular facet joint injections.<sup>2</sup>

The American Society of Regional Anesthesia and Pain Medicine (ASRM) published a guideline on interventions for lumbar facet joint pain. Prior to RFA, MBB is recommended. Intraarticular injections are recommended for diagnostic and therapeutic purposes in certain patients. Therapeutic MBB and intraarticular injections are not recommended in most clinical scenarios (e.g., prolonged relief from prognostic blocks, contraindications to RFA).<sup>1</sup>

Guidelines are also available on interventions for cervical spine (facet) joint pain. The ASRM does not recommend the use of therapeutic intraarticular injections. A high technical failure rate is noted for intraarticular injections. In addition, MBB may be more clinically useful for RFA outcomes versus intraarticular injections.<sup>3</sup>

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# Clinical Guideline Revision History/Information

| Original Date: April 21, 2021 |            |                                                                                                                                                                                                                                                                                                                  |
|-------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                |            |                                                                                                                                                                                                                                                                                                                  |
| Version 2                     | 12/1/2023  |                                                                                                                                                                                                                                                                                                                  |
| Version 3                     | 9/20/2024  | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                               |
| Version 4                     | 12/19/2024 | <ul style="list-style-type: none"><li>• Annual review</li><li>• Aligned to current policy guidelines.</li><li>• Medical evidence updated.</li><li>• References updated.</li><li>• CPT codes and descriptions updated; temporary codes verified.</li><li>• Indications and non-indications were updated</li></ul> |



## **Cohere Medical Policy – Facet Joint Allograft Implants**

*Clinical Guidelines for Medical Necessity Review*

**Version: 3**

**Cohere Health UMC Approval Date: July 24, 2025**

Last Annual Review: July 24, 2025

Revision: Not Applicable

Next Annual Review: July 24, 2026

# Important Notices

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## Guideline Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Facet Joint Allograft Implants

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)

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# Medical Necessity Criteria

## ***Service: Facet Joint Allograft Implants***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the

patient's primary symptoms can be adequately assessed with a single study or procedure.

### **Description**

Intrafacet allograft arthroplasty has been proposed as an alternative technique to surgical fusion to treat facet joint pain (also referred to as lumbar spondylosis or zygapophyseal joint pain). The minimally invasive procedure involves the placement of an allograft dowel made from bone (from the femur or tibia). The allograft, which is processed by licensed tissue banks and must comply with United States Food and Drug Administration (FDA) requirements for tissue processing, is not subject to FDA 510K clearance and can be marketed.<sup>1-2</sup>

### **Medical Necessity Criteria**

#### **Indications**

**Facet joint allograft implants** are considered appropriate if **ANY** of the following is **TRUE**:

- This procedure is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

#### **Non-Indications**

**Facet joint allograft implants** are not considered appropriate if **ANY** of the following are **TRUE**:

- This is not applicable, as there are no indications.

### **Level of Care Criteria**

Outpatient

### **Procedure Codes (CPT/HCPCS)**

| CPT/HCPCS Code | Code Description                                                                                                                                                         |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0219T          | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; cervical |

|       |                                                                                                                                                                                                                                                               |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0220T | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; thoracic                                                                                      |
| 0221T | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; lumbar                                                                                        |
| 0222T | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; each additional vertebral segment (List separately in addition to code for primary procedure) |
| 22899 | Unlisted procedure, spine                                                                                                                                                                                                                                     |

# Medical Evidence

In recent years, no articles have been published on long-term efficacy results or randomized, controlled, double-blinded trials of statistical rigor about facet arthrodesis using bone dowel implants, which have been around for decades. Other alternatives have emerged, i.e., facet fusion devices such as the FFX device to prevent facet motion, an alternative for the surgical treatment of patients with facet syndrome or lumbar spinal stenosis, which received regulatory clearance from the FDA in 2024.<sup>3</sup>

In a retrospective clinical study, Pirris et al. (2014) studied the outcomes of 99 patients who underwent facet joint dowel placement. Some patients received the dowels after open exploration of the facet joints, while others received them percutaneously through a tubular retractor. They found that almost 90% of the patients in this study did not achieve a solid fusion. They suggest that in their experience, the implantation of facet joint bone dowels results in an inadequate fusion rate.<sup>1</sup>

The American Society of Interventional Pain Physicians (ASIPP) published guidelines for facet joint interventions to manage chronic spinal pain. They do not mention facet joint allograft implants.<sup>4</sup>

The following national, professional organizations have published guidelines; however, they do not address facet joint allograft arthroplasty: 1) American College of Occupational and Environmental Medicine (ACOEM) – Invasive treatments for low back disorders,<sup>5</sup> 2) American Society of Pain and Neuroscience (ASPN) – Interventional treatments for low back pain,<sup>6</sup> 3) American Society of Regional Anesthesia (ASRA) – Interventions for cervical spine (facet) joint pain,<sup>7</sup> 4) American Society of Regional Anesthesia (ASRA) – Interventions for lumbar facet joint pain,<sup>8</sup> and North American Spine Society (NASS) – Diagnosis and treatment of low back pain.<sup>9</sup>



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<https://www.spine.org/Portals/0/assets/downloads/ResearchClinicalCare/Guidelines/LowBackPain.pdf>

# Policy Revision History/Information

| Original Date: September 29, 2023 |            |                                                                                                                                                                                                             |
|-----------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                    |            |                                                                                                                                                                                                             |
| Version 2                         | 04/26/2024 | Annual review.                                                                                                                                                                                              |
| Version 3                         | 07/24/2025 | Annual review.<br><br>New Description section.<br><br>No changes to the Medical Necessity Criteria section.<br><br>No changes to the Procedure Codes section.<br><br>Literature review: added 3 references. |



## **Cohere Medical Policy – Facet Joint Radiofrequency Ablation (RFA)**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 4  
**Effective Date:** December 19, 2024

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Facet Joint Radiofrequency Ablation (RFA)

**Date of last literature review:** 11/14/2024

**Document last updated:** 12/19/2024

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## **Service: Facet Joint Radiofrequency Ablation (RFA)**

### **Recommended Clinical Approach**

Facet joint radiofrequency ablation (RFA), also known as radiofrequency neurotomy (RFN), is a minimally invasive technique to denervate facet joints with thermal energy and interrupt pain perception in patients with chronic facet joint pain in the cervical, thoracic, or lumbar regions. Facet joint pain is diagnosed by clinical signs, radiological tests, and diagnostic facet injections or medial branch blocks (MBBs).<sup>1-24</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ **Facet joint radiofrequency ablation (RFA)** is considered appropriate if **ALL** of the following are **TRUE**<sup>1,3-7</sup>:

- ◆ The pain is predominantly axial neck or back pain; **AND**
- ◆ **ANY** of the following are **TRUE**:
  - The patient's pain level is greater than or equal to 4 out of 10 on a scale of 0 to 10; **OR**
  - The pain is causing a functional disability; **AND**
- ◆ Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>8</sup>:
  - Anti-inflammatory medications, analgesics, or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **AND**
  - Physical therapy; **AND**
- ◆ The patient does not have untreated radiculopathy (except caused by facet joint synovial cyst) as the primary pain generator; **AND**
- ◆ Physical Exam findings are suggestive of facet-mediated pain (e.g., pain exacerbated by extension, rotation, facet loading, etc.); **AND**

- ◆ A radiology study has ruled out non-facet pathology that can explain the source of the patient's pain; **AND**
- ◆ Frequency limitation indicated by **ALL** of the following:
  - No more than 1 spinal region (cervical, thoracic, or lumbosacral) is injected per session; **AND**
  - No more than 2 facet joint levels (either unilateral or bilateral) are ablated per spine region per session; **AND**
  - No more than 2 facet RFA procedures per spinal region in 12 consecutive months. (Unilateral RFA performed at the same level on the right vs. left within 1 month of each other are considered one procedure toward the total number of RFA procedures allowed per 12 months); **AND**
- ◆ The request is for **ANY** of the following:
  - Initial RFA request with **ALL** of the following:
    - Two medically necessary diagnostic facet injections/medial branch blocks (MBBs) within the last 1 year; **AND**
    - Each diagnostic injection/MBB provides greater than or equal to 80% sustained relief of primary (index) pain (with the duration of relief being consistent with the agent used)<sup>1-2</sup>; **OR**
  - A repeat RFA request at the same anatomic site (same level and side) with **ALL** of the following:
    - The previous RFA provided greater than or equal to 50% improvement in pain; **AND**
    - The duration of pain relief is greater than or equal to 6 months<sup>2</sup>; **AND**
    - The patient is participating in ongoing rehabilitative approaches (e.g., physical therapy, chiropractic care, or physician-guided home exercise program).

## Non-Indications

- **Facet joint radiofrequency ablation (RFA)** is not considered appropriate if **ANY** of the following is **TRUE**<sup>2</sup>:
- ◆ Facet RFA performed without computed tomography [CT] or fluoroscopic guidance; **OR**
  - ◆ Non-thermal modalities for facet joint denervation including chemical, low-grade thermal, pulsed radiofrequency energy (less



than 80°C), laser neurolysis, open surgical neurolysis, cryoablation, endoscopic neurolysis, and rhizotomy; **OR**

- ◆ The patient has had prior spinal fusion surgery at the levels to be treated; **OR**
- ◆ RFA/lesioning for non-spine related pain (including but not limited to coccydynia, coccygeal pain, sympathetic plexus, complex regional pain syndrome [CRPS], dorsal root ganglia, peripheral nerve ending, nerve plexus, pudendal neuralgia, etc.); **OR**
- ◆ RFA at atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2).

### **Level of Care Criteria**

Inpatient or outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                       |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 64633                 | Destruction by neurolytic agent, paravertebral facet joint nerve(s), with imaging guidance (fluoroscopy or CT); cervical or thoracic, single facet joint                                                                      |
| 64634                 | Destruction by neurolytic agent, paravertebral facet joint nerve(s), with imaging guidance (fluoroscopy or CT); cervical or thoracic, each additional facet joint (List separately in addition to code for primary procedure) |
| 64635                 | Destruction by neurolytic agent, paravertebral facet joint nerve(s), with imaging guidance (fluoroscopy or CT); lumbar or sacral, single facet joint                                                                          |
| 64636                 | Destruction by neurolytic agent, paravertebral facet joint nerve(s), with imaging guidance (fluoroscopy or CT); lumbar or sacral, each additional facet joint (List separately in addition to code for primary procedure)     |
| 22899                 | Unlisted procedure, spine                                                                                                                                                                                                     |
| 64999                 | Unlisted procedure, nervous system                                                                                                                                                                                            |

## Medical Evidence

McCormick et al. (2023) conducted a randomized prospective clinical trial to compare the effectiveness of cooled lumbar medial branch radiofrequency ablation (LRFA) and intraarticular facet joint steroid injections (FJI). A total of 32 patients with dual medial branch block (MBB)-confirmed facet joint pain were randomized to receive cooled LRFA or FJI, and outcomes were assessed at 1, 3, 6, and 12 months. The study showed cooled LRFA demonstrated superior success rates in reducing pain compared to FJI.<sup>9</sup>

Shih et al. (2020) conducted a meta-analysis to compare the efficacy of thermal, pulsed, and cooled radiofrequency ablation (RFA) techniques for treating adult patients with lumbar facet joint (LFJ) or sacroiliac joint (SIJ) pain. The study showed all 3 RFA techniques significantly improved LFJ and SIJ pain for up to 12 months compared to baseline pain levels. In patients with LFJ pain, cooled RFA was the most effective, followed by thermal RFA and then pulsed RFA at 6 months. None of the techniques resulted in any serious adverse effects.<sup>10</sup>

Manchikanti et al. (2015) performed a systematic review to analyze the clinical efficacy of therapeutic facet joint interventions for individuals with chronic spinal pain. A literature review of 21 randomized control trials (RCTs) showed long-term efficacy is supported by evidence Level II for RFA neurotomy and facet joint nerve blocks for the lumbar, cervical, and lumbar spine. Intraarticular injections showed Level III (lumbar) and Level IV (cervical and thoracic) evidence. The primary outcome measure was short-term (6 months or less) and long-term (greater than 6 months) pain relief. Secondary outcome measures included improvement in functional status, psychological status, ability to return to work, and reduced opioid usage.<sup>11</sup>

Lee et al. (2017) performed a meta-analysis of RCTs to study the efficacy of RFA denervation in 454 patients with low back pain derived from facet joints and refractory to conservative treatment. Patients treated with RFA exhibited significantly greater improvements in back pain scores when compared with control sham procedures or epidural nerve blocks at the 1-year follow-up.<sup>12</sup>

### National and Professional Organizations

The American Society of Interventional Pain Physicians (ASIPP) published guidelines for *Facet Joint Interventions in the Management of Chronic Spinal Pain*, including the following evidence<sup>5</sup>:

- Lumbar RFA is supported by 11 RCTs; 4 studies demonstrated long-term improvement.

- Cervical RFA is supported by 1 RCT; 2 observational studies demonstrate long-term improvement.
- Thoracic RFA is supported; however, evidence is still emerging, including 1 RCT and 3 observational studies.

The American Society of Regional Anesthesia and Pain Medicine (ASRA) published guidelines for *Interventions for Lumbar Facet Joint Pain*. The guidelines were developed in collaboration with a multispecialty, international working group and support lumbar medial branch RFA as MBB is more predictive than intraarticular injections.<sup>3</sup>

The North American Spine Society (NASS) published guidance on *Facet Joint Interventions*. Therapeutic medial branch radiofrequency neurotomy (RFN) is recommended for the treatment of facet joint pain. Long-term outcomes demonstrate positive treatment effects, especially in patients with a dual confirmatory diagnostic MBB. Repeat procedures also show a high level of success when the response to the previous procedure was effective for at least 3 months. Guidelines are also available for the *Diagnosis and Treatment of Low Back Pain*. Thermal RFA is supported. The Guideline notes the need for RCTs that focus on various interventions, including injections and neurotomy.<sup>1,13</sup>

The National Institute for Health and Care Excellence (NICE) has published guidance on *Low Back Pain and Sciatica*. Referral for radiofrequency denervation is recommended for individuals with chronic low back pain when non-surgical treatment is unsuccessful, the source of pain relates to the medial branch nerve, and pain is moderate to severe (5 or more on a visual analog scale or equivalent). Radiofrequency denervation is recommended in individuals with chronic low back pain following positive outcomes from a diagnostic MBB. Imaging is not recommended for individuals with low back pain who present with specific facet joint pain.<sup>14</sup>

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# Clinical Guideline Revision History/Information

|                                 |            |                                                                                                                                                                                                                                            |
|---------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Original Date: October 13, 2023 |            |                                                                                                                                                                                                                                            |
| Review History                  |            |                                                                                                                                                                                                                                            |
| Version 2                       | 12/15/2023 |                                                                                                                                                                                                                                            |
| Version 3                       | 9/20/2024  | Updated language regarding conservative treatment.                                                                                                                                                                                         |
| Version 4                       | 12/19/2024 | <ul style="list-style-type: none"><li>• Annual review</li><li>• Updated medical evidence</li><li>• Updated references</li><li>• Aligned to current policy format</li><li>• Indications updated</li><li>• Non-indications undated</li></ul> |



## **Cohere Medical Policy – Genicular Nerve Procedures**

*Clinical Policy for Medical Necessity Review*

**Version: 3**

**Cohere Health UMC Approval Date: July 31, 2025**

Last Annual Review: July 31, 2025

Revision: Not Applicable

Next Annual Review: July 31, 2026



# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Genicular Nerve Procedures

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Genicular Nerve Procedures***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Genicular nerves provide sensory innervation to the knee and include the (1) superolateral genicular nerve (SLGN), (2) superomedial genicular nerve (SMGN), (3) inferomedial genicular nerve (IMGN), and (4) inferolateral genicular nerve (ILGN). Physicians can safely target all these nerves for a genicular nerve block or ablation, except for the ILGN, which is too close to the peroneal nerve. A diagnostic genicular nerve block helps determine the appropriateness of an ablation procedure and may be appropriate to alleviate pain originating from the genicular nerves in the knee joint. Genicular nerve blocks may be suitable for knee pain that has not responded to conservative treatments.<sup>1-8</sup> Genicular nerve ablation involves using Radiofrequency Ablation (RFA) to treat pain in the knee in patients with chronic pain after knee arthroplasty or chronic, symptomatic knee osteoarthritis (Kellgren–Lawrence Grade 3 or 4) that hasn't responded to other treatment options. The Kellgren–Lawrence scale for the radiographic classification of osteoarthritis is as follows<sup>9</sup>:

- **Grade 0:** Normal;
- **Grade 1:** Questionable (doubtful narrowing of joint space and possible osteophytic lipping);
- **Grade 2:** Mild (definite osteophytes and possible narrowing of joint space);
- **Grade 3:** Moderate (moderate multiple osteophytes, definite narrowing of joint space, some sclerosis, and possible deformity of bone ends);
- **Grade 4:** Severe (large osteophytes, marked narrowing of joint space, severe sclerosis, and definite deformity of bone ends).

## **Medical Necessity Criteria**

### **Indications**

**Genicular nerve procedures** are considered appropriate if **ANY** of the following is **TRUE**<sup>10,11</sup>:

- The procedure is a genicular nerve block requested for postoperative pain relief associated with a surgical procedure; **OR**
- **ALL** of the following:
  - Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**

- Physical therapy or a physician-directed home exercise program; **AND**
- **ANY** of the following:
  - Intraarticular corticosteroid injection if medically appropriate; **OR**
  - Intraarticular corticosteroid injection is contraindicated; **AND**
- The patient has persistent chronic pain with pain intensity of greater than or equal to 6/10; **AND**
- The patient's pain has been present for more than 3 months; **AND**
- The patient has **ANY** of the following<sup>2,12</sup>:
  - Chronic, symptomatic knee osteoarthritis (Kellgren-Lawrence grade 3 or 4) with documentation from an orthopedic surgeon stating that the patient is not a candidate for surgery; **OR**
  - Previous knee arthroplasty surgery with documentation from an orthopedic surgeon stating that the patient is not a candidate for additional surgical procedures; **AND**
- **ANY** of the following:
  - The procedure is a diagnostic genicular nerve block with a frequency limitation of no more than 2 genicular nerve blocks per knee; **OR**
  - The procedure is a genicular radiofrequency ablation (RFA), and **ALL** of the following:
    - **ANY** of the following:
      - At least 50% improvement in symptoms for the duration of local anesthetic used for the diagnostic block (same knee) under fluoroscopy or ultrasound guidance; **OR**
      - The patient has an improvement of at least 50% for at least 6 months from previous RFA (same knee); **AND**
    - Frequency limitation indicated of no more than 2 genicular RFA per knee in a rolling 12-month period.

## Non-Indications

**Genicular nerve procedures** are not considered appropriate if **ANY** of the following is **TRUE**<sup>10,13,14</sup>:

- Active local or systemic infection; **OR**
- **ANY** of the following implanted devices (unless the provider acknowledges that the device is present and provides a statement explaining that the appropriate precautions will be taken, including following manufacturer guidelines):

- Defibrillator; **OR**
- Pacemaker; **OR**
- Peripheral nerve stimulator; **OR**
- Knee joint instability; **OR**
- Recent knee trauma or injury; **OR**
- Osteoarthritis Kellgren–Lawrence grade 0–2; **OR**
- Pulsed radiofrequency ablation, cooled radiofrequency, cryoablation, laser denervation; **OR**
- Radiofrequency for acute perioperative pain relief; **OR**
- The patient is under the age of 18.

### **Level of Care Criteria**

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------------------------------|
| 64454                 | Injection(s), anesthetic agent(s) and/or steroid; genicular nerve branches, including imaging guidance, when performed |
| 64624                 | Destruction by neurolytic agent, genicular nerve branches including imaging guidance, when performed                   |

## Medical Evidence

Shanahan et al. (2023) performed a randomized control trial (RCT) that aimed to assess the effectiveness of ultrasound-guided genicular nerve block (GNB) in managing knee pain among patients with knee osteoarthritis. It conducted a 12-week parallel-group, placebo-controlled randomized trial involving 59 patients. Patients in the active group received GNB injections, while those in the placebo group received saline injections. Pain and disability were measured using various scales. The results showed that patients in the active group reported improved pain scores at 2, 4, 8, and 12 weeks compared to the placebo group. However, the effect diminished over time. The study concluded that GNB offers short-term pain relief for knee OA.<sup>4</sup>

Güler et al. (2023) conducted a prospective RCT to compare the effectiveness of ultrasound-guided GNB and physical therapy (PT) in treating chronic knee OA. A total of 102 patients aged 45–70 received either GNB (n=51) or PT (n=51) along with a standard home exercise program. The Visual Analogue Scale was used to measure pain level. The Western Ontario and McMaster Universities Osteoarthritis Index measured the patient's functional ability; a 6-minute walking test measured the patient's physical capacity. Evaluations were conducted pre-treatment and postoperatively at 2 and 12 weeks post-treatment. Both groups had similar demographics. Results showed that GNB significantly reduced pain levels compared to PT at 2 and 12 weeks. The study concludes that ultrasound-guided GNB is more beneficial in reducing pain and improving functional and physical capacity, particularly with longer-lasting effects observed at 12 weeks.<sup>5</sup>

Fonkoue et al. (2021) performed a double-blind RCT to compare the effectiveness of GNB using traditional anatomical targets (CT) versus revised targets (RT) in patients with chronic knee OA pain. A total of 55 patients were included (28 in the CT group and 27 in the RT group). Patients received GNB with a fluid mixture. Post-intervention, pain levels, and knee function were assessed at various intervals. Results showed that the RT group experienced a greater reduction in pain scores at 1 hour post-intervention and a higher proportion of patients achieving more than 50% pain reduction, especially immediately after the procedure. Both groups demonstrated significant pain reduction and improved joint function up to 12 weeks post-intervention. The revised technique led to more immediate pain relief and a higher proportion

of successful responders shortly after the intervention. The larger volume injected during the GNB procedure might compensate for the lack of precision in the classical anatomical targets, thereby minimizing differences in outcomes between the two techniques.<sup>6</sup>



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# Policy Revision History/Information

| Original Date: April 30, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Version 2                     | 09/20/2024 | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Version 3                     | 07/31/2025 | <p>Annual review.</p> <p>Added a standalone indication for postoperative pain relief.</p> <p>Updated conservative care indications in alignment with standard language.</p> <p>Added indication, "The patient's pain has been present for more than 3 months."</p> <p>Added indication, "with documentation from an orthopedic surgeon stating that the patient is not a candidate for surgery" to the "chronic, symptomatic knee osteoarthritis" indication.</p> <p>Clarified differences between "diagnostic genicular nerve block" and "genicular nerve radiofrequency ablation" sections.</p> <p>Added indication, "Frequency limitation indicated no more than 2 genicular RFA per knee in a rolling 12 months" to the "genicular nerve radiofrequency ablation" section.</p> <p>Added non-indication, "The patient is under the age of 18."</p> <p>Added non-indications: "Pulsed radiofrequency ablation, cooled radiofrequency, cryoablation, laser</p> |

|  |  |                                                                                                                                                                                                      |
|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>denervation; "Radiofrequency for acute perioperative pain relief."</p> <p>Removed non-indications: "Coagulopathy or bleeding diathesis;" "Knee trauma or injury that is recent;" "pregnancy."</p> |
|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## **Cohere Medical Policy – Great Toe Surgical Treatments**

*Clinical Policy for Medical Necessity Review*

**Version: 3**

**Cohere Health UMC Approval Date: July 31, 2025**

Last Annual Review: July 31, 2025

Revision: Not Applicable

Next Annual Review: July 31, 2026

# Important Notices

## Notices & Disclaimers:

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Great Toe Surgical Treatments

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Great Toe Surgical Treatments***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.



## **Description**

Great toe surgical procedures are common and typically involve correcting a bunion deformity or first metatarsophalangeal (MTP) joint osteoarthritis. Great toe surgical procedures encompass several surgical treatments, including soft tissue procedures, osteotomies, cheilectomy, fusion, or joint replacement.<sup>1-2</sup> In bunionectomy and cheilectomy procedures, excess bony growth is surgically removed; in some cases, the bunionectomy may be combined with osteotomy to realign adjoining bones. In arthrodesis and arthroplasty procedures, the great toe joints are fused or replaced to relieve pain and restore function.

## **Medical Necessity Criteria**

### **Indications**

**Great toe surgical treatments – hallux valgus** are considered appropriate if **ALL** of the following are **TRUE**:

- Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>8-14</sup>:
  - Trial of **ANY** of the following:
    - Taping or splinting; **OR**
    - Toe spacer; **OR**
    - Toe sleeve; **OR**
    - Padding; **AND**
  - Shoe modifications; **AND**
  - Oral steroids, topical or oral anti-inflammatory medications, or oral analgesics; **AND**
- **ANY** of the following:
  - Documentation of near or full skeletal maturity as indicated by first metatarsal physal closure or near closure<sup>12</sup>; **OR**
  - Documentation of connective tissue or neuromuscular disorders that may affect etiology or severity of the condition (e.g., Cerebral Palsy, Ehlers-Danlos Syndrome, Marfan Syndrome, Osteogenesis Imperfecta, Fibrodysplasia Ossificans Progressiva)<sup>13-15</sup>; **AND**
- **ANY** of the following:
  - The procedure is a simple bunionectomy, and **ALL** of the following<sup>16</sup>:
    - The patient has **ANY** of the following positive findings<sup>17</sup>:
      - Pain, swelling, or limited range of motion (ROM) at the first metatarsophalangeal (MTP) joint; **OR**

- Difficulty walking due to pain in the MTP joints; **OR**
- Lateral deviation of the great toe; **OR**
- Non-healing ulceration caused by the bunion<sup>18</sup>; **OR**
- Malunion or non-union of previous surgery<sup>19</sup>; **AND**
- Radiographic confirmation with radiologic report (must be weight-bearing radiographs of the foot) of **ALL** of the following<sup>13,17</sup>:
  - **ANY** of the following:
    - Hallux valgus (HV) angle greater than 15°; **OR**
    - Intermetatarsal (IM) angle greater than 9°; **AND**
  - Minimal degenerative changes to the MTP joint; **OR**
- The procedure is a bunionectomy with osteotomy, and **ALL** of the following<sup>16</sup>:
  - **ANY** of the following:
    - Current nicotine user with no product use for 6 weeks; and **ANY** of the following<sup>20,21</sup>:
      - Negative urine (cotinine) lab test within 30 days<sup>22</sup>; **OR**
      - Surgery is urgently required due to documented reason; **OR**
    - No history of nicotine product use within the last 12 months; **OR**
    - No lifetime history of nicotine product use, **AND**
  - The patient has **ANY** of the following positive findings<sup>17</sup>:
    - Pain, swelling, or limited range of motion (ROM) at the first metatarsophalangeal (MTP) joint; **OR**
    - Difficulty walking due to pain in the MTP joints; **OR**
    - Lateral deviation of the great toe; **OR**
    - Non-healing ulceration caused by the bunion<sup>18</sup>; **OR**
    - Malunion or non-union of previous surgery<sup>19</sup>; **AND**
  - Radiographic confirmation with radiologic report (must be weight-bearing radiographs of the foot) of **ANY** of the following<sup>13,17</sup>:
    - HV angle greater than 15°; **OR**
    - IM angle greater than 9°; **OR**
- The procedure is a bunionectomy with medial cuneiform joint arthrodesis, and **ALL** of the following:
  - **ANY** of the following:
    - Current nicotine user with no product use for 6 weeks; and **ANY** of the following<sup>20,21</sup>:
      - Negative urine (cotinine) lab test within 30 days<sup>22</sup>; **OR**
      - Surgery is urgently required due to documented reason; **OR**
    - No history of nicotine product use within the last 12 months; **OR**

- No lifetime history of nicotine product use, **AND**
- **ANY** of the following<sup>1,13,17</sup>:
  - Recurrent bunions; **OR**
  - Unstable/hypermobility first metatarsal; **OR**
  - Subluxation of the hallux joint; **OR**
  - Tarsometatarsal joint arthritis; **OR**
  - Malunion or non-union of previous surgery<sup>19</sup>; **AND**
- Radiographic confirmation with radiologic report (must be weight-bearing radiographs of the foot) of **ANY** of the following<sup>1,17</sup>:
  - HV angle greater than 40°; **OR**
  - IM angle greater than 15°.

**Great toe surgical treatments – hallux rigidus** are considered appropriate if **ALL** of the following are **TRUE**:

- Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>8-14</sup>:
  - Trial of **ANY** of the following:
    - Taping or splinting; **OR**
    - Toe spacer; **OR**
    - Toe sleeve; **OR**
    - Padding; **AND**
  - Shoe modifications; **AND**
  - Oral steroids, topical or oral anti-inflammatory medications, or oral analgesics; **AND**
  - **ANY** of the following:
    - Corticosteroid injection if medically appropriate; **OR**
    - Corticosteroid injection is contraindicated; **AND**
- Documentation of near or full skeletal maturity as indicated by first metatarsal physal closure or near closure<sup>12</sup>; **AND**
- **ANY** of the following:
  - The procedure is a cheilectomy of the great toe MTP joint, and **ALL** of the following<sup>3,23</sup>:
    - The patient has **ANY** of the following positive findings<sup>24</sup>:
      - Pain on the top of the first MTP joint<sup>25</sup>; **OR**
      - Swelling and stiffness around the first toe MTP joint<sup>24</sup>; **OR**
      - Limited motion in the sagittal plane of the first MTP joint<sup>23,25</sup>; **AND**

- Radiographic findings with radiologic report of osteoarthritis of the first MTP joint (e.g., dorsal osteophyte, joint space narrowing, subchondral cysts)<sup>25</sup>; **OR**
- The procedure is an arthrodesis of the great toe MTP joint, and **ALL** of the following<sup>23</sup>:
  - **ANY** of the following:
    - Current nicotine user with no product use for 6 weeks; and **ANY** of the following<sup>20,21</sup>:
      - Negative urine (cotinine) lab test within 30 days<sup>22</sup>; **OR**
      - Surgery is urgently required due to documented reason; **OR**
    - No history of nicotine product use within the last 12 months; **OR**
    - No lifetime history of nicotine product use, **AND**
  - The patient has **ANY** of the following positive findings<sup>17</sup>:
    - Pain on the top of the first MTP joint; **OR**
    - Swelling and stiffness around the first toe MTP joint; **OR**
    - Limited motion in the sagittal plane of the first MTP joint; **AND**
  - Radiographic findings with radiologic report of advanced stages of osteoarthritis (e.g., dorsal osteophyte, joint space narrowing, subchondral cysts)<sup>24</sup>; **OR**
- The procedure is a great toe MTP joint arthroplasty, and **ALL** of the following<sup>23</sup>:
  - The patient has **ANY** of the following positive findings<sup>24</sup>:
    - Pain on the top of the first MTP joint<sup>25</sup>; **OR**
    - Swelling and stiffness around the first toe MTP joint<sup>3,24</sup>; **OR**
    - Limited motion in the sagittal plane of the first MTP joint<sup>23,25</sup>; **AND**
  - Radiographic findings with radiologic report of advanced stages of osteoarthritis (e.g., dorsal osteophyte, joint space narrowing, subchondral cysts).<sup>25</sup>

## Non-Indications

**Great toe surgical treatments** are not considered appropriate if **ANY** of the following is **TRUE**:

- Inadequate blood supply that would prevent healing<sup>26</sup>; **OR**
- Presence of an active, untreated infection at the surgical site (may be necessary for a diabetic ulcer correction).<sup>27</sup>

## **Level of Care Criteria**

Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                 |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 28240                 | Tenotomy, lengthening, or release, abductor hallucis muscle                                                                                             |
| 28289                 | Hallux rigidus correction with cheilectomy, debridement and capsular release of the first metatarsophalangeal joint; without implant                    |
| 28291                 | Hallux rigidus correction with cheilectomy, debridement and capsular release of the first metatarsophalangeal joint; with implant                       |
| 28292                 | Correction, hallux valgus (bunionectomy), with sesamoidectomy, when performed; with resection of proximal phalanx base, when performed, any method      |
| 28295                 | Correction, hallux valgus (bunionectomy), with sesamoidectomy, when performed; with proximal metatarsal osteotomy, any method                           |
| 28296                 | Correction, hallux valgus (bunionectomy), with sesamoidectomy, when performed; with distal metatarsal osteotomy, any method                             |
| 28297                 | Correction, hallux valgus (bunionectomy), with sesamoidectomy, when performed, with first metatarsal and medial cuneiform joint arthrodesis, any method |
| 28298                 | Correction, hallux valgus (bunionectomy), with sesamoidectomy, when performed; with proximal phalanx osteotomy, any method                              |
| 28299                 | Correction, hallux valgus (bunionectomy), with                                                                                                          |

|       |                                                                                                           |
|-------|-----------------------------------------------------------------------------------------------------------|
|       | sesamoidectomy, when performed; with double osteotomy, any method                                         |
| 28306 | Osteotomy, with or without lengthening, shortening or angular correction, metatarsal; first metatarsal    |
| 28310 | Osteotomy, shortening, angular or rotational correction; proximal phalanx, first toe (separate procedure) |
| 28750 | Arthrodesis, great toe; metatarsophalangeal joint                                                         |
| L8641 | Metatarsal joint implant                                                                                  |

## Medical Evidence

A 2024 Cochrane review of 25 studies with a total of 1597 participants evaluating surgical interventions for hallux valgus and bunions reported decreased pain and increased function after surgery compared to non-surgical treatments.<sup>8</sup> This meta-analysis also found no benefit in pain reduction or functional improvement, along with a higher complication rate, after complex versus simple osteotomy. In a 2016 review, Fraiser and colleagues reported that, while nonoperative management does not correct hallux valgus deformities, it can relieve symptoms and should be considered first-line treatment.<sup>17</sup> Particular care is advised in recommending surgical treatment to patients with hypermobility, ligamentous laxity, or neuromuscular disorders, for whom post-surgery recurrence rates are reported to be particularly high.

In their 2024 clinical consensus statement on hallux rigidus, the ACFAS defined hallux rigidus as a chronic and progressive degenerative condition affecting the first metatarsophalangeal joint with no single cause, diagnosed via any one of several possible weight-bearing radiographic findings and graded using physical examination and radiographic findings.<sup>25</sup> They went on to recommend that therapeutic management, starting with conservative care, be initiated when patients experience pain or reductions in quality of life. Joint-sparing procedures, including cheilectomy, were recommended for low-grade hallux rigidus, while these procedures lack long-term durability in later-stage disease. Joint destructive procedures, including arthrodesis and arthroplasty, should be reserved for high-grade disease.<sup>25</sup>

While hallux valgus, hallux rigidus, and other conditions necessitating great toe surgical procedures are more prevalent in adults, they can present in pediatric patients, oftentimes comorbid with other conditions.<sup>13-15</sup> In juvenile populations, deformities are often characterized by reduced medial soft tissue hypertrophy, limited medial metatarsal head eminence, reduced valgus orientation of the hallux, hypermobility, relative plasticity of the immature bone, and the presence of open physis at the proximal first metatarsal.<sup>16</sup> Radiographic evaluation often suggests a more significant structural, as opposed to functional, component to the deformity. Authors have noted that the presence of an open physis should influence procedure

selection and timing of surgical interventions, recommending that surgical procedures be avoided until physis closure, or at least near closure (around age 13.7 in females and 15.6 in males). However, some cases of juvenile deformity, notably in pediatric patients with connective tissue or neuromuscular conditions, may necessitate earlier surgical intervention to prevent further deformity.<sup>15</sup>

In 2022, the American College of Foot and Ankle Surgeons (ACFAS) published a clinical consensus statement on the diagnosis, clinical course, and treatment of hallux valgus, agreeing to the following statements: that hallux valgus is a chronic, progressive, and degenerative disorder; that evaluation and management of juvenile hallux valgus deformities should differ from adult deformities; that effective assessment requires radiographic evaluation; that the outcome of hallux valgus surgical correction is independent of procedure selection (i.e., there is no single surgical procedure able to address all deformities); and that physical medicine and rehabilitation interventions should accompany surgical procedures.<sup>13</sup> Two prospective controlled studies comparing surgical correction, custom orthotics, and no treatment were reviewed. Surgical patients reported less pain at final follow-up, with no differences between control and orthotic groups. Other nonsurgical interventions, including dynamic splinting, padding, and exercise programs, similarly led to minimal improvements in radiographic or functional outcomes compared with surgical interventions. The consensus statement also noted that rates of deformity recurrence vary widely across studies, perhaps partly due to differences in recurrence definition. Specific deformity characteristics, including more significant preoperative deformity, persistent first metatarsal head lateral cartilage malalignment, a relatively long first metatarsal, and postoperative sesamoid malalignment, may be associated with higher recurrence rates.<sup>13</sup>

Pediatric patients may have more severe structural deformities compared with adult patients, who tend to have more functional ailments. Early intervention with lateral hemiepiphyodesis prior to skeletal maturity may be beneficial in pediatric patients.<sup>13</sup> Although a systematic literature review (Al-Mohrej et al., 2023) showed that hemiepiphyodesis improves clinical and radiological outcomes in patients with juvenile hallux valgus (JHV) deformities, more rigorous studies are needed to confirm efficacy, as studies in this review were mostly retrospective case series (with only one prospective



cohort study).<sup>28</sup> Another systematic literature review (AlZeedi et al., 2023) analyzed growth modulation for JHV, which included hemiepiphysiodesis procedures. This review had promising results but recognized that prospective and comparative studies are needed to validate the efficacy of this surgical approach as a standard treatment for pediatric populations with certain bunion deformities.<sup>29</sup>

In a 2017 clinical trial, Goldberg et al. compared a novel hydrogel implant with traditional arthrodesis in the treatment of moderate to severe hallux rigidus and reported that both procedures similarly decreased pain scores.<sup>30</sup> This was not modulated by any of the patient characteristics assessed, including severity of deformity, body mass index, or age. The authors noted that great toe implants are often associated with high rates of long-term failure due to loosening, malalignment, dislocation, subsidence, implant fragmentation, and bone loss, while arthrodesis is considered reliable.<sup>30</sup>

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# Policy Revision History/Information

| Original Date: April 19, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Version 2                     | 09/20/2024 | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Version 3                     | 07/31/2025 | <p>Annual review.</p> <p>Added CPT code 28297.</p> <p>Reorganized criteria (indications split into two sections: hallux valgus and hallux rigidus) and placed conservative care indications outside of individual procedure sections.</p> <p>Added indications for pediatric populations (near or full skeletal maturity; connective tissue/neuromuscular disorders) and removed non-indication for skeletal immaturity.</p> <p>Added nicotine cessation indications to osteotomy/arthrodesis sections.</p> <p>Literature review - Description and Medical Evidence sections updated (including references).</p> |



## **Cohere Medical Policy – Hammertoe, Claw Toe, or Mallet Toe Surgical Treatment (With or Without Fusion)**

*Clinical Policy for Medical Necessity Review*

**Version: 3**

**Cohere Health UMC Approval Date: July 24, 2025**

Last Annual Review: July 24, 2025

Revision: Not Applicable

Next Annual Review: July 24, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Hammertoe, Claw Toe, or Mallet Toe Surgical Treatment with or without Fusion

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Hammertoe, Claw Toe, or Mallet Toe Surgical Treatment (With or Without Fusion)***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Surgical treatment can be used to treat hammertoe, claw toe, mallet toe, or other congenital deformities that are not alleviated by conservative management. Options include tenotomy, tenotomy of toe tendon, incision to lengthen the toe tendon, interphalangeal fusion, partial or total phalangectomy osteotomy, or reconstruction.<sup>1-5</sup>

## **Medical Necessity Criteria**

### **Indications**

**Hammertoe, claw toe, or mallet toe surgical treatment (with or without fusion)** is considered appropriate if **ALL** of the following are **TRUE**<sup>3,4,6-8</sup>:

- The patient has **ANY** of the following clinical presentations or positive findings due to deformity:
  - Toe pain, swelling, or redness<sup>2,5</sup>; **OR**
  - Difficulty with balance or walking<sup>2,5</sup>; **OR**
  - The toe(s) appear clawlike, bend downward, or cross over<sup>2</sup>; **OR**
  - Callosities on toe<sup>5</sup>; **AND**
- The patient has **ANY** of the following conditions<sup>2</sup>:
  - Ankylosis of the proximal interphalangeal (PIP) joint or the distal interphalangeal (DIP) joint; **OR**
  - Deformity complications (e.g., adventitious bursa, ulceration, interdigital neuroma, or nail conditions); **OR**
  - Subluxation or dislocation, metatarsophalangeal (MTP) synovitis or MTP plantar plate, or lateral MTP capsular tear caused by the deformity; **OR**
  - Presence of co-existing or causative conditions (e.g., tendon contracture) that need repair; **AND**
- **ANY** of the following:
  - Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>1-4</sup>:
    - Shoe modification; **AND**
    - Splinting or padding; **AND**
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy or a physician-directed home exercise program; **AND**
  - **ANY** of the following:

- Corticosteroid injection if medically appropriate; **OR**
- Documentation that corticosteroid injection is contraindicated;  
**OR**
- The patient is symptomatic with severe deformity, and the medical record clearly states why further conservative treatment is not warranted<sup>8</sup>; **AND**
- Radiographic confirmation of hammertoe, claw toe, or mallet toe deformity.<sup>3</sup>

### **Non-Indications**

**Hammertoe, claw toe, or mallet toe surgical treatment (with or without fusion)** is not considered appropriate if **ANY** of the following is **TRUE**:

- The patient has poor circulation that could affect surgical healing<sup>10</sup>; **OR**
- The patient has an active, uncontrolled infection (does not apply to chronic infections that are managed)<sup>10</sup>; **OR**
- The patient has poorly controlled diabetes mellitus (DM).<sup>11</sup>

## **Level of Care Criteria**

Outpatient

## **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                            |
|-----------------------|--------------------------------------------------------------------------------------------------------------------|
| 28010                 | Tenotomy of toe tendon, accessed through the skin                                                                  |
| 28232                 | Incision to lengthen toe tendon, open procedure                                                                    |
| 28285                 | Correction, hammertoe (eg, interphalangeal fusion, partial or total phalangectomy)                                 |
| 28286                 | Correction, cock-up fifth toe, with plastic closure                                                                |
| 28308                 | Osteotomy, with or without lengthening, shortening, or angular correction, metatarsal; other than first metatarsal |
| 28312                 | Osteotomy, shortening, angular or rotational correction; other phalanges, any toe                                  |
| 28313                 | Reconstruction of soft tissue angular deformity of toe                                                             |
| 28899                 | Unlisted procedure of foot and toes.                                                                               |

## Medical Evidence

Morcos et al. (2024) created a treatment algorithm in addition to a systematic literature review for pediatric congenital curly toe. The stepwise treatment algorithm aims to guide both surgical and nonsurgical interventions to enhance clinical decision-making and improve patient outcomes. The authors suggest that asymptomatic children with congenital curly toe should undergo conservative treatment, such as stretching, taping, and shoe modification, whereas surgery should be considered for symptomatic patients with nail/skin changes and severe deformity.<sup>8</sup>

Bobrov et al. (2024) performed a prospective cohort study to evaluate surgical procedures in patients with severe instability of lesser metatarsal joints as well as to analyze the efficacy of the combined triple Weil osteotomy and plantar plate repair. The 113 patients (117 feet) were assigned to groups – the first group had Weil osteotomy with plantar plate repair, while the second group had combined Weil osteotomy and proximal interphalangeal joint K-wire arthrodesis. Group 1 demonstrated improved American Orthopedic Foot and Ankle Society (AOFAS) scores, reduced pain, and eliminated hyperkeratosis in 84.7% of study participants. Group 2 also demonstrated an improvement of 52.4%. The authors concluded that Weil osteotomy with plantar plate repair demonstrated greater results.<sup>12</sup>

de Jesús et al. (2024) conducted a systematic review on surgical procedures for claw toe deformity to improve foot mechanics. Kinematic evaluation methods were also explored. Sixteen articles were reviewed that related to arthrodesis of the proximal and distal interphalangeal joints; plantar plate tenodesis and release of collateral ligaments; tendon transfer; flexor digitorum brevis tenotomy and a proximal interphalangeal joint arthrolysis; and partial phalanx osteotomy to treat claw toe deformity. Only one article evaluated foot kinematics and plantar pressure after surgery. The authors note that toe deformities remain a problem for patients after surgical procedures; therefore, additional studies are needed that focus on postoperative effects, including kinematic evaluations and structural mechanics of the foot (e.g., stability, plantar pressure distribution, foot mechanics, gait, etc.).<sup>13</sup>

Baker et al. (2022) performed a systematic review and meta-analysis on treating lesser metatarsophalangeal (MTP) joint instability with plantar plate repair. While there are several surgical options, a direct dorsal approach to repair the plantar plate is preferred. Twelve studies that included 537 plantar plate tears were analyzed with respect to postoperative Visual Analogue Scale (VAS) pain and AOFAS scores. At 2-year follow-up, patients who underwent a direct dorsal approach reported improved pain levels. The authors noted that research with long-term comparison groups is needed to address successful patient outcomes further.<sup>14</sup>

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# Policy Revision History/Information

| Original Date: April 12, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Version 2                     | 09/20/2024 | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Version 3                     | 07/24/2025 | <p>Annual review.</p> <p>Restructured the order of the indications to better align with review approach.</p> <p>Consolidated indications for the “clinical presentations” section.</p> <p>Consolidated indications for the “conditions” section, specifically, “Deformity complications (e.g., adventitious bursa, ulceration, interdigital neuroma, or nail conditions).”</p> <p>Added indication, “Ankylosis of distal interphalangeal (DIP) joint.”</p> <p>Added indication, “Presence of co-existing or causative conditions (e.g., tendon contracture) that need repair.”</p> <p>Added references to support surgical interventions for pediatric and adolescent populations.</p> <p>Clarified non-indication for poor circulation, “Poor circulation that could affect surgical healing,” and added a reference to support.</p> <p>Added non-indication, “Poorly controlled diabetes mellitus (DM).”</p> <p>Literature review - Description and Medical Evidence sections updated.</p> |



## **Cohere Medical Policy - Hip Arthroplasty (Partial, Total, or Revision)**

*Clinical Policy for Medical Necessity Review*

**Version:** 5

**Policy Number:** CHP-038-5

**Cohere Health UMC Approval Date:** February 26, 2026

Last Annual Review: February 26, 2026

Revision: Not Applicable

Next Annual Review: February 26, 2027

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Hip Arthroplasty (Partial, Total, or Revision)

**Policy Number:** CHP-038-5

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Hip Arthroplasty (Partial, Total, or Revision)***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation or those that do not align with the provided clinical information—such as mismatched laterality, body part, or CPT code—may be denied due to a lack of medical necessity resulting from insufficient or inconsistent clinical information.
- When multiple diagnostic or therapeutic procedures are requested simultaneously or within the past 3 months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request.
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed.
  - How the results will impact patient management or treatment decisions.
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Hip arthroplasty is a surgical intervention in which a damaged or diseased hip joint is replaced with an artificial prosthesis. The hip replacement may be partial, a replacement of the femoral head and neck, or total, in which the acetabular surface is also replaced. During a total hip arthroplasty, a small incision is made in the thigh, and the damaged cartilage and bone of the hip joint are removed. The femur and acetabulum are then replaced with a prosthetic acetabular cup and a femoral prosthesis, which is applied either with or without cement. During a cemented hip replacement, bone cement is applied to fix the implant surface in place.<sup>1-4</sup>

## **Medical Necessity Criteria**

### **Indications**

**Hip arthroplasty** is considered appropriate if **ANY** of the following is **TRUE**:

- **Total hip arthroplasty** for **ANY** of the following:
  - The patient has hip arthritis and **ALL** of the following<sup>1-3</sup>:
    - **ANY** of the following:
      - Failure of 3 months of conservative management<sup>A</sup>, including **ALL** of the following:
        - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
        - **ANY** of the following:
          - **ALL** of the following:
            - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
            - PT/HEP trialed for a duration of 3 months or more; **OR**
          - Progression or worsening of symptoms due to PT/HEP treatment; **AND**
        - **ANY** of the following:
          - Corticosteroid injection if medically appropriate; **OR**
          - Documentation that corticosteroid injection is contraindicated; **OR**

- Documentation indicating that conservative, non-surgical management would be ineffective or counterproductive due to **ANY** of the following<sup>4</sup>:
  - Avascular necrosis of the hip; **OR**
  - Bone-on-bone articulation; **OR**
  - Failure of a previous osteotomy; **OR**
  - Malignancy of hip joint or adjacent soft tissues; **OR**
  - Moderate to severe pain or functional disability impacting activities of daily living (ADLs); **OR**
  - Severe deformity; **AND**
- Symptoms limiting activities of daily living (ADLs)<sup>3,4</sup>; **AND**
- Radiograph shows **ANY** of the following evidence of osteoarthritis of the hip<sup>5,6</sup>:
  - Collapsed femoral head with marginal osteophytes or subchondral sclerosis<sup>1,5,6</sup>; **OR**
  - Complete joint space loss<sup>1,5,6</sup>; **OR**
  - Joint space narrowing (greater than 50%)<sup>1,5,6</sup>; **OR**
  - Joint space narrowing (less than 50%) with marginal osteophytes or subchondral sclerosis<sup>1,5,6</sup>; **OR**
  - Acute fracture of the femoral head or neck that is untreatable with open reduction and internal fixation (ORIF)<sup>4</sup>; **OR**
  - Aseptic necrosis of the femoral head<sup>3,6</sup>; **OR**
  - Developmental dysplasia of the hip<sup>7</sup>; **OR**
  - Fracture dislocation of the hip untreatable with ORIF<sup>1,4</sup>; **OR**
  - Late-stage hip arthropathy in hemophilic patient<sup>8</sup>; **OR**
  - Malignancy involving bones or soft tissues of the pelvis or proximal femur<sup>1,3</sup>; **OR**
  - Non-union or malunion fracture of the femoral neck<sup>2,5</sup>; **OR**
  - Protrusio acetabuli<sup>9</sup>; **OR**
  - Revision of hip arthrodesis; **OR**
- **Partial hip arthroplasty (hip hemiarthroplasty)**, and **ANY** of the following is **TRUE**:
  - Acute fracture of the femoral head or neck that is untreatable with open reduction and internal fixation (ORIF)<sup>2</sup>; **OR**
  - Avascular necrosis of the femoral head<sup>1,2</sup>; **OR**
  - Degenerative arthritis of the femoral head in which the acetabulum does not need replacement<sup>1,2</sup>; **OR**
  - Displaced femoral head or neck fracture<sup>6,11</sup>; **OR**

- Non-union fracture of the femoral neck<sup>1,3</sup>; **OR**
- **Revision of prior arthroplasty** and **ALL** of the following are **TRUE**:
  - Significant hip pain<sup>1,5,12</sup>; **AND**
  - **ANY** of the following conditions:
    - Clinically significant leg-length inequality not amenable to conservative management<sup>1,5,12</sup>; **OR**
    - Failure of the prosthesis<sup>1,5,12</sup>; **OR**
    - Heterotopic ossification<sup>13,14</sup>; **OR**
    - Hip arthrodesis<sup>10</sup>; **OR**
    - Instability<sup>1,5,12</sup>; **OR**
    - Loosening of the prosthesis<sup>1,5,12</sup>; **OR**
    - Periprosthetic fracture<sup>1,5,12</sup>; **OR**
    - Recurrent or irreducible hip dislocation<sup>1,5,12,15</sup>; **OR**
    - Surgical management of total joint infection<sup>1,5,12</sup>; **OR**
    - Tissue or systemic reaction to implant.<sup>1,5,12</sup>

## Non-Indications

**Hip arthroplasty (partial, total, or revision)** is not considered appropriate if **ANY** of the following is **TRUE**:

- Absence or relative insufficiency of abductor musculature<sup>2,3</sup>; **OR**
- Active infection<sup>1,3,4</sup>; **OR**
- Neuropathic/neurotrophic arthritis<sup>1,3,4</sup>; **OR**
- Rapidly progressive neurological disease, unless a concomitant displaced femoral neck fracture is present<sup>1,3,4</sup>; **OR**
- Skeletal immaturity.<sup>17</sup>

## Definitions and Notes

### **<sup>A</sup>Failure of conservative management:**

- The patient has completed a full course of conservative management without meaningful improvement.
- Patient noncompliance, closure of therapy offices, and patient inconvenience do *not* constitute a failure of conservative treatment.



### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                               |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 26990                 | Incision and drainage, pelvis or hip joint area; deep abscess or hematoma                                                             |
| 26991                 | Incision and drainage, pelvis or hip joint area; infected bursa                                                                       |
| 27030                 | Arthrotomy, hip, with drainage (eg, infection)                                                                                        |
| 27125                 | Hemiarthroplasty, hip, partial (eg, femoral stem prosthesis, bipolar arthroplasty)                                                    |
| 27130                 | Arthroplasty, acetabular and proximal femoral prosthetic replacement (total hip arthroplasty), with or without autograft or allograft |
| 27132                 | Conversion of previous hip surgery to total hip arthroplasty, with or without autograft or allograft                                  |
| 27134                 | Revision of total hip arthroplasty; both components, with or without autograft or allograft                                           |
| 27137                 | Revision of total hip arthroplasty; acetabular component only, with or without autograft or allograft                                 |
| 27138                 | Revision of total hip arthroplasty; femoral component only, with or without allograft                                                 |
| 27236                 | Open treatment of femoral fracture, proximal end, neck, internal fixation or prosthetic replacement                                   |
| 27250                 | Closed treatment of hip dislocation, traumatic; without anesthesia                                                                    |
| 27299                 | Unlisted procedure, pelvis or hip joint                                                                                               |

## Medical Evidence

A 2021 meta-analysis of 40 studies representing 3,561,446 hips identified several patient-related risk factors associated with a higher risk of periprosthetic joint infection (PJI) after total hip arthroplasty (THA). High body mass index (BMI), femoral neck fracture, and opioid use conferred a higher risk of infection. Conversely, biological female sex, dislocation/dysplasia, and osteoarthritis were found to be protective factors. The authors concluded by underscoring the importance of reducing the risk of PJI and subsequent revisions or other invasive management through careful patient selection and optimization of modifiable risk factors.<sup>18</sup>

The American Academy of Orthopaedic Surgeons (AAOS) has published two guidelines pertaining to hip arthroplasty. *Management of Hip Fractures in Older Adults*, adopted in 2021, recommends arthroplasty over fixation for unstable femoral neck fractures.<sup>2</sup> The authors cite a decreased rate of reoperation among arthroplasty patients, though they note no statistical difference in mortality upon composite analysis of the reference studies.<sup>2</sup> *Management of Osteoarthritis of the Hip*, adopted in 2023, provides a robust set of clinical indications for surgical management of osteoarthritis, including hip arthroplasty.<sup>5</sup> This clinical practice guideline supports the use of nonsteroidal anti-inflammatory drugs (NSAIDs) to relieve pain and facilitate movement. In addition, the guideline endorses careful patient screening and appropriate optimization in order to improve surgical outcomes.<sup>5</sup> The AAOS has also issued position statements pertaining to hip arthroplasty. Information statement 1047, published in 2016, acknowledges the increased patient safety risks conferred by tobacco use—including pneumonia, impeded healing, surgical site infection, postoperative cardiopulmonary events, and death.<sup>19</sup> The AAOS states that patients who are active smokers may reduce these risks through cessation of smoking prior to surgery; they also note the special role orthopaedic surgeons play in counseling patients on the benefits of reduced or eliminated tobacco use before surgery. Importantly, unconfirmed cessation is not endorsed as a hard stop to surgery; rather, the surgeon's unique role as an advocate for preoperative smoking cessation is emphasized. Statements 1040 and 1184 discuss the impact of obesity on musculoskeletal conditions.<sup>20,21</sup> Statement 1184 endorses the importance of continued patient-surgeon conversation around the increased surgical risks

associated with obesity, including increased complications and rates of hardware failure following hip replacement. Patients with morbid obesity, defined as a BMI of 40 or above, are encouraged to participate in a weight-loss program, obtain weight-reduction resources through their physician, address nutritional deficiencies, and consider delaying surgical treatment if doing so would facilitate participation in weight-loss interventions that may improve surgical outcomes. Statement 1040 reinforces the risks associated with obesity and total joint arthroplasty and encourages adequate patient counseling prior to surgery.<sup>20,21</sup>

The Hip Fracture Evaluation with Alternatives of Total Hip Arthroplasty (HEALTH) trial (2019), an expert-based randomized controlled trial, enrolled 1495 patients across 10 countries to determine the most appropriate procedure for the surgical management of hip fractures in older adults with displaced femoral neck fractures. Patients aged 50 and older underwent either a THA or a hemiarthroplasty. The study team found similar mortality rates and no significant difference in the incidence of secondary procedures between the two groups. The authors concluded that there were limited advantages to THA with a higher risk profile in the patient population having undergone total hip arthroplasty.<sup>8</sup>

Social determinants of health remain an important area of ongoing orthopedic surgery research, with recent literature raising questions regarding the healthcare disparities that may be potentiated by care limitations based on obesity and smoking status/nicotine dependence.<sup>22-25</sup> Other ongoing research interrogates the impacts that biological sex, race, and socioeconomic status have on hip arthroplasty utilization and outcomes.<sup>34-35</sup>

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# Policy Revision History/Information

| Original Date: June 30, 2021 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History               |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Version 2                    | 10/06/2023 | Policy criteria reviewed and updated per medical literature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Version 3                    | 7/18/2024  | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Version 4                    | 2/20/2025  | <p>Annual policy review &amp; restructure:<br/>Improved and expanded references</p> <p>Updated CPT codes</p> <p>Updated recommended clinical approach to the current format.</p> <p>Medical evidence section updated to align with current literature and professional society guidance.</p> <p>Updated conservative care language to better reflect current standard language<br/>Reordered indications to place total hip arthroplasty first</p> <p>Conservative care updated to current standard internal language.</p> <p>Fracture indications for THA expanded.<br/>Modified steroid injection language for clarity.</p> <p>Conservative care language modified to reflect non-opioid pain control.</p> |
| Version 5                    | 02/26/2026 | <p>Annual Review.</p> <p>Added new description section.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|  |  |                                                                                                                                                                                                                                                                                              |
|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>Edited and arranged Indications for concision and clarity.</p> <p>Added indications for the following:<br/>Developmental dysplasia of the hip;<br/>Late-stage hip arthropathy in hemophilic patient; Protrusio acetabuli; Hip arthrodesis.</p> <p>Updated conservative care language.</p> |
|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|





# **Cohere Medical Policy – Hip Arthroplasty (Partial, Total, or Revision)**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 4  
**Revision Date:** February 20, 2025

This policy was reviewed by AAOS prior to publication.

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Service Name:** Hip Arthroplasty

**Date of last literature review:** 1/10/2025

**Document last updated:** 2/17/2025

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)

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# Medical Necessity Criteria

## ***Service: Hip Arthroplasty (Partial, Total, or Revision)***

### **Recommended Clinical Approach**

Hip arthroplasty is a surgical intervention to reduce hip pain and restore function by replacing a damaged or diseased hip joint with an artificial prosthesis. It is appropriate in patients with persistent, disabling symptoms despite non-surgical management. Partial hip replacement (hemiarthroplasty) may be indicated when only the femoral side of the hip joint is damaged. Total hip arthroplasty replaces the ball and socket parts of the hip joint in cases of severe damage. If a patient has had a prior hip arthroplasty and presents with pain that may be due to infection, recurrent hip dislocation, aseptic loosening, excessive wear, mechanical failure, or fracture, then revision surgery may be indicated. Hip arthroplasty is generally well-tolerated with appropriate patient selection and confers an improved quality of life.<sup>1-4</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ **Hip arthroplasty** is considered appropriate if **ANY** of the following is **TRUE**:

- ◆ The procedure is a **total hip arthroplasty** and **ANY** of the following is **TRUE**:
  - The patient has hip arthritis and **ALL** of the following<sup>1-4</sup>:
    - **ANY** of the following:
      - ◆ Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>2,4</sup>:
        - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
        - Ambulatory assist device (if medically appropriate)<sup>2,4</sup>; **AND**

- Physical therapy or physician-directed exercise program<sup>5</sup>; **AND**
- **ANY** of the following:
  - Corticosteroid injection if medically appropriate<sup>2,4</sup>; **OR**
  - Documentation that corticosteroid injection is contraindicated<sup>2,4</sup>; **OR**
- ◆ Documentation indicating that conservative, non-surgical management would be ineffective or counterproductive, including **ANY** of the following<sup>2,4</sup>:
  - Intractable pain or significant disabling interference with activities of daily living (ADLs); **OR**
  - Bone-on-bone articulation; **OR**
  - Severe deformity; **OR**
  - Failure of a previous osteotomy; **OR**
  - Malignancy of hip joint or adjacent soft tissues; **OR**
  - Avascular necrosis of the hip; **AND**
  - The patient's symptoms have limited their activities of daily living (ADLs)<sup>3,4</sup>; **AND**
  - Radiograph shows **ANY** of the following evidence of osteoarthritis of the hip<sup>1,4,6</sup>:
    - ◆ Joint space narrowing (less than 50%) with marginal osteophytes or subchondral sclerosis<sup>1,4,6</sup>; **OR**
    - ◆ Collapsed femoral head with marginal osteophytes or subchondral sclerosis<sup>1,4,6</sup>; **OR**
    - ◆ Joint space narrowing (greater than 50%)<sup>1,4,6</sup>; **OR**
    - ◆ Complete joint space loss<sup>1,4,6</sup>; **OR**
  - Malignancy involving bones or soft tissues of the pelvis or proximal femur<sup>1,3</sup>; **OR**
  - Aseptic necrosis of the femoral head<sup>1,3</sup>; **OR**
  - Displaced femoral neck fracture<sup>2,3</sup>; **OR**
  - Non-union or malunion fracture of the femoral neck<sup>2,3</sup>; **OR**

- Acute fracture of the femoral head or neck that is untreatable with open reduction and internal fixation (ORIF)<sup>2</sup>; **OR**
- Fracture dislocation of the hip untreatable with ORIF<sup>1,2</sup>; **OR**
- ◆ The procedure is a **partial hip arthroplasty (hip hemiarthroplasty)**, and **ANY** of the following is **TRUE**<sup>2,7,8</sup>:
  - Displaced femoral head or neck fracture<sup>7,8</sup>; **OR**
  - Acute fracture of the femoral head or neck that is untreatable with open reduction and internal fixation (ORIF)<sup>2</sup>; **OR**
  - Avascular necrosis of the femoral head<sup>1,2</sup>; **OR**
  - Non-union fracture of the femoral neck<sup>1,2</sup>; **OR**
  - Degenerative arthritis of the femoral head only in which the acetabulum does not need replacement<sup>1,2</sup>; **OR**
- ◆ The procedure is a **revision of prior arthroplasty** and **ALL** of the following are **TRUE**<sup>1,9,10</sup>:
  - The patient has significant hip pain<sup>1,9,10</sup>; **AND**
  - The patient has **ANY** of the following:
    - Surgical management of total joint infection<sup>1,9,10</sup>; **OR**
    - Instability<sup>1,9,10</sup>; **OR**
    - Loosening of the prosthesis<sup>1,9,10</sup>; **OR**
    - Failure of the prosthesis<sup>1,9,10</sup>; **OR**
    - Periprosthetic fracture<sup>1,9,10</sup>; **OR**
    - Recurrent or irreducible hip dislocation<sup>1,9,10</sup>; **OR**
    - Tissue or systemic reaction to implant<sup>1,9,10</sup>; **OR**
    - Clinically significant leg-length inequality not amenable to conservative management.<sup>1,9,10</sup>

## Non-Indications

- **Hip arthroplasty (partial, total, or revision)** is not considered appropriate if **ANY** of the following are **TRUE**<sup>1,2,4</sup>:
- ◆ Skeletal immaturity<sup>1</sup>; **OR**
  - ◆ Active infection<sup>1,2,4</sup>; **OR**
  - ◆ Rapidly progressive neurological disease, unless a concomitant displaced femoral neck fracture is present<sup>1,2,4</sup>; **OR**
  - ◆ Absence or relative insufficiency of abductor musculature<sup>1,2,4</sup>; **OR**
  - ◆ Neuropathic/neurotrophic arthritis.<sup>1,2,4</sup>

### **Level of Care Criteria**

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description/Definition</b>                                                                                                    |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 26990                 | Incision and drainage, pelvis or hip joint area; deep abscess or hematoma                                                             |
| 26991                 | Incision and drainage, pelvis or hip joint area; infected bursa                                                                       |
| 27030                 | Arthrotomy, hip, with drainage (eg, infection)                                                                                        |
| 27125                 | Hemiarthroplasty, hip, partial (eg, femoral stem prosthesis, bipolar arthroplasty)                                                    |
| 27130                 | Arthroplasty, acetabular and proximal femoral prosthetic replacement (total hip arthroplasty), with or without autograft or allograft |
| 27132                 | Conversion of previous hip surgery to total hip arthroplasty, with or without autograft or allograft                                  |
| 27134                 | Revision of total hip arthroplasty; both components, with or without autograft or allograft                                           |
| 27137                 | Revision of total hip arthroplasty; acetabular component only, with or without autograft or allograft                                 |
| 27138                 | Revision of total hip arthroplasty; femoral component only, with or without allograft                                                 |
| 27236                 | Open treatment of femoral fracture, proximal end, neck, internal fixation or prosthetic replacement                                   |
| 27250                 | Closed treatment of hip dislocation, traumatic; without anesthesia                                                                    |
| 27299                 | Unlisted procedure, pelvis or hip joint                                                                                               |

## Medical Evidence

Published in 2019, the Hip Fracture Evaluation with Alternatives of Total Hip Arthroplasty (HEALTH) trial, an expertise-based randomized controlled trial, enrolled 1495 patients across 10 countries to determine the most appropriate procedure to surgically manage hip fractures in older adults with displaced femoral neck fractures. Patients aged 50 and older underwent either total hip arthroplasty (THA) or hemiarthroplasty. The study team found similar mortality rates, no significant difference in the incidence of secondary procedures between groups, as well as what was ultimately deemed a “clinically unimportant” improvement among THA recipients as compared to hemiarthroplasty recipients. Therefore, the authors felt there to be limited advantages of THA with a higher risk profile in this patient population. This landmark study began to dismantle the traditional dogma of THA as the standard of care for patients of all ages with displaced femoral neck fractures.<sup>7</sup>

A 2021 meta-analysis of 40 studies comprising 3,561,446 hips found several patient-related risk factors that were associated with a higher risk of periprosthetic joint infection (PJI) after THA. High body mass index (BMI), femoral neck fracture, and opioid use conferred a higher risk of PJI. Interestingly, biological female sex, dislocation/dysplasia, and osteoarthritis were protective factors. The authors noted the importance of reducing the risk of PJI and subsequent revision or other invasive management by careful patient selection and optimization of modifiable risk factors.<sup>12</sup>

The American Academy of Orthopaedic Surgeons (AAOS) has published two guidelines pertaining to hip arthroplasty. *Management of Hip Fractures in Older Adults*, adopted in 2021, recommends arthroplasty over fixation for unstable femoral neck fractures.<sup>2</sup> The authors cite a decreased rate of reoperation among arthroplasty patients, though they note no statistical difference in mortality upon composite analysis of the reference studies.<sup>2</sup> *Management of Osteoarthritis of the Hip*, adopted in 2023, provides a robust set of clinical indications for surgical management of osteoarthritis, including hip arthroplasty.<sup>4</sup> The clinical practice guideline supports the use of NSAIDs to relieve pain and facilitate movement. In addition, it endorses careful patient screening and appropriate optimization in order to improve surgical



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# Clinical Guideline Revision History/Information

| Original Date: June 30, 2021 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Version 2                    | 10/6/2023 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Version 3                    | 7/18/2024 | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Version 4                    | 2/20/2025 | <p>Annual policy review &amp; restructure:</p> <ul style="list-style-type: none"> <li>• Improved and expanded references</li> <li>• Updated CPT codes</li> <li>• Updated recommended clinical approach to the current format.</li> <li>• Medical evidence section updated to align with current literature and professional society guidance.</li> <li>• Updated conservative care language to better reflect current standard language</li> <li>• Reordered indications to place total hip arthroplasty first</li> <li>• Conservative care updated to current standard internal language.</li> <li>• Fracture indications for THA expanded.</li> <li>• Modified steroid injection language for clarity.</li> <li>• Conservative care language modified to reflect non-opioid pain control.</li> </ul> |



## **Cohere Medical Policy – Hip Arthroscopy**

*Clinical Policy for Medical Necessity Review*

**Version: 5**

**Cohere Health UMC Approval Date: September 11, 2025**

Last Annual Review: April 17, 2025

Revision: September 11, 2025

Next Annual Review: April 17, 2026

This policy was reviewed by the American Association of Orthopaedic Surgeons (AAOS) prior to publication.

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy- Hip Arthroscopy

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)



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# Medical Necessity Criteria

## ***Service: Hip Arthroscopy***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Hip arthroscopy is a minimally invasive procedure that offers visualization of the hip joint through an instrument known as an arthroscope. Hip arthroscopy is useful for clinically complex cases with an unclear diagnosis and can also be used to collect biopsies to assess for synovial disease. Injuries to the hip may also be repaired during arthroscopy, including labral tears and acute trauma resulting in loose bodies within the hip joint. The torn labrum may be repaired by removing labral pieces and then suturing the tear.

Femoroacetabular impingement (FAI) is another common indication for hip arthroscopy. It causes pain and limits activity because of the abnormal shape of the bones of the hip, which developed improperly during childhood skeletal growth. In general, arthroscopy is well-tolerated, safe, and leads to improved function and quality of life.<sup>1</sup>

## **Medical Necessity Criteria**

### **Indications**

**Hip arthroscopy** is considered appropriate if **ANY** of the following is **TRUE**:

- **Diagnostic hip arthroscopy** is considered appropriate if the patient has **ALL** of the following<sup>1,2</sup>:
  - A source of hip pain with an unclear diagnosis; **AND**
  - **ANY** of the following is **TRUE**:
    - Loose bodies; **OR**
    - Chondral lesion; **OR**
    - Synovial disease; **OR**
    - Adhesive capsulitis; **AND**
  - **ANY** of the following:
    - Acute pathology or acute injury (infection, trauma, gluteal tear) which is exempt from conservative care; **OR**
    - Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>1,2</sup>:
      - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
      - Physical therapy or physician-directed exercise program; **AND**
      - **ANY** of the following:
        - Corticosteroid injection if medically appropriate; **OR**

- Documentation that corticosteroid injection is contraindicated;

**OR**

- **Arthroscopic labral debridement/repair** is considered appropriate with **ALL** of the following:
  - Labral tearing is visible on advanced imaging<sup>1-4</sup>; **AND**
  - **ANY** of the following:
    - Acute traumatic tear; **OR**
    - Failure of conservative management for greater than 3 months, including **ALL** of the following:
      - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
      - Physical therapy or physician-directed exercise program; **AND**
      - **ANY** of the following:
        - Corticosteroid injection if medically appropriate; **OR**
        - Documentation that corticosteroid injection is contraindicated;

**OR**

- **Trochanteric bursectomy** is considered appropriate when the patient has **ALL** of the following<sup>1,2</sup>:
  - **ANY** of the following:
    - Trochanteric bursitis (greater trochanteric pain syndrome); **OR**
    - Greater trochanteric pain syndrome; **OR**
    - Gluteal tendinopathy; **AND**
  - Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy or physician-directed exercise program; **AND**
    - **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Documentation that corticosteroid injection is contraindicated;

**OR**

- **Gluteal repair**, whether arthroscopic or open, is considered appropriate when the patient has imaging findings of **ANY** of the following<sup>1,2</sup>:
  - Gluteal tear; **OR**
  - **ALL** of the following:
    - Gluteal tendinopathy; **AND**

- Failure of conservative management for greater than 3 months, including **ALL** of the following:
  - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
  - Physical therapy or physician-directed exercise program; **AND**
  - **ANY** of the following:
    - Corticosteroid injection if medically appropriate; **OR**
    - Documentation that corticosteroid injection is contraindicated; **OR**
- **Arthroscopic osteochondroplasty** is considered appropriate with **ALL** of the following<sup>1,2,5</sup>:
  - Positive impingement sign with pain (hip is flexed to 90 degrees, adducted, and internally rotated); **AND**
  - Moderate to severe persistent hip or groin pain that limits activity and is worse with hip flexion; **AND**
  - Advanced imaging demonstrates **ANY** of the following:
    - Femoroacetabular impingement (FAI) impingement with evidence of CAM impingement (alpha angle greater than 50 degrees); **OR**
    - Pincer impingement (coxa profunda or acetabular retroversion)/subspine impingement<sup>6</sup>; **OR**
    - Ischiofemoral impingement<sup>6,7</sup>; **OR**
    - Residual impingement remains after first arthroscopy<sup>1,8</sup>; **AND**
  - Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy or physician-directed exercise program; **AND**
    - **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Documentation that corticosteroid injection is contraindicated; **OR**
- **Other intervention of the hip** is considered appropriate for **ANY** of the following<sup>1,2</sup>:
  - Ligamentum teres disorder<sup>9</sup>; **OR**
  - Proximal hamstring injury indicated by **ANY** of the following<sup>9-11</sup>:
    - 2-tendon injury with greater than 2 centimeters of retraction; **OR**

- 3-tendon injury; **OR**
- Acute infection/joint sepsis<sup>1</sup>; **OR**
- Acute trauma with associated findings on imaging (e.g. loose body noted after hip dislocation); **OR**
- Acute gluteal tear (partial or full-thickness) within three months of injury<sup>12</sup>; **OR**
- **ALL** of the following:
  - **ANY** of the following:
    - Sciatic nerve entrapment<sup>13</sup>; **OR**
    - Psoas tendon disorder; **OR**
    - Atraumatic instability that is felt to be resolvable with arthroscopic capsular plication<sup>14,15</sup>; **AND**
  - Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy or physician-directed exercise program; **AND**
    - **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Documentation that corticosteroid injection is contraindicated.

## Non-Indications

**Hip arthroscopy** is not considered appropriate when **ANY** of the following is **TRUE**:<sup>1,2</sup>

- Ankylosis of the hip; **OR**
- Advanced hip osteoarthritis (Tönnis grade 2 or 3).

## Level of Care Criteria

Outpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description/Definition                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27299          | Unlisted procedure, pelvis or hip joint                                                                                                                                                                                                                                                                                                                                                                            |
| 29860          | Diagnostic arthroscopy of hip joint; Diagnostic arthroscopy of hip joint with synovial biopsy                                                                                                                                                                                                                                                                                                                      |
| 29861          | Surgical arthroscopy of hip with removal of foreign body; Surgical arthroscopy of hip with removal of loose body                                                                                                                                                                                                                                                                                                   |
| 29862          | Surgical arthroscopy of hip with debridement of articular cartilage;<br>Surgical arthroscopy of hip with debridement of articular cartilage, abrasion arthroplasty, and resection of labrum;<br>Surgical arthroscopy of hip with debridement of articular cartilage, and abrasion arthroplasty;<br>Surgical arthroscopy of hip with shaving of articular cartilage, abrasion arthroplasty, and resection of labrum |
| 29863          | Surgical arthroscopy of hip with synovectomy                                                                                                                                                                                                                                                                                                                                                                       |
| 29914          | Surgical arthroscopy of hip with femoroplasty;<br>Surgical arthroscopy of hip with femoroplasty for cam lesion                                                                                                                                                                                                                                                                                                     |
| 29915          | Surgical arthroscopy of hip with acetabuloplasty;<br>Surgical arthroscopy of hip with acetabuloplasty for pincer lesion                                                                                                                                                                                                                                                                                            |
| 29916          | Surgical arthroscopy of hip with labral repair                                                                                                                                                                                                                                                                                                                                                                     |
| 29999          | Unlisted arthroscopic procedure                                                                                                                                                                                                                                                                                                                                                                                    |

## Medical Evidence

As compared to traditional open procedures, hip arthroscopy is minimally invasive, decreases the risk of neurovascular injury, and requires a shorter recovery time. A 2023 systematic review of patients aged 50 years and older saw these benefits persist among an older population, albeit alongside a pronounced risk for revision surgery and subsequent total hip arthroplasty (THA). The systematic review consisted of 6,696 patients across 17 studies who underwent primary hip arthroscopy between 2015 and 2021. Up to 10.8% of patients underwent surgical revision, while up to 34% experienced ultimate conversion to THA. The authors concluded that, although postoperative patient-reported outcomes were significantly improved as compared to baseline, careful patient selection is particularly important for patients of advanced age in order to appropriately weigh the very real risk of eventual revision or conversion to THA.<sup>16</sup>

Conducted in 2018, the UK FASHIoN study was an assessor-blinded, randomized controlled trial involving 348 patients with femoroacetabular hip impingement syndrome (FAI), 171 of whom underwent hip arthroscopy, while the other 177 were treated with conservative care alone. The authors found that hip arthroscopy conferred a significant improvement in quality of life at one year after surgical intervention. They noted that these results solidified the use of arthroscopy to treat FAI, which has grown in clinical popularity in recent years.<sup>17</sup>

A 2021 systematic review addressed the role of hip arthroscopy in the management of gluteal tendinopathy. The authors evaluated 27 studies, including 6 randomized controlled trials, with an aggregate of 1103 patients. Bursectomy was felt to be a valuable treatment option for patients who failed conservative measures. Surgical repair of partial-thickness and full-thickness gluteal tears was encouraged to be considered early in the course of injury due to the lack of data regarding nonoperative treatment of grade 3 and grade 4 (partial; full) tendinopathy.<sup>12</sup>

The American Association of Orthopaedic Surgeons (AAOS) has issued position statements pertaining to hip arthroscopy. Information statement



1047, published in 2016, acknowledges the increased patient safety risks conferred by tobacco use – including increased ventilatory support, myocardial infarction, cardiac arrest, cerebrovascular accident, sepsis, and death.<sup>18</sup> The AAOS states that patients who are active smokers may reduce these risks through cessation of smoking prior to surgery; they also note the special role orthopaedic surgeons play in counseling patients on the benefits of reduced or eliminated tobacco use before surgery. Importantly, unconfirmed cessation is not endorsed as a hard stop to surgery; rather, the surgeon's unique role as an advocate for preoperative smoking cessation is emphasized. Statements 1040 and 1184 discuss the impact of obesity on musculoskeletal conditions.<sup>19,20</sup> Patients with morbid obesity (BMI of 40 or above) are encouraged to participate in a weight loss program, obtain weight reduction resources through their physician, rectify nutritional deficiencies, and consider a delay in surgical treatment if it would facilitate participation in weight loss interventions that may improve surgical outcomes. Statement 1040 notes that individuals with obesity face an increased risk for sports injuries, and that when such injuries are treated arthroscopically, the procedure may be more technically difficult because of the loss of superficial landmarks. Questions remain as to whether functional results are affected by obesity. Further, the authors note the risks associated with general anesthesia for patients with obesity and emphasize the importance of adequate patient positioning and padding to avoid pressure ulcers, nerve palsies, and compartment syndromes, which are more common among obese patients. In general, obesity is associated with greater risk of premature complications and mortality during the perioperative period. The AAOS endorses compassionate, risk-informed patient counseling for obese patients who are considering surgery. Careful screening and appropriate referral to nutrition or endocrine care is also endorsed. Statement 1184 reinforces the risks associated with obesity in the setting of orthopaedic care and similarly encourages adequate patient counseling prior to surgery.

Social determinants of health remain an important area of ongoing orthopaedic surgery research, with recent literature raising questions regarding the healthcare disparities that may be potentiated by care limitations based on obesity and smoking status/nicotine dependence.<sup>21-23</sup> Other ongoing research interrogates the impacts that biological sex, race, and socioeconomic status have on hip arthroscopy utilization and outcomes.<sup>24-33</sup>

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# Policy Revision History/Information

| Original Date: May 22, 2020 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Version 2                   | 12/29/2023 | Annual review.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Version 3                   | 09/20/2024 | Updated language regarding conservative treatment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Version 4                   | 04/17/2025 | <p>Annual policy review &amp; restructure:</p> <p>Adjusted Recommended Clinical Approach to current format</p> <p>Added indications for gluteal repair and hip bursectomy based on physician feedback</p> <p>Removed weight reduction requirement in accordance with professional society guidelines</p> <p>Added indications: Acute infection/joint sepsis; acute trauma with findings documented on imaging (e.g. loose body noted after hip dislocation); acute gluteal tear within 3 months of injury; proximal hamstring injury; extra-articular impingement; sciatic nerve entrapment; ligamentum teres disorder; capsular plication</p> <p>Updated references</p> <p>Updated medical evidence section</p> <p>Conservative care language modified to reflect non-opioid pain control.</p> |

|           |            |                                                                                                                                                                                                                                           |
|-----------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |            | Modified steroid injection language for clarity.                                                                                                                                                                                          |
| Version 5 | 09/11/2025 | <p>Specified that gluteal repair may be arthroscopic or open (indications did not change)</p> <p>Combined indication for pincer impingement and subspine impingement to reflect the current classification of these clinical entities</p> |







## **Cohere Medical Policy – Hip Core Decompression with or without Bone Grafting**

*Clinical Policy for Medical Necessity Review*

**Version: 2**

**Cohere Health UMC Approval Date: July 24, 2025**

Last Annual Review: July 24, 2025

Revision: Not Applicable

Next Annual Review: July 24, 2026

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Hip Core Decompression with or without Bone Grafting

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Hip Core Decompression with or without Bone Grafting***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## Description

Core decompression (CD) is a minimally invasive surgery that involves drilling into the part of the femoral head affected by osteonecrosis (also referred to as avascular necrosis). CD helps relieve pressure within the bone, restore blood flow, and reduce pain. Surgical treatment depends on the severity and location of the disease, which is determined by advanced imaging.<sup>1,2</sup>

## Medical Necessity Criteria

### Indications

**Hip core decompression with or without bone grafting** is considered medically appropriate if **ALL** of the following are **TRUE**<sup>3,4</sup>:

- The patient has **ANY** of the following<sup>4-6</sup>:
  - Hip pain; **OR**
  - Functional disability; **AND**
- Advanced imaging with radiologic report that demonstrates **ALL** of the following<sup>7</sup>:
  - Osteonecrosis (stage I-II)<sup>8</sup>; **AND**
  - Minimal to no collapse of the femoral head (stage I-II).<sup>8</sup>

### Non-Indications

**Hip core decompression with or without bone grafting** is not considered medically appropriate if **ANY** of the following is **TRUE**<sup>7</sup>:

- Imaging shows moderate or severe arthritis; **OR**
- Advanced imaging shows advanced osteonecrosis (stage III-IV)<sup>8</sup>; **OR**
- The patient is 50 years of age or older.<sup>8,9</sup>

## Level of Care Criteria

Inpatient or Outpatient

## Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                                                                                                   |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20933          | Allograft, includes templating, cutting, placement and internal fixation, when performed; hemicortical intercalary, partial (ie, hemicylindrical) (List separately in addition to code for primary |

|       |                                                                                                                                                                                          |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | procedure)                                                                                                                                                                               |
| 26992 | Incision, bone cortex, pelvis and/or hip joint (eg, osteomyelitis or bone abscess)                                                                                                       |
| 27071 | Partial excision, wing of ilium, symphysis pubis, or greater trochanter of femur, (craterization, saucerization) (eg, osteomyelitis or bone abscess); deep (subfascial or intramuscular) |
| 27170 | Bone graft, femoral head, neck, intertrochanteric or subtrochanteric area (includes obtaining bone graft)                                                                                |
| 27299 | Unlisted procedure, pelvis or hip joint                                                                                                                                                  |
| S2325 | Hip core decompression                                                                                                                                                                   |

## Medical Evidence

Hu et al. (2023) performed a network meta-analysis of 18 randomized controlled trials (RCTs) to analyze surgical interventions for osteonecrosis of the femoral head (ONFH). All trials were in non-traumatic ONFH, and most included outcomes for improvement in Harris hip score (HHS) or rate of conversion to total hip arthroplasty (THA). While core decompression (CD) offers promising results for the treatment of ONFH and is commonly used in clinical practice, no significant differences in preventing ONFH progression were found when comparing CD to other surgical interventions (e.g., autologous bone grafting, free fibula grafting, vascularized bone grafting) in this study. All treatments involving bone grafting appeared to be effective in these trials.<sup>3</sup>

Andronic et al. (2021) conducted a systematic review to evaluate the CD of the femoral head in avascular necrosis (AVN; also known as osteonecrosis) to preserve the hip joint. Studies that included additional implants or augmentation techniques were excluded. Forty-nine studies covering 2540 hips were included (mean follow-up: 75.1 months; mean age at surgery: 39 years). Most studies reported improvement in outcome scores and pain improvement. Pooled data from 20 studies (1134 hips; mean follow-up: 56 months) showed that 38% of patients, primarily with early-stage AVN, underwent THA at an average of 26 months post-CD.<sup>5</sup>

Kang et al. (2018) performed a matched pair control study to compare the outcomes of CD alone vs CD combined with bone marrow mesenchymal stem cell (BMMSC) implantation for patients with ONFH. One hundred patients (106 hips) were analyzed; the CD+BMMSC group had a lower THA conversion rate compared to the CD-only group (28.3% vs 49%). The progression of the ONFH stage was similar between groups. However, in early-stage ONFH (stages I and II), CD+BMMSC significantly reduced clinical failure compared to CD alone (20% vs 50%). Survival analysis indicated a longer time to failure in the CD and BMMSC groups, up to 10 years of follow-up. Age and gender did not significantly affect THA conversion rates, and no complications were reported. The study suggests that BMMSC implantation for early-stage ONFH may decrease the need for THA but does not impact ONFH progression.<sup>1</sup>

Zalavras and Lieberman (2014) reviewed the literature for the American Academy of Orthopedic Surgeons (AAOS) regarding the evaluation and treatment of ONFH. They concur that magnetic resonance imaging (MRI) is the preferred imaging modality. In younger patients, preserving the femoral head with CD and bone grafting may be combined with other therapies, such as stem cell transplantation. If the femoral head collapses, the recommended treatment is arthroplasty. In one of two randomized trials, alendronate used for early-stage osteonecrosis significantly reduced disease progression and femoral head collapse; however, conflicting results in the second trial show no differences between alendronate and placebo.<sup>7</sup>

Osteonecrosis outcomes following CD treatment, including pain relief, conversion to THA, osteonecrosis stage, and lesion size, are “poor,” “fair,” or “good.”<sup>4</sup> While hip CD is often the first line of treatment, there is no consensus for the treatment of ONFH to date.<sup>3,4,10-12</sup> The conflicting evidence for each treatment criterion suggests that no single factor may be sufficient for predicting treatment outcomes in osteonecrosis of the hip. This underscores the need for a multifaceted approach to patient selection and more well-designed, prospective, multicenter clinical trials.



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# Policy Revision History/Information

| Original Date: May 28, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Version 2                   | 07/24/2025 | <p>Annual review.</p> <p>Clarified the indications due to a lack of society guidance and literature evidence. Deleted the separate indications for clinical symptoms or physical exam and added one broad indication.</p> <p>Updated advanced imaging indication to include “with radiologic report that demonstrates.”</p> <p>Literature review – Medical Evidence section updated (Hu et al., 2023; Konarski et al., 2022; Petek et al., 2019; Rajagopal et al., 2012; Min et al., 2008).</p> |



## **Cohere Medical Policy – Interphalangeal Joint Arthroplasty**

*Clinical Policy for Medical Necessity Review*

**Version: 3**

**Cohere Health UMC Approval Date: July 10, 2025**

Last Annual Review: July 10, 2025

Revision: Not Applicable

Next Annual Review: July 10, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Interphalangeal Joint Arthroplasty

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Interphalangeal Joint Arthroplasty***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the

patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Interphalangeal joint (i.e., hand or foot small joint) arthroplasty is a well-established surgery that can provide pain relief, preserve motion, and improve function of the hand or foot.<sup>1-3</sup> During an interphalangeal joint arthroplasty, tendons may be split or removed to access and replace the damaged joint.<sup>1</sup> Surgeons may use silicone, metal, pyrocarbon, or ceramic implants in a lateral, dorsal, or volar (i.e., side, upper, or palm/sole, respectively) approach.<sup>2</sup> All surgical techniques have shown improved postoperative grip and pinch strength, which are important factors in evaluating functional status.<sup>2</sup> Recovery may include immobilization of the hand or foot, then exercises to regain and improve function, including physical therapy, may be recommended.<sup>1</sup>

## **Medical Necessity Criteria**

### **Indications**

**Interphalangeal joint arthroplasty** is considered appropriate if **ALL** of the following are **TRUE**:

- **ANY** of the following:
  - Current nicotine user with no product use for 6 weeks; and **ANY** of the following<sup>4,5</sup>:
    - Negative urine (cotinine) lab test within 30 days; **OR**
    - Surgery is urgently required due to documented reason; **OR**
  - No history of nicotine product use within the last 12 months; **OR**
  - No lifetime history of nicotine product use, **AND**
- The patient has finger or toe pain and loss of motion, which is interfering with hand function and age-appropriate daily self-care and functional activities<sup>6</sup>; **AND**
- Radiographic confirmation of advanced joint disease of the proximal interphalangeal (PIP) joint, including **ANY** of the following<sup>3</sup>:
  - Joint degeneration, such as PIP joint space narrowing or bone deformities<sup>7</sup>; **OR**
  - Osteophytes<sup>7,8</sup>; **OR**
  - Subchondral sclerosis or cysts<sup>7,8</sup>; **OR**
  - Fracture-dislocations or fracture-subluxations<sup>9,10</sup>; **OR**
  - Juvenile idiopathic arthritis<sup>11</sup>; **OR**



- Congenital deformity<sup>12,13</sup>; **AND**
- **ANY** of the following:
  - Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>6,14–16</sup>:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy, including a physician-directed home exercise program; **AND**
    - Orthotics (e.g., shoe modification, splinting, or padding); **AND**
    - **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Documentation that corticosteroid injection is contraindicated; **OR**
  - The patient's severe disability or deformity is significantly affecting their ability to perform age-appropriate daily self-care and functional activities.<sup>9,10,17</sup>

## Non-Indications

**Interphalangeal joint arthroplasty** is not considered appropriate if **ANY** of the following is **TRUE**:

- Persistent infection at the surgical site<sup>18</sup>; **OR**
- Non-reconstructable or irreparable extensor or flexor tendon mechanism; **OR**
- Skin defect or loss<sup>19</sup>; **OR**
- The procedure is a distal interphalangeal (DIP) joint arthroplasty with implant<sup>8</sup>; **OR**
- The procedure is an interphalangeal joint replacement of the thumb.<sup>20</sup>

### **Level of Care Criteria**

Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                  |
|-----------------------|--------------------------------------------------------------------------|
| 26535                 | Arthroplasty, interphalangeal joint; each joint                          |
| 26536                 | Arthroplasty, interphalangeal joint; with prosthetic implant, each joint |

## Medical Evidence

Musso-Daury et al. (2024) performed a systematic review and meta-analysis of randomized controlled trials that identified several conservative, non-pharmacological interventions for the management of chronic pain in patients with juvenile idiopathic arthritis (JIA). The authors strongly recommend integrating physical exercise programs into the care of JIA-related chronic pain for a minimum of 3 months to enhance emotional and physical well-being in children and adolescents with JIA.<sup>16</sup> Although the majority of the studies in this review were for large joints, a recent case series also points to the effectiveness of conservative care for small joints, specifically with corticosteroid and other medication therapies.<sup>15</sup>

Terpstra et al. (2022) provide insight into prominent hand osteoarthritis therapy guidelines and examine how closely clinical practices align with these guidelines. Significant variations exist in the application of treatment options. An optimal balance between non-pharmacological and pharmacological approaches could be enhanced by increasing referrals to physical or occupational therapists. It is advised to consider guidelines from organizations such as the European Alliance of Associations for Rheumatology (EULAR), OsteoArthritis Research Society International (OARSI), and American College of Rheumatology (ACR) for referral, alongside embracing a multidisciplinary treatment strategy. EULAR recommends reserving surgical interventions for patients with severe disability or deformity or when conservative care modalities have not been successful.<sup>6</sup>

Chan et al. (2021) reviewed distal interphalangeal joint (DIPJ) arthroplasty. The authors examine surgical techniques, implant varieties, clinical outcomes, and associated complications. A comprehensive search across five databases from inception to April 18, 2020 yielded insights suggesting that silicone implants for DIPJ arthroplasty may present a viable alternative to arthrodesis (i.e., joint fusion). Arthroplasty can facilitate the preservation of joint mobility, alleviate pain, and enhance patient satisfaction. However, the available evidence remains insufficient to designate any specific implant design or surgical approach as definitively superior.<sup>8</sup>

Demino et al. (2021) conducted a systematic literature review to present postoperative results of different treatment approaches for proximal interphalangeal (PIP) joint fracture-dislocations. Outcomes assessed included range of motion (ROM) at the PIP joint, grip strength (as a percentage of the contralateral hand), and Quick Disabilities of the Arm, Shoulder, and Hand (QuickDASH) scores. Articles were categorized by the surgical method used (e.g., open reduction, percutaneous fixation, dynamic external fixation, extension-block pinning, and hemi-hamate arthroplasty). A total of 48 articles including data from 746 hands (735 patients) were reviewed. Results showed that percutaneous fixation led to the highest postoperative ROM at final follow-up, while extension-block pinning resulted in the greatest grip strength. Dorsal fracture-dislocations generally exhibited higher average ROM and lower QuickDASH scores, whereas pilon fractures showed higher grip strength. However, no surgical approach or fracture type consistently produced superior outcomes. The authors concluded that surgical treatment requires careful decision-making based on considerations such as fracture type, joint space area, and fracture size.<sup>9</sup>

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# Clinical Policy Revision History/Information

| Original Date: April 5, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History               |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Version 2                    | 09/20/2024 | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Version 3                    | 07/10/2025 | <p>Annual review. No changes to procedure codes.</p> <p>Updated standard language for nicotine and conservative care indications.</p> <p>Added references to support conservative care as the primary treatment in pediatric/adolescent populations.</p> <p>Changed mentions of “activities of daily living” to “age-appropriate daily self-care and functional activities” to better encompass pediatric/adolescent populations, as some aspects of ADLs (work absenteeism, managing household tasks, etc.) do not apply to all ages.</p> <p>Broadened “PIP joint space narrowing” to “Joint degeneration, such as PIP joint space narrowing or bone deformities.”</p> <p>Added indications for “fracture-dislocations or fracture-subluxations,” “juvenile idiopathic arthritis,” and “congenital deformity” to the radiographic confirmation section.</p> <p>Added indication for cases in which patients cannot undergo 3 months of conservative care: “the patient’s severe disability or deformity is significantly affecting their ability to perform age-appropriate daily self-care and functional activities.”</p> |



|  |  |                                                                                               |
|--|--|-----------------------------------------------------------------------------------------------|
|  |  | Literature review - Description and Medical Evidence sections updated (including references). |
|--|--|-----------------------------------------------------------------------------------------------|



## **Cohere Medical Policy – Interspinous Process Devices with Open Decompression**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 3  
**Effective Date:** December 19, 2024

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy – Interspinous Process Devices with Open Decompression

**Date of last literature review:** 11/14/2024

**Document last updated:** 12/19/2024

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Interspinous Devices with Open Decompression***

### **Recommended Clinical Approach**

Designed as an alternative to lumbar fusion or decompression, interspinous spacers were developed to provide a less invasive surgical treatment for lumbar spinal stenosis (LSS) with intermittent neurogenic claudication (NC).<sup>1</sup> These devices do not alter the bony anatomy of the spinal column; yet via indirect methods, they can both stabilize and decompress the local anatomy and offer treatment for LSS. As the name suggests, interspinous spacers are positioned between the spinous processes. This reduces lumbar extension at the treated levels but allows preserved lateral and rotational movement. By fixing the stenotic segment in a slightly flexed position, the interspinous spacer decreases the symptoms of NC. The first of these devices was given approval in 2005 by the United States Food and Drug Administration (FDA) approval.<sup>2</sup> The Superior® Interspinous Spacer, also known as Vertiflex®, is a titanium implant that is delivered percutaneously to relieve back pain caused by LSS.

### **Medical Necessity Criteria**

#### **Indications**

→ **Interspinous process devices** are considered appropriate if **ALL** of the following are **TRUE**<sup>3-7</sup>:

- ◆ The patient is skeletally mature with **ANY** of the following related to intermittent neurogenic claudication (NC)<sup>5</sup>:
  - Refractory pain; **OR**
  - Numbness; **OR**
  - Cramping in the legs; **AND**
- ◆ Symptoms are secondary to a diagnosis of moderate degenerative lumbar spinal stenosis (LSS), with or without grade 1 spondylolisthesis<sup>5</sup>; **AND**
- ◆ Failure of conservative management for greater than 3 months, including **ALL** of the following:

- Anti-inflammatory medications, analgesics, or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **AND**
- Physical therapy; **AND**
- **ANY** of the following:
  - Corticosteroid injection if medically appropriate; **OR**
  - Corticosteroid injection is contraindicated; **AND**
- ◆ Advanced imaging (magnetic resonance imaging [MRI] or computed tomography [CT]) demonstrates **ALL** of the following:
  - Evidence of mild to moderate (50% or less) central canal stenosis; **AND**
  - The stenosis is confined to 1 or 2 lumbar levels; **AND**
- ◆ The patient is deemed a non-surgical candidate by a surgeon.

## Non-Indications

→ **Interspinous process devices** are not considered appropriate if **ANY** of the following is **TRUE**<sup>5-8</sup>:

- ◆ Advanced stenosis that is defined by **ANY** of the following:
  - Greater than 2 levels of moderate lumbar stenosis; **OR**
  - One level of severe stenosis; **OR**
- ◆ Previous decompression at the planned level for surgery; **OR**
- ◆ An allergy to titanium or titanium alloy; **OR**
- ◆ Spinal anatomy or disease that would prevent implantation of the device or cause the device to be unstable in situ, including but not limited to **ANY** of the following:
  - Instability of the lumbar spine (e.g., isthmic spondylolisthesis or degenerative spondylolisthesis greater than grade 1 [on a scale of 1 to 4]); **OR**
  - An ankylosed segment at the affected level(s); **OR**
  - Fracture of the spinous process, pars interarticularis, or laminae (unilateral or bilateral); **OR**
  - Scoliosis (Cobb angle greater than 10 degrees); **OR**
- ◆ Cauda equina syndrome; **OR**
- ◆ Diagnosis of severe osteoporosis, defined as bone mineral density (from DEXA scan or equivalent method) in the spine or hip that is more than 2.5 SD below the mean of adult normals; **OR**
- ◆ Active systemic infection, or infection localized to the site of implantation; **OR**
- ◆ Prior fusion or decompression procedure at the index level; **OR**

- ◆ Morbid obesity (body mass index [BMI] greater than 40).

### **Level of Care Criteria**

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description/Definition</b>                                                                                                                                                                                                                  |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22867                 | Insertion of interlaminar/interspinous process stabilization/distraction device, without fusion, including image guidance when performed with open decompression, lumbar; single level                                                              |
| 22868                 | Insertion of interlaminar/interspinous process stabilization/distraction device, without fusion, including image guidance when performed, with open decompression, lumbar; second level (List separately in addition to code for primary procedure) |
| C1821                 | Interspinous process distraction device (implantable)                                                                                                                                                                                               |

## Medical Evidence

Onggo et al. (2021) concluded in a systematic review that interspinous spacers, compared to open decompression with interbody fusion, similar outcomes were achieved with reduced operative time, length of stay, blood loss, and improved segment mobility. Future directions may include the implantation of interspinous spacers with open decompression as an alternative to decompression and interbody fusion for stable grade 1 spondylolisthesis and central stenosis. Future studies are recommended by the group.<sup>8</sup>

Deer et al. (2018) formulated several recommendations for minimally invasive spine treatment related to lumbar spinal stenosis (LSS). The systematic review concluded that such treatments must be used in a judicious and algorithmic fashion. There were 11 consensus recommendations made throughout the document including obtaining radiographic evidence, differentiating between neurogenic claudication and other claudication sources as well as following anticoagulation recommendations.<sup>4</sup>

The United States Food and Drug Administration (FDA) approved the Superior Interspinous Spacer (ISS) by VertiFlex, Inc. 2015. The spacer is intended for patients with moderate degenerative LSS and impaired physical function who experience relief in flexion from symptoms (e.g., pain, numbness, or cramping) affecting the legs, buttocks, or groin. The symptoms may be accompanied with or without back pain. The device “may be implanted at one or two adjacent lumbar levels in patients in whom treatment is indicated at no more than two levels, from L1 to L5”..<sup>5-6</sup>

The North American Spine Society (NASS) conditionally recommended in their 2014 coverage policy that in a select group of patients, interspinous distraction devices without direct decompression or fusion would be appropriate. They discuss the benefits of operative versus nonoperative treatment, that surgical intervention has been proven superior in a number of studies.<sup>1</sup>



## References

1. North American Spine Society (NASS). Coverage policy recommendations: Interspinous devices without fusion. Published May 2014. Accessed November 14, 2024. <https://www.spine.org>.
2. Deyo RA, Martin BI, Ching A, et al. Interspinous spacers compared with decompression or fusion for lumbar stenosis: Complications and repeat operations in the Medicare population. *Spine*. 2013;38(10):865–872. doi: 10.1097/BRS.0b013e31828631b8. PMID: 23324936; PMCID: PMC3855445.
3. Tapp SJ, Martin BI, Tosteson TD, et al. Understanding the value of minimally invasive procedures for the treatment of lumbar spinal stenosis: The case of interspinous spacer devices. *Spine J*. 2018;18(4):584–592. doi: 10.1016/j.spinee.2017.08.246. PMID: 28847740.
4. Deer T, Grider J, Pope J, et al. The MIST guidelines: The Lumbar Spinal Stenosis Consensus Group guidelines for minimally invasive spine treatment. *Pain Pract*. 2019 Mar;19(3):250–274. doi: 10.1111/papr.12744. PMID: 30369003.
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# Clinical Guideline Revision History/Information

|                                  |            |                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Original Date: December 15, 2023 |            |                                                                                                                                                                                                                                                                                                                                    |
| Review History                   |            |                                                                                                                                                                                                                                                                                                                                    |
| Version 2                        | 9/20/2024  | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                 |
| Version 3                        | 12/19/2024 | <ul style="list-style-type: none"><li>• Annual review.</li><li>• Updated references.</li><li>• Added indications - "The patient is deemed a non-surgical candidate by a surgeon."</li><li>• The indications for this policy match the indications of the Interspinous Process Devices without Open Decompression policy.</li></ul> |
|                                  |            |                                                                                                                                                                                                                                                                                                                                    |



## **Cohere Medical Policy – Interspinous Process Devices without Open Decompression**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 5  
**Effective Date:** December 19, 2024

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy - Interspinous Process Devices without Open Decompression

**Date of last literature review:** 11/14/2024

**Document last updated:** 12/19/2024

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Interspinous Devices without Open Decompression***

### **Recommended Clinical Approach**

Designed as an alternative to lumbar fusion or decompression, interspinous spacers were developed to provide a less invasive surgical treatment for lumbar spinal stenosis (LSS) with intermittent neurogenic claudication (NC).<sup>1</sup> These devices do not alter the bony anatomy of the spinal column; yet via indirect methods, they can both stabilize and decompress the local anatomy and offer treatment for LSS. As the name suggests, interspinous spacers are positioned between the spinous processes. This reduces lumbar extension at the treated levels but allows preserved lateral and rotational movement. By fixing the stenotic segment in a slightly flexed position, the interspinous spacer decreases the symptoms of NC. The first of these devices was given approval in 2005 by the United States Food and Drug Administration (FDA).<sup>2</sup> The Superior® Interspinous Spacer, also known as Vertiflex®, is a titanium implant that is delivered percutaneously to relieve back pain caused by LSS.

### **Medical Necessity Criteria**

#### **Indications**

- **Interspinous process devices** are considered appropriate if **ALL** of the following are **TRUE**<sup>3-7</sup>:
- ◆ The patient is skeletally mature with ANY of the following related to intermittent neurogenic claudication (NC)<sup>5</sup>:
    - Refractory pain; OR
    - Numbness; OR
    - Cramping in the legs; AND
  - ◆ Symptoms are secondary to a diagnosis of moderate degenerative lumbar spinal stenosis (LSS), with or without grade 1 spondylolisthesis<sup>5</sup>; **AND**
  - ◆ Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - Anti-inflammatory medications, analgesics, or prescription

- medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **AND**
- Physical therapy; **AND**
- **ANY** of the following:
  - Corticosteroid injection if medically appropriate; **OR**
  - Corticosteroid injection is contraindicated; **AND**
- ◆ Advanced imaging (magnetic resonance imaging [MRI] or computed tomography [CT]) demonstrates **ALL** of the following:
  - Evidence of mild to moderate (50% or less) central canal stenosis; **AND**
  - The stenosis is confined to 1 or 2 lumbar levels; **AND**
- ◆ The patient is deemed a non-surgical candidate by a surgeon.

## Non-Indications

→ **Interspinous process devices** are not considered appropriate if **ANY** of the following is **TRUE**<sup>5-8</sup>:

- ◆ Advanced stenosis is defined by **ANY** of the following:
  - Greater than 2 levels of moderate lumbar stenosis; **OR**
  - One level of severe stenosis; **OR**
- ◆ Previous decompression at the planned level for surgery; **OR**
- ◆ An allergy to titanium or titanium alloy; **OR**
- ◆ Spinal anatomy or disease that would prevent implantation of the device or cause the device to be unstable in situ, including but not limited to **ANY** of the following:
  - Instability of the lumbar spine (e.g., isthmic spondylolisthesis or degenerative spondylolisthesis greater than grade 1 [on a scale of 1 to 4]); **OR**
  - An ankylosed segment at the affected level(s); **OR**
  - Fracture of the spinous process, pars interarticularis, or laminae (unilateral or bilateral); **OR**
  - Scoliosis (Cobb angle greater than 10 degrees); **OR**
- ◆ Cauda equina syndrome; **OR**
- ◆ Diagnosis of severe osteoporosis, defined as bone mineral density (from DEXA scan or equivalent method) in the spine or hip that is more than 2.5 SD below the mean of adult normals; **OR**
- ◆ Active systemic infection or infection localized to the site of implantation; **OR**
- ◆ Prior fusion or decompression procedure at the index level; **OR**
- ◆ Morbid obesity (body mass index [BMI] greater than 40).

### **Level of Care Criteria**

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description/Definition</b>                                                                                                                                                                                                               |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22869                 | Insertion of interlaminar/interspinous process stabilization/distraction device, without open decompression or fusion, including image guidance when performed, lumbar; single level                                                             |
| 22870                 | Insertion of interlaminar/interspinous process stabilization/distraction device, without open decompression or fusion, including image guidance when performed, lumbar; second level (List separately in addition to code for primary procedure) |
| C1821                 | Interspinous process distraction device (implantable)                                                                                                                                                                                            |



## Medical Evidence

Onggo et al. (2021) concluded in a systematic review that interspinous spacers, compared to open decompression with interbody fusion, similar outcomes were achieved with reduced operative time, length of stay, blood loss, and improved segment mobility. Future directions may include the implantation of interspinous spacers with open decompression as an alternative to decompression and interbody fusion for stable grade 1 spondylolisthesis and central stenosis. Future studies are recommended by the group.<sup>8</sup>

Deer et al. (2018) formulated several recommendations for minimally invasive spine treatment related to lumbar spinal stenosis (LSS). Their systematic review concluded that such treatments must be used in a judicious and algorithmic fashion. There were 11 consensus recommendations made throughout the document including obtaining radiographic evidence, differentiating between neurogenic claudication and other claudication sources as well as following anticoagulation recommendations.<sup>4</sup>

The United States Food and Drug Administration (FDA) approved the Superior Interspinous Spacer (ISS) by VertiFlex, Inc. in 2015. The spacer is intended for patients with moderate degenerative LSS and impaired physical function who experience relief in flexion from symptoms (e.g., pain, numbness, or cramping) affecting the legs, buttocks, or groin. The symptoms may be accompanied with or without back pain. The device “may be implanted at one or two adjacent lumbar levels in patients in whom treatment is indicated at no more than two levels, from L1 to L5”.<sup>5-6</sup>

The North American Spine Society (NASS) conditionally recommended in their 2014 coverage policy that in a select group of patients, interspinous distraction devices without direct decompression or fusion would be appropriate. They discuss the benefits of operative versus nonoperative treatment, that surgical intervention has been proven superior in a number of studies.<sup>1</sup>

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3. Tapp SJ, Martin BI, Tosteson TD, et al. Understanding the value of minimally invasive procedures for the treatment of lumbar spinal stenosis: The case of interspinous spacer devices. *Spine J*. 2018;18(4):584–592. doi: 10.1016/j.spinee.2017.08.246. PMID: 28847740.
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# Clinical Guideline Revision History/Information

| Original Date: June 15, 2023 |            |                                                                                                                                                                                                                                                                                                                                     |
|------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History               |            |                                                                                                                                                                                                                                                                                                                                     |
| Version 2                    | 9/29/2023  |                                                                                                                                                                                                                                                                                                                                     |
| Version 3                    | 12/15/2023 |                                                                                                                                                                                                                                                                                                                                     |
| Version 4                    | 9/20/2024  | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                  |
| Version 5                    | 12/19/2024 | <ul style="list-style-type: none"> <li>• Annual review.</li> <li>• Updated references.</li> <li>• Added indication - "The patient is deemed a non-surgical candidate by a surgeon."</li> <li>• The indications for this policy match the indications of the Interspinous Process Devices with Open Decompression policy.</li> </ul> |
|                              |            |                                                                                                                                                                                                                                                                                                                                     |



# **Cohere Medical Policy – Intradiscal Biacuplasty, Percutaneous Intradiscal Radiofrequency Thermocoagulation (PIRFT), or Intradiscal Electrothermal Therapy (IDET)**

*Clinical Guidelines for Medical Necessity Review*

**Version: 3**

**Cohere Health UMC Approval Date: July 24, 2025**

Last Annual Review: July 24, 2025

Revision: Not Applicable

Next Annual Review: July 24, 2026

# Important Notices

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## Guideline Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Intradiscal Biacuplasty, Percutaneous Intradiscal Radiofrequency Thermocoagulation (PIRFT), or Intradiscal Electrothermal Therapy (IDET)

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)

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# Medical Necessity Criteria

***Service: Intradiscal Biacuplasty, Percutaneous Intradiscal Radiofrequency Thermocoagulation (PIRFT), or Intradiscal Electrothermal Therapy (IDET)***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions

- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

### **Description**

Intradiscal biacuplasty, percutaneous intradiscal radiofrequency thermocoagulation (PIRFT), or intradiscal electrothermal therapy (IDET) are all procedures that involve the application of heat to intervertebral discs to stabilize joints and relieve pain. Intradiscal biacuplasty and PIRFT use radiofrequency energy to generate heat using either two probes applied to opposite sides of the disc or a single probe applied to the center of the disc, respectively, while IDET uses a thermal catheter to apply heat directly.<sup>1,2</sup> Percutaneous disc decompression procedures, including percutaneous endoscopic laser discectomy (PELD), percutaneous lumbar disc decompression (PLDD), and target percutaneous laser disc decompression (T-PLDD), are procedures in which a small portion of disc tissue is ablated to relieve intradiscal pressure and decrease pain.<sup>3</sup>

### **Medical Necessity Criteria**

#### **Indications**

**Intradiscal Biacuplasty, Percutaneous Intradiscal Radiofrequency Thermocoagulation (PIRFT), or Intradiscal Electrothermal Therapy (IDET)** is considered appropriate if **ANY** of the following is **TRUE**:

- This procedure is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

#### **Non-Indications**

**Intradiscal Biacuplasty, Percutaneous Intradiscal Radiofrequency Thermocoagulation (PIRFT), or Intradiscal Electrothermal Therapy (IDET)** is not considered appropriate if **ANY** of the following is **TRUE**:

- This is not applicable, as there are no indications.

### **Level of Care Criteria**

None



### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22526                 | Bilateral percutaneous intradiscal electrothermal annuloplasty of a single level of spine using fluoroscopic guidance; Unilateral percutaneous intradiscal electrothermal annuloplasty of a single level of spine using fluoroscopic guidance                                                                                                                                                                                                                                                        |
| 22527                 | Bilateral percutaneous intradiscal electrothermal annuloplasty of a single additional level using fluoroscopic guidance; Bilateral percutaneous intradiscal electrothermal annuloplasty of multiple additional levels using fluoroscopic guidance; Unilateral percutaneous intradiscal electrothermal annuloplasty of multiple additional levels using fluoroscopic guidance; Unilateral percutaneous intradiscal electrothermal annuloplasty of single additional level using fluoroscopic guidance |
| 62287                 | Decompression procedure, percutaneous, of nucleus pulposus of intervertebral disc, any method, single or multiple levels, lumbar (e.g., manual or automated percutaneous discectomy, percutaneous laser discectomy.                                                                                                                                                                                                                                                                                  |
| S2348                 | Decompression procedure, percutaneous, of nucleus pulposus of intervertebral disc, using radiofrequency energy, single or multiple levels, lumbar                                                                                                                                                                                                                                                                                                                                                    |

## Medical Evidence

Helm et al. (2017) conducted a systematic review of 49 studies to evaluate the effectiveness of thermal annular procedures (TAPs) in treating chronic refractory discogenic pain. The primary outcome measures were at least 40% pain relief and functional improvement. Two randomized control trials (RCTs) with positive results indicated strong evidence (Level I) supporting the efficacy of biacuplasty for treating chronic, refractory discogenic pain. For intradiscal electrothermal therapy (IDET), one high-quality RCT demonstrating efficacy and one moderate-quality RCT suggesting no benefit provided moderate evidence (Level III) for its use. Evidence supporting the use of discTRODE was limited, categorized as Level V.<sup>2</sup>

Epstein (2016) noted that targeted disc decompression procedures are generally ineffective in relieving pain, with relatively low success rates (60–70%) and relatively high reoperation rates (38%). Notably, the low success and high reoperation rates are inferior to reported success and reoperation rates after alternative procedures, including microdiscectomy. The author also reviewed studies showing that disc decompression procedures may require longer recovery times and may not effectively remove foraminal lumbar disc herniation, necessitating later revision surgery to address persistent leg pain.<sup>3</sup>

Lu et al. (2014) performed a systematic review of current non-surgical management of discogenic low back pain. Eleven RCTs focused on injections, ablative techniques, and traction therapy were included in the review. Six clinical studies reported no significant differences between active and sham/placebo treatments. Five studies that included intradiscal biacuplasty demonstrated significant differences in clinical outcomes favoring intervention over sham treatment. There were no apparent advantages of PIRFT over sham control. Assessing the selection criteria for studies on intradiscal biacuplasty, along with a stratified analysis of results from RCTs on intradiscal electrothermal therapy (IDET), the authors raised doubts as to whether conclusions from these RCTs can be applied to the broader

population of patients with discogenic pain. The authors concluded that additional research is needed to establish the efficacy of these treatments.<sup>4</sup>

Several professional medical societies have issued evidence-based guidance documents noting the lack of well-controlled, appropriately powered clinical trial studies supporting thermal intradiscal procedures. In 2009, the American Pain Society issued two guidelines on interventional therapies for low back pain. In both of these, the level of evidence for intradiscal electrothermal therapy and PIRFT was classified as poor. The authors concluded that there was no clear evidence of benefit to support procedures involving application of energy to degenerated discs, primarily because of conflicting trial results, sparse data, lack of placebo-controlled trials, methodological shortcomings, and clinical heterogeneity.<sup>5,6</sup> In 2015, Hooten and Cohen published a clinically focused Mayo Clinic review on the evaluation and treatment of low back pain, which also noted that evidence for intradiscal thermal procedures, including IDET and biacuplasty, is limited at best.<sup>7</sup> In their 2020 evidence-based clinical guideline for the diagnosis and treatment of low back pain, the North American Spine Society (NASS) gave biacuplasty a grade of C (poor quality evidence) and PIRFT a grade of I (insufficient evidence for a recommendation).<sup>8</sup> In 2013, the American Society of Interventional Pain Physicians updated their comprehensive evidence-based guidelines for interventional techniques in chronic spinal pain, noting that the evidence for IDET and biacuplasty was limited-to-fair, with few studies supporting their use and even fewer being of high quality.<sup>9</sup> Two 2016 National Institute of Health and Care Excellence (NICE) interventional procedure guidances similarly noted that evidence for the efficacy of such procedures is inconsistent and of poor quality or limited in quantity and quality.<sup>10,11</sup>

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11. National Institute for Health and Care Excellence. Percutaneous intradiscal radiofrequency treatment of the intervertebral disc nucleus for low back pain: Interventional procedures guidance. Published online 2016. [www.nice.org.uk/guidance/ipg545](http://www.nice.org.uk/guidance/ipg545)

# Policy Revision History/Information

| Original Date: December 1, 2023 |            |                                                                                                                                                                               |
|---------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                  |            |                                                                                                                                                                               |
| Version 2                       | 04/26/2024 | Policy criteria reviewed and updated per medical literature.                                                                                                                  |
| Version 3                       | 07/24/2025 | Annual Review<br><br>Added in CPT code 62287 (moved from spinal decompression policy)<br><br>No changes to medical necessity criteria<br><br>Updated Medical Evidence Section |



## **Cohere Medical Policy – Intrathecal Pain Pumps**

*Clinical Policy for Medical Necessity Review*

**Version: 3**

**Cohere Health UMC Approval Date: July 10, 2025**

Last Annual Review: July 10, 2025

Revision: Not Applicable

Next Annual Review: July 10, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Intrathecal Pain Pumps

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)



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# Medical Necessity Criteria

## ***Service: Intrathecal Pain Pumps***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

An intrathecal drug delivery system (IDDS) involves a surgically implanted pump that delivers medication; the system includes a pump, medication reservoir, and catheter. Once programmed, the pump delivers a set amount of medication via a catheter into the intrathecal space of the spinal canal. Intrathecal drug therapies include opioid medications and nonopioid medications (e.g., baclofen, ziconotide, local anesthetics).<sup>1</sup>

## **Medical Necessity Criteria**

### **Indications**

An **intrathecal pain pump** is considered appropriate if **ANY** of the following is **TRUE**:

- Anti-spasmodic drugs (e.g., baclofen) for intractable spasticity with **ALL** of the following<sup>2</sup>:
  - Non-invasive methods of spasm control (e.g., oral anti-spasmodic drugs) are not effective due to **ANY** of the following:
    - Failure to adequately control the spasticity; **OR**
    - Intolerable side effects; **AND**
  - Before pump implantation, the patient must have responded favorably with a 50% improvement of function or spasticity to a trial intrathecal dose of the anti-spasmodic drug; **OR**
- Opioid and non-opioid drugs for the treatment of chronic, intractable pain of malignant or non-malignant origin with **ALL** of the following<sup>1,3-6</sup>:
  - Any drug(s) used to fill the implantable infusion pump must be appropriate for the treatment of the patient's pain condition; **AND**
  - Origin of pain is **ANY** of the following:
    - Malignant with **ALL** of the following:
      - Life expectancy greater than 3 months; **AND**
      - History indicates there was not an adequate response to non-invasive methods of pain control; **OR**
    - Non-malignant and unresponsive to less invasive medical therapy as indicated by **ALL** of the following:
      - Duration of conservative care of greater than 3 months with **ALL** of the following:
        - Physical therapy; **AND**
        - Interventional pain injections if medically appropriate; **AND**
        - Medication including systemic opioids; **AND**

- Evaluation with a multidisciplinary physician team that includes **ALL** of the following:
    - Psychological evaluation by a licensed mental health professional; **AND**
    - Surgery is not indicated; **OR**
- Permanent intrathecal pain pump with **ALL** of the following:
  - Completion of a preliminary trial of intraspinal opioid or non-opioid drug administration with or without a temporary catheter (e.g., intrathecal, epidural); **AND**
  - Evidence of at least 50% potential pain relief with the procedure (e.g., trial); **AND**
  - Minimal side effects and patient tolerance<sup>7,8</sup>; **OR**
- Replacement or revision of a covered device\* is medically necessary with **ANY** of the following:
  - Device is not functioning, and the rationale is documented in the chart (e.g., pump interrogation report, imaging reports, pump flow study); **OR**
  - Device recalled by the manufacturer; **OR**
  - Notification was received from the pump indicating an impending failure.

## Non-Indications

An **intrathecal pain pump** is not considered appropriate if **ANY** of the following is **TRUE**:

- Presence of a known allergy or hypersensitivity to the drug being used (e.g., oral baclofen, morphine, etc.); **OR**
- Active infection<sup>2</sup>; **OR**
- The patient's body size is insufficient to support the weight and bulk of the device<sup>2</sup>; **OR**
- Replacement of a device for **ANY** of the following:
  - The entire implantable infusion system, including the catheter and/or programmer components, at the end of battery life; **OR**
  - Upgrade to newer technology when the current device is functional.

\*NOTE: A covered device includes the device-pump/battery, programmer, catheter, and extensions. Documentation should include which component(s) require replacement.

\*NOTE: If the patient has another implanted programmable device, and due to crosstalk between devices that may inadvertently change the prescription, all devices should be checked for possible crosstalk at the time of implantation of the infusion pump, with appropriate continued surveillance for such interactions.

### **Level of Care Criteria**

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                                                                                                           |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 62323                 | Injection(s), of diagnostic or therapeutic substance(s) (e.g., anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, including needle or catheter placement, interlaminar epidural or subarachnoid, lumbar or sacral (caudal); with imaging guidance (i.e., fluoroscopy or CT)                                        |
| 62324                 | Injection(s), including indwelling catheter placement, continuous infusion or intermittent bolus, of diagnostic or therapeutic substance(s) (e.g., anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, interlaminar epidural or subarachnoid, cervical or thoracic; without imaging guidance                        |
| 62325                 | Injection(s), including indwelling catheter placement, continuous infusion or intermittent bolus, of diagnostic or therapeutic substance(s) (e.g., anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, interlaminar epidural or subarachnoid, cervical or thoracic; with imaging guidance (i.e., fluoroscopy or CT) |
| 62326                 | Injection(s), including indwelling catheter placement, continuous infusion or intermittent bolus,                                                                                                                                                                                                                                                                 |

|       |                                                                                                                                                                                                                                                                                                                                                                        |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | of diagnostic or therapeutic substance(s) (e.g., anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, interlaminar epidural or subarachnoid, lumbar or sacral (caudal); without imaging guidance                                                                                                                          |
| 62327 | Injection(s), including indwelling catheter placement, continuous infusion or intermittent bolus, of diagnostic or therapeutic substance(s) (e.g., anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, interlaminar epidural or subarachnoid, lumbar or sacral (caudal); with imaging guidance (i.e., fluoroscopy or CT) |
| 62350 | Implantation, revision or repositioning of tunneled intrathecal or epidural catheter, for long-term medication administration via an external pump or implantable reservoir/infusion pump; without laminectomy                                                                                                                                                         |
| 62351 | Implantation, revision or repositioning of tunneled intrathecal or epidural catheter, for long-term medication administration via an external pump or implantable reservoir/infusion pump; with laminectomy                                                                                                                                                            |
| 62355 | Removal of previously implanted intrathecal or epidural catheter                                                                                                                                                                                                                                                                                                       |
| 62360 | Implantation or replacement of device for intrathecal or epidural drug infusion; subcutaneous reservoir                                                                                                                                                                                                                                                                |
| 62361 | Implantation or replacement of device for intrathecal or epidural drug infusion; nonprogrammable pump                                                                                                                                                                                                                                                                  |
| 62362 | Implantation or replacement of device for intrathecal or epidural drug infusion; programmable                                                                                                                                                                                                                                                                          |

|       |                                                                                                                                                                                                                                                                                             |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | pump, including preparation of pump, with or without programming                                                                                                                                                                                                                            |
| 62365 | Removal of subcutaneous reservoir or pump, previously implanted for intrathecal or epidural infusion                                                                                                                                                                                        |
| 62367 | Electronic analysis of programmable, implanted pump for intrathecal or epidural drug infusion (includes evaluation of reservoir status, alarm status, drug prescription status); without reprogramming or refill                                                                            |
| 62368 | Electronic analysis of programmable, implanted pump for intrathecal or epidural drug infusion (includes evaluation of reservoir status, alarm status, drug prescription status); with reprogramming                                                                                         |
| 62369 | Electronic analysis of programmable, implanted pump for intrathecal or epidural drug infusion (includes evaluation of reservoir status, alarm status, drug prescription status); with reprogramming and refill                                                                              |
| 62370 | Electronic analysis of programmable, implanted pump for intrathecal or epidural drug infusion (includes evaluation of reservoir status, alarm status, drug prescription status); with reprogramming and refill (requiring skill of a physician or other qualified health care professional) |
| 95990 | Refilling and maintenance of implantable pump or reservoir for drug delivery, spinal (intrathecal, epidural) or brain (intraventricular), includes electronic analysis of pump, when performed;                                                                                             |
| 95991 | Refilling and maintenance of implantable pump or reservoir for drug delivery, spinal (intrathecal,                                                                                                                                                                                          |

|       |                                                                                                                                                                         |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | epidural) or brain (intraventricular), includes electronic analysis of pump, when performed; requiring skill of a physician or other qualified health care professional |
| C1772 | Infusion pump, programmable (implantable)                                                                                                                               |
| C1891 | Infusion pump, non-programmable, permanent (implantable)                                                                                                                |
| C2626 | Infusion pump, non-programmable, temporary (implantable)                                                                                                                |
| E0782 | Infusion pump, implantable, non-programmable (includes all components, e.g., pump, catheter, connectors, etc.)                                                          |
| E0783 | Infusion pump system, implantable, programmable (includes all components, e.g., pump, catheter, connectors, etc.)                                                       |
| E0785 | Implantable intraspinal (epidural/intrathecal) catheter used with implantable infusion pump, replacement                                                                |
| E0786 | Implantable programmable infusion pump, replacement (excludes implantable intraspinal catheter)                                                                         |



# Medical Evidence

Schultz et al. (2021) also analyzed data from the Product Surveillance Registry (PSR). The study included 4646 patients with chronic, non-malignant pain who received a drug delivery system. Adverse events, product performance, and device replacement were discussed. The literature supports the use of drug delivery systems as an option instead of systemic opioids.<sup>4</sup>

Stearns et al. (2020) analyzed data from a prospective, long-term, multicenter registry of patients who received an intrathecal drug delivery system (IDDS) for cancer-related pain. The PSR included 1403 patients with cancer from 2003, when the registry began, through July 2017. Common cancer types were lung, breast, colon/rectal, pancreatic, and prostate. Improved pain levels and higher quality of life scores were demonstrated, including patients with late-stage cancer. Efficacy was demonstrated in randomized controlled clinical trials (RCTs), yet overall utilization is low.<sup>3</sup>

Carvajal et al. (2018) performed an observational study of patients diagnosed with pancreatic cancer; prevalence rates of pain range from 47% to 82%. The Results from 11 years of data were analyzed using an IDDS. A total of 10,300 IDDS days were analyzed. Before IDDS implantation, severe pain was reported (median presurgical numeric rating scale [NRS], 8 [interquartile range, 7-9]) despite receiving a daily dose of oral morphine of 360 mg. Concerning the median overall survival (OS), post-intrathecal treatment initiation was 82 days (95% confidence interval, 59-95). After implant surgery, the median OS was 91 days (83-111) for implanted pumps and 27 days (20-49) for external pumps ( $P < .0001$ ). Patients reported significant pain relief as evidenced by a notable reduction in pain scores at 1 week, 1 month, and 3 months post-implantation ( $P < .001$ ). Severe pain (NRS score  $\geq 7$ ) also decreased from 89.2% before surgery to 4.5% after 1 week, 6.7% after 1 month, and 10.3% after 3 months of IDDS implantation ( $P < .01$ ). Rates of complications were low and aligned with existing literature findings. The authors suggest that a long-term IDDS is effective and safe for managing refractory pancreatic cancer pain.<sup>9</sup>

Aman et al. (2021) emphasized that the American Society of Pain and Neuroscience (ASPN) Best Practices and Guidelines support the interventional management of cancer-associated pain with intrathecal drug delivery systems.<sup>10</sup>

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# Policy Revision History/Information

| Original Date: September 14, 2023 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                    |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Version 2                         | 03/29/2024 | Policy criteria reviewed and updated per medical literature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Version 3                         | 07/10/2025 | <p>Annual review.</p> <p>Clarified the indications to improve usability and organization.</p> <p>Reworded the indications for “anti-spasmodic drugs”.</p> <p>Added an indication for “opioid and non-opioid drugs” for conservative care for non-malignant pain, (“physical therapy, interventional pain injections if medically appropriate, and medication including systemic opioids”).</p> <p>Added an indication for “opioid and non-opioid drugs” for “evaluation with a multidisciplinary physician team,” including a “psychological evaluation by a licensed mental health professional” and when “surgery is not indicated.”</p> <p>Included a note regarding covered devices (device-pump/battery, programmer, catheter, and extensions).</p> <p>Literature review – Medical Evidence section updated (Aman et al., 2021).</p> |



## **Cohere Medical Policy – Knee Arthroplasty**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 6  
**Revision Date:** May 22, 2025

This policy was reviewed by the American Association of Orthopaedic Surgeons (AAOS) prior to publication.

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy - Knee Arthroplasty

**Date of last literature review:** 1/10/2025

**Document last updated:** 5/19/2025

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Knee Arthroplasty***

### **Recommended Clinical Approach**

Total knee arthroplasty (TKA) is the most commonly performed joint replacement procedure in the United States and is expected to increase in frequency in the coming years. During the operation, the damaged bone and cartilage are replaced with a metal and plastic-based prosthesis that can tolerate repetitive motion and wear as the patient ages. TKA can relieve pain, restore function, and improve a patient's quality of life. It may be performed on one or both knees. Opinions differ as to whether bilateral TKA should be performed simultaneously in the same operation, replacing both knees at once, or staged, wherein the knees are replaced during separate procedures. The majority of staged bilateral procedures occur between six months to a year apart.<sup>1-4</sup> Unicompartamental knee arthroplasty (UKA) is an alternative to TKA, which is used to partially replace the knee for individuals whose disease is limited to only one area. Patellofemoral arthroplasty is another type of partial knee arthroplasty, reserved for patients with isolated patellofemoral disease. During partial knee replacements, the healthy parts of the knee are retained, potentially resulting in more natural-feeling motion and function. Importantly, the primary risk of a partial knee replacement is the possibility of eventual total knee arthroplasty, should additional joint and cartilage disease develop in other areas of the knee in the future. Revision or repeat TKA is performed when an initial knee arthroplasty fails or has suboptimal results. This may occur when the components of the knee prosthesis loosen or break, or become infected. A prior TKA may also be revised when bone loss progresses around the prosthetic. In some cases, only a portion of the prosthesis will be replaced, while in others, the entire prosthesis must be removed and replaced, often with specialized implants that provide extra durability and support.<sup>5</sup>



## Medical Necessity Criteria

### Indications

→ A **knee arthroplasty** is considered appropriate if **ANY** of the following is **TRUE**:

- ◆ The procedure is a **primary total knee arthroplasty (TKA)** for advanced joint disease, and **ALL** of the following are **TRUE**<sup>4-6</sup>:
  - Imaging confirms **ANY** of the following<sup>7-8</sup>:
    - Joint space narrowing (less than 50%) and marginal osteophytes or subchondral sclerosis; **OR**
    - Joint space narrowing (greater than 50%); **OR**
    - Complete joint space loss; **OR**
    - Avascular necrosis; **OR**
    - Failed previous unicompartmental joint replacement;**AND**
- Pain or functional disability<sup>4-8</sup>; **AND**
- **ANY** of the following<sup>4-8</sup>:
  - Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - ◆ Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - ◆ Physical therapy or physician-directed exercise program; **AND**
    - ◆ **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Documentation that corticosteroid injection is contraindicated; **AND**
    - ◆ **ANY** of the following:
      - Weight reduction if BMI is greater than 40<sup>17,18</sup>; **OR**
      - Documentation of attempted weight loss or weight loss counseling if BMI is greater than 40<sup>17,18</sup>; **OR**
      - Weight loss not applicable (BMI less than 40)<sup>17,18</sup>; **OR**

- Documentation indicating that conservative, non-surgical management would be ineffective or counterproductive based on **ANY** of the following<sup>4-8</sup>:
  - ◆ Intractable pain or significant disabling interference with activities of daily living (ADLs); **OR**
  - ◆ Bone-on-bone articulation; **OR**
  - ◆ Severe deformity; **OR**
  - ◆ Failure of a previous osteotomy; **OR**
  - ◆ Distal femur fracture; **OR**
  - ◆ Malignancy of **ANY** of the following:
    - Distal femur; **OR**
    - Proximal tibia; **OR**
    - Knee joint or adjacent soft tissues; **OR**
  - ◆ Failure of previous unicompartmental knee replacement; **OR**
  - ◆ Avascular necrosis of the knee; **OR**
  - ◆ Proximal tibia fracture; **OR**
- ◆ The procedure is a **repeat or revision TKA**, and **ANY** of the following is **TRUE**<sup>14,19-27</sup>:
  - Loosening of one or more components; **OR**
  - Fracture or mechanical failure of one or more components; **OR**
  - Infection; **OR**
  - Treatment of periprosthetic fracture of distal femur, proximal tibia, or patella; **OR**
  - Progressive or substantial periprosthetic bone loss; **OR**
  - Bearing surface wear leading to symptomatic synovitis; **OR**
  - Implant or knee misalignment; **OR**
  - Knee stiffness (arthrofibrosis); **OR**
  - Tibiofemoral instability; **OR**
  - Extensor mechanism instability or disruption; **OR**
  - Dislocation of the knee joint; **OR**
- ◆ The procedure is a **unicompartmental knee arthroplasty** and **ANY** of the following is **TRUE**<sup>7-9</sup>:
  - Unicompartmental knee degenerative joint disease and **ALL** of the following are **TRUE**<sup>7</sup>:
    - Disabling pain and/or functional disability that limits ADLs; **AND**

- **ANY** of the following:
  - ◆ Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy or physician-directed exercise program; **AND**
    - **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Documentation that corticosteroid injection is contraindicated; **AND**
    - **ANY** of the following:
      - Weight reduction if BMI is greater than 40<sup>L7,18</sup>; **OR**
      - Documentation of attempted weight loss or weight loss counseling if BMI is greater than 40<sup>L7,18</sup>; **OR**
      - Weight loss not applicable (BMI less than 40)<sup>L7,18</sup>; **OR**
  - ◆ Documentation indicating that conservative, non-surgical management would be ineffective or counterproductive based on **ANY** of the following<sup>4-8</sup>:
    - Intractable pain or significant disabling interference with activities of daily living (ADLs); **OR**
    - Bone-on-bone articulation in one compartment; **OR**
    - Severe deformity; **OR**
    - Failure of a previous osteotomy; **OR**
    - Malignancy of knee joint or adjacent soft tissues; **OR**
    - Avascular necrosis of the knee; **AND**

- Weight-bearing radiograph shows **ANY** of the following evidence of osteoarthritis in a single compartment of the knee:
  - ◆ Joint space narrowing (less than 50%) and marginal osteophytes or subchondral sclerosis; **OR**
  - ◆ Joint space narrowing (greater than 50%); **OR**
  - Unicompartamental osteonecrosis<sup>7-9</sup>; **OR**
  - Unicompartamental post-traumatic joint destruction<sup>7-9</sup>; **OR**
  - Partial resection of the knee needed for treatment of malignancy<sup>7-9</sup>; **OR**
- ◆ The procedure is a **patellofemoral arthroplasty** and **ANY** of the following is **TRUE**<sup>10-11</sup>:
  - Knee patellofemoral degenerative joint disease and **ALL** of the following are **TRUE**<sup>10-11</sup>:
    - Isolated pain in the front of the knee; **AND**
    - Disabling pain and/or functional disability limit ADLs; **AND**
    - **ANY** of the following:
      - ◆ Failure of conservative management for greater than 3 months, including **ALL** of the following:
        - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
        - Physical therapy or physician-directed exercise program; **AND**
        - **ANY** of the following:
          - Corticosteroid injection if medically appropriate; **OR**
          - Documentation that corticosteroid injection is contraindicated; **AND**
        - **ANY** of the following:
          - Weight reduction if BMI is greater than 40<sup>17,18</sup>; **OR**
          - Documentation of attempted weight loss or weight loss

- counseling if BMI is greater than 40<sup>17,18</sup>; **OR**
  - Weight loss not applicable (BMI less than 40)<sup>17,18</sup>; **OR**
- ◆ Documentation indicating that conservative, non-surgical management would be ineffective or counterproductive based on **ANY** of the following<sup>4-8</sup>:
  - Intractable pain or significant disabling interference with activities of daily living (ADLs); **OR**
  - Bone-on-bone articulation in the patellofemoral compartment; **OR**
  - Severe deformity; **OR**
  - Failure of a previous osteotomy; **OR**
  - Malignancy of knee joint or adjacent soft tissues; **AND**
  - Weight-bearing radiograph and Merchant view show **ANY** of the following evidence of osteoarthritis in the patellofemoral compartment:
    - ◆ Joint space narrowing (less than 50%) and marginal osteophytes or subchondral sclerosis; **OR**
    - ◆ Joint space narrowing (greater than 50%); **OR**
    - ◆ Complete joint space loss; **OR**
  - Patellofemoral post-traumatic destruction (e.g., history of patella fracture)<sup>10-11</sup>; **OR**
  - Dysplasia of the trochlea.<sup>10-11</sup>

## Non-Indications

→ A **knee arthroplasty** is not considered appropriate if **ANY** of the following is **TRUE**<sup>1-12</sup>:

- ◆ Skeletal immaturity; **OR**
- ◆ Active infection of the knee joint or active systemic bacteremia; **OR**
- ◆ Active urinary tract or dental infection; **OR**
- ◆ Active skin infection (except recurrent cutaneous staph infections) or open wound within the planned surgical site of the knee; **OR**

- ◆ Rapidly progressive neurological disease; **OR**
- ◆ Any process that is rapidly destroying bone; **OR**
- ◆ Neurotrophic arthritis; **OR**
- ◆ If the procedure is a unicompartmental knee arthroplasty and **ANY** of the following is **TRUE**:
  - Severe patellofemoral osteoarthritis <sup>12</sup>; **OR**
  - Flexion contracture greater than 10 degrees<sup>13</sup>; **OR**
  - More than 10 degrees of fixed varus or valgus without plan to address; **OR**
  - Diagnosis of inflammatory arthritis<sup>12</sup>; **OR**
  - Ligamentous instability without plan to address; **OR**
- ◆ If the procedure is a patellofemoral knee arthroplasty and **ANY** of the following is **TRUE**<sup>11</sup>:
  - Radiographic evidence of tibiofemoral osteoarthritis; **OR**
  - Fixed flexion contracture greater than 10 degrees; **OR**
  - Uncorrected patellofemoral malalignment or instability; **OR**
  - Diagnosis of inflammatory arthritis.

### Level of Care Criteria

Inpatient or Outpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                    |
|----------------|-----------------------------------------------------------------------------------------------------|
| 27437          | Arthroplasty, patella; without prosthesis                                                           |
| 27438          | Arthroplasty, patella; with prosthesis                                                              |
| 27440          | Arthroplasty, knee, tibial plateau                                                                  |
| 27441          | Arthroplasty, knee, tibial plateau; with debridement and partial synovectomy                        |
| 27442          | Arthroplasty, femoral condyles or tibial plateau(s), knee                                           |
| 27443          | Arthroplasty, femoral condyles or tibial plateau(s), knee; with debridement and partial synovectomy |
| 27445          | Arthroplasty, knee, hinge prosthesis (e.g., Walldius                                                |

|       |                                                                                                                                        |
|-------|----------------------------------------------------------------------------------------------------------------------------------------|
|       | type)                                                                                                                                  |
| 27446 | Arthroplasty, knee, condyle and plateau; medial OR lateral compartment                                                                 |
| 27447 | Arthroplasty, knee, condyle and plateau; medial AND lateral compartments with or without patella resurfacing (total knee arthroplasty) |
| 27486 | Revision of total knee arthroplasty, with or without allograft; 1 component                                                            |
| 27487 | Revision of total knee arthroplasty, with or without allograft; femoral and entire tibial component                                    |
| 27488 | Removal of prosthesis, including total knee prosthesis, methylmethacrylate with or without insertion of spacer, knee                   |
| 27599 | Unlisted procedure, femur or knee                                                                                                      |

## Medical Evidence

Bin et al. (2023) performed a meta-analysis of 17 randomized controlled trials (RCTs) to compare surgical interventions for knee osteoarthritis, including total knee arthroplasty (TKA), unicompartmental knee arthroplasty (UKA), high tibial osteotomy (HTO), bicompartamental knee arthroplasty (BCA), bi-unicompartmental knee arthroplasty (BIU), and knee joint distraction (KJD). The authors analyzed 21 studies (including 17 RCTs) on surgical complications, revisions, reoperations, and functional outcomes. Overall, TKA and UKA offered the best outcomes in the treatment of osteoarthritis.<sup>14</sup>

Papakostidis et al. (2021) analyzed serious adverse events (SAEs) following TKA. The authors noted a reduction in SAEs over the last decade, specifically emphasizing the decrease in surgical complications, venous thromboembolism (VTE) events, and infections. These improvements have resulted from stricter protocols for VTE prevention, patient decolonization procedures, surgical air quality optimization, preoperative cardiac clearance, diabetic control, and participation in weight reduction programs.<sup>15</sup>

Shichman et al. (2023) analyzed data from the Centers for Medicare & Medicaid Services (CMS) Medicare/Medicaid Part B National Summary and the number of procedures based on Current Procedural Terminology (CPT) codes. The codes were separated into primary total hip arthroplasty (THA) or total knee arthroplasty (TKA). A total of 480,958 primary TKA were performed in 2019. The values were a baseline for producing point forecasts for procedures expected to be performed between 2020–2060 and 95% forecast intervals (FIs). From 2000 to 2019, TKA increased annually by 156%. Regression analysis predicts annual growth rates of 4.44% for TKA – an expected increase of 24.28% for TKA every five years post-2020. By 2040, TKAs are expected to be 1,222,988. That number will increase to 2,917,959 for TKAs by 2060. The authors note that by 2040, the number of TKAs is projected to rise by 139% by 2040 and 469% by 2060. Accurately projecting future arthroplasty needs is crucial for understanding future healthcare utilization and surgeon demand. The findings are specific to the Medicare population; additional analysis is required to determine if other groups apply.<sup>16</sup>



Unicompartmental knee arthroplasty has been traditionally considered for elderly patients because of its relatively shorter rehabilitation period, smaller incision, and preservation of range of motion and function. However, a large study of 11-year knee survivorship among patients less than 60 years old found a 92% rate of survivorship; a similar study of elderly patients undergoing cemented UKA found a 10-year survivorship of 98%.<sup>5</sup> Patellofemoral arthroplasty necessitates careful patient selection, as evidenced by risk of subsequent revision to TKA – most commonly resultant from progressive tibiofemoral arthritis. The current body of research also suggests a higher rate of revision to TKA among obese patients, with knee survivorship and rate of satisfactory results generally lower than primary TKA.<sup>5</sup> Revision rates of knee arthroplasty are low, as most primary implants are both well-tolerated and durable. As the field has evolved, the most common etiologies prompting revision are now infection and instability, rather than bone destruction or mechanical loosening. Clinical outcomes of revision TKA are less favorable than primary TKA, and 5-year follow-up satisfaction rates have been reported up to 74%, versus primary TKA satisfaction approaching 100%.<sup>5</sup>

The American Academy of Orthopaedic Surgeons (AAOS) has issued position statements pertaining to knee arthroplasty. Information statement 1047, published in 2016, acknowledges the increased patient safety risks conferred by tobacco use – including pneumonia, impeded healing, surgical site infection, postoperative cardiopulmonary events, and death.<sup>39</sup> The AAOS states that patients who are active smokers may reduce these risks through cessation of smoking prior to surgery; they also note the special role orthopaedic surgeons play in counseling patients on the benefits of reduced or eliminated tobacco use prior to surgery.<sup>39</sup> Importantly, unconfirmed cessation is not endorsed as a hard stop to surgery; rather, the surgeon's unique role as an advocate for preoperative smoking cessation is emphasized.<sup>39</sup> Statements 1040 and 1184 discuss the impact of obesity on musculoskeletal conditions.<sup>17,18</sup> Statement 1184 endorses the importance of continued patient-surgeon conversation around the increased surgical risks associated with obesity, including increased complications and rates of hardware failure following knee replacement. Patients with morbid obesity (BMI of 40 or above) are encouraged to participate in a weight loss program, obtain weight reduction resources through their physician, rectify nutritional deficiencies, and consider a delay in surgical treatment if it would facilitate

participation in weight loss interventions that may improve surgical outcomes. Statement 1040 reinforces the risks associated with obesity and total joint arthroplasty and encourages adequate patient counseling prior to surgery.<sup>[17,18](#)</sup> Social determinants of health remain an important area of ongoing orthopaedic surgery research, with recent literature raising questions regarding the healthcare disparities that may be potentiated by care limitations based on obesity and smoking status/nicotine dependence.<sup>[29-31,35-38](#)</sup> Other ongoing research interrogates the impacts that biological sex, race, and socioeconomic status have on TKA utilization and outcomes.<sup>[32-34](#)</sup>

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# Clinical Guideline Revision History/Information

| Original Date: December 9, 2020 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                  |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Version 2                       | 10/23/2023 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Version 3                       | 11/17/2023 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Version 4                       | 9/20/2024  | <ul style="list-style-type: none"> <li>Updated language regarding conservative treatment.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Version 5                       | 2/20/2025  | <p>Annual policy review and restructure:</p> <ul style="list-style-type: none"> <li>Updated recommended clinical approach to the current format.</li> <li>Added descriptions of UKA, patellofemoral arthroplasty, and revision TKA to recommended clinical approach and medical evidence sections.</li> <li>Medical evidence section and references updated to reflect the current literature.</li> <li>Replaced reference 4 with a more relevant, recent reference.</li> <li>Changed “initial TKA” to “primary TKA”.</li> <li>Added weight loss counseling as an option (in addition to documented attempted weight loss) for patients with BMI above 40.</li> <li>Wordsmithed indications for clarity.</li> <li>Removed non-indication of “insufficiency of extensor mechanism/quadriceps” as it is not an absolute contraindication.</li> <li>Removed “joint subluxation” indication per MD feedback.</li> <li>Loosened description of patellofemoral osteoarthritis to better reflect clinical presentation.</li> <li>Added non-indication: “ligamentous instability without plan to address” per MD feedback.</li> </ul> |

|           |           |                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           | <ul style="list-style-type: none"> <li>• Updated conservative care to current internal standard language and provided avenue for approval of UKA/PFA for scenario wherein conservative care is inappropriate or harmful.</li> <li>• Conservative care language modified to reflect non-opioid pain control.</li> <li>• Modified steroid injection language for clarity.</li> </ul> |
| Version 6 | 5/22/2025 | <p>Added CPT code: 27488. No associated criteria change.</p> <p>Removal of “disabling pain, functional disability” as revision indications due to concern for inappropriate approval.</p>                                                                                                                                                                                          |





## **Cohere Medical Policy – Knee Arthroscopy**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 7  
**Revision Date:** May 22, 2025

# Important Notices

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## Guideline Information:

**Specialty Area:** Diseases & Disorders of the Musculoskeletal System (M00-M99)

**Guideline Name:** Knee Arthroscopy (Single Service)

**Literature review current through:** 2/24/2025

**Document last updated:** 5/19/2025

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Knee Arthroscopy***

### **Recommended Clinical Approach**

Knee arthroscopy is a minimally invasive method of visualizing and treating the knee joint. It is the standard treatment for the removal of inflamed synovial tissue, loose fragments of bone or cartilage, and resecting the damaged meniscus. The procedure may also be performed to trim or reconstruct damaged articular cartilage, as well as to reconstruct a torn anterior cruciate ligament (ACL) or posterior cruciate ligament (PCL). Knee arthroscopy is additionally performed to treat knee sepsis and issues related to the patella, such as chondromalacia patella. Osteochondritis dissecans, a condition in which a portion of bone and the cartilage covering it begins to separate from the joint, may be treated and evaluated arthroscopically. As an alternative to more invasive open procedures, knee arthroscopy is well-tolerated, safe, and leads to improved quality of life and function.<sup>1-7</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ **Knee arthroscopy** is considered appropriate if **ANY** of the following is **TRUE**:

◆ **Intraarticular joint pathology evaluation, lateral retinacular release, or synovectomy/plica resection** when **ALL** of the following are **TRUE**<sup>8-12</sup>:

- **ANY** of the following
  - Chronic knee pain and **ALL** of the following are **TRUE**:
    - ◆ Unknown etiology of symptoms; **AND**
    - ◆ Imaging does not yield definitive results; **AND**
    - ◆ Diagnostic arthrocentesis with synovial fluid analysis when **ANY** of the following is **TRUE**:
      - Nondiagnostic; **OR**
      - Not indicated; **OR**
  - Symptoms of locking, catching, and giving way; **OR**

- A loose body on imaging; **OR**
- Patellofemoral instability; **OR**
- Abnormal patellar tracking; **OR**
- Patellar compression syndrome; **OR**
- Inflammatory (e.g., rheumatoid arthritis, psoriatic arthritis, Lyme arthritis) arthritis; **OR**
- Benign tumor/neoplastic disorders (osteochondromatosis, tenosynovial giant cell tumor [pigmented villonodular synovitis – PVNS], synovial hemangioma, and recurrent hemarthrosis)<sup>13</sup>; **OR**
- Recurrent effusion<sup>14</sup>; **OR**
- Plica syndrome<sup>14</sup>; **OR**
- Hemophilic joint disease<sup>15</sup>; **OR**
- Lipoma arborescens (synovial lipomatosis)<sup>14</sup>; **AND**
- **ANY** of the following:
  - Conservative management does not apply – tenosynovial giant cell tumor (pigmented villonodular synovitis [PVNS]) or other pathologic synovial processes; **OR**
  - Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - ◆ Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - ◆ Physical therapy or physician-directed exercise program; **AND**
    - ◆ Bracing if medically appropriate; **AND**
    - ◆ **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Documentation that corticosteroid injection is contraindicated; **OR**
- ◆ **Debridement, lysis, drainage, or lavage** when **ALL** of the following are **TRUE**<sup>8</sup>:
  - **ANY** of the following:
    - Infected joint (septic arthritis)<sup>9,10</sup>; **OR**
    - A foreign body on imaging (e.g., hardware); **AND**

- The patient has **ANY** of the following conditions:
  - Nonoperative care does not apply (infected joint; symptoms of locking, catching, giving way); **OR**
  - Focal articular cartilage lesion (less than 4 cm<sup>2</sup>) with **ALL** of the following<sup>2,16,17</sup>:
    - ◆ Symptoms that are related to chondral injury; **AND**
    - ◆ Absence of advanced osteoarthritis; **AND**
    - ◆ Nonoperative care (e.g., anti-inflammatory medications, analgesics, physical therapy, bracing) has been attempted and failed; **OR**
  - Arthrofibrosis (e.g., after prior surgical procedure or trauma), as indicated by **ALL** of the following<sup>2</sup>:
    - ◆ Loss of range of motion; **AND**
    - ◆ Nonoperative care (e.g., physical therapy, manipulation under anesthesia) has been attempted and failed for at least 6 weeks; **OR**
- ◆ **Ligament injury (ACL, PCL, LCL)** when **ALL** of the following are **TRUE**<sup>8,18-22</sup>:
  - Absence of advanced arthritis; **AND**
  - Limited activities of daily living (ADLs) due to pain and instability; **AND**
  - **ANY** of the following:
    - Presence of anterior cruciate ligament (ACL) tear; **OR**
    - Presence of posterior cruciate ligament (PCL) tear; **OR**
    - Presence of lateral collateral (fibular) ligament (LCL) tear; **OR**
    - Presence of posterolateral corner (PLC) of the knee is injured; **AND**
  - **ANY** of the following:
    - Decrease in swelling with improvement in range of motion since initial injury; **OR**
    - Clinically urgent injury for which ROM restoration would not be feasible prior to surgery; **AND**
  - Treatment is indicated for **ANY** of the following reasons:
    - Acute tear or injury; **OR**
    - Chronic injury associated with meniscal tear; **OR**
    - Concurrent with injury of **ANY** of the following:

- ◆ Concomitant MCL/PCL/ACL/PLC/LCL injury; **OR**
- ◆ Concomitant avulsion fracture; **OR**
- ◆ Posterolateral corner of the knee is injured; **OR**
- ◆ Tibial displacement of more than 8mm is demonstrated on stress radiographs; **OR**
- ◆ Anterolateral ligament injury in conjunction with ACL injury; **OR**
- Chronic injury with **ANY** of the following:
  - ◆ Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy or physician-directed exercise program; **AND**
    - **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Documentation that corticosteroid injection is contraindicated; **OR**
  - ◆ Persistent instability such that surgical treatment recommended; **OR**
- ◆ **Treatment of osteochondral defect (e.g., osteochondritis dissecans)** when **ALL** of the following are **TRUE**<sup>23,24</sup>:
  - Plain radiograph or advanced imaging demonstrates an osteochondral defect; **AND**
  - Patient has **ANY** of the following:
    - Symptoms attributable to the osteochondral defect; **OR**
    - Acute traumatic injury resulting in osteochondral defect; **OR**
- ◆ **Autologous chondrocyte implantation (ACI)** when **ALL** of the following are **TRUE**<sup>3,8</sup>:
  - The patient has knee symptoms (e.g. pain, swelling, mechanical) or functional compromise; **AND**

- Chondral lesion between 2 cm and 4 cm; **AND**
- 12 years or older; **OR**
- ◆ **Treatment of torn meniscus** when **ANY** of the following is **TRUE**<sup>1,25-33</sup>:
  - **Partial meniscectomy** when **ANY** of the following is **TRUE**:
    - The tear is an acute tear due to injury or trauma, or a recurrent or failed prior repair, and **ALL** of the following are **TRUE**:
      - ◆ Advanced imaging demonstrates a meniscal tear; **AND**
      - ◆ Acute, painful knee with exam consistent with MRI finding of tear; **AND**
      - ◆ Persistent mechanical symptoms; **OR**
    - The tear is a chronic (degenerative) tear and **ALL** of the following are **TRUE**:
      - ◆ Advanced imaging demonstrates a meniscal tear; **AND**
      - ◆ Persistent mechanical symptoms; **AND**
      - ◆ Knee pain with exam consistent with MRI finding of meniscal tear; **AND**
      - ◆ Failure of conservative management for greater than 3 months with degenerative tears and minimal osteoarthritis, including **ALL** of the following:
        - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
        - Physical therapy or physician-directed exercise program; **AND**
        - Activity modification; **AND**
        - **ANY** of the following:
          - Corticosteroid injection if medically appropriate; **OR**
          - Documentation that corticosteroid injection is contraindicated; **OR**
  - **Meniscus repair** when **ALL** of the following are **TRUE**:



- The patient has mechanical symptoms following an acute injury; **AND**
- The patient has a meniscal tear on advanced imaging findings or a failed prior repair; **OR**
- **Meniscus allograft transplantation** is considered appropriate if **ALL** of the following are **TRUE**<sup>8</sup>:
  - Significant portion of the meniscus is absent due to either prior meniscectomy or prior injury; **AND**
  - Persistent pain or impaired function with activity; **AND**
  - Age 50 years or younger; **AND**
  - Symptoms are localized to the tibiofemoral compartment; **AND**
  - No evidence of advanced arthrosis; **AND**
  - Over 50% joint space remaining; **OR**
- ◆ **Arthroscopic management of fractures** when **ANY** of the following are **TRUE**<sup>8</sup>:
  - Fracture of the anterior intercondylar eminence of the tibia; **OR**
  - Other fracture pattern that would benefit from arthroscopically-assisted fracture reduction.

## Non-Indications

→ **Knee arthroscopy** is not considered appropriate if **ANY** of the following is **TRUE**<sup>8</sup>:

- ◆ Osteoarthritis of the knee that is moderate or severe (or KL [Kellgren-Lawrence] grade III or grade IV)<sup>25,27,30</sup>; **OR**
- ◆ Active infection at the surgical site (unless arthroscopy is indicated for surgical management of infection); **OR**
- ◆ The procedure is a meniscus allograft transplantation for **ANY** of the following:
  - Inflammatory arthropathy; **OR**
  - Malalignment or instability that is not being corrected at the time of the meniscal allograft surgery **OR**
  - Irreparable/untreatable chondral damage.

## Level of Care Criteria

Inpatient or Outpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                                                                                                 |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27405          | Repair, primary, torn ligament and/or capsule, knee; collateral                                                                                                                                  |
| 27407          | Repair, primary, torn ligament and/or capsule, knee; cruciate                                                                                                                                    |
| 27409          | Repair, primary, torn ligament and/or capsule, knee; collateral and cruciate ligaments                                                                                                           |
| 27412          | Autologous chondrocyte implantation, knee                                                                                                                                                        |
| 27427          | Ligamentous reconstruction (augmentation), knee; extra-articular                                                                                                                                 |
| 27599          | Unlisted procedure, femur or knee                                                                                                                                                                |
| 29850          | Arthroscopically aided treatment of intercondylar spine(s) and/or tuberosity fracture(s) of the knee, with or without manipulation; without internal or external fixation (includes arthroscopy) |
| 29851          | Arthroscopically aided treatment of intercondylar spine(s) and/or tuberosity fracture(s) of the knee, with or without manipulation; with internal or external fixation (includes arthroscopy)    |
| 29855          | Arthroscopically aided treatment of tibial fracture, proximal (plateau); unicondylar, includes internal fixation, when performed (includes arthroscopy)                                          |
| 29856          | Arthroscopically aided treatment of tibial fracture, proximal (plateau); bicondylar, includes internal fixation, when performed (includes arthroscopy)                                           |
| 29866          | Arthroscopy, knee, surgical; osteochondral autograft(s) (e.g., mosaicplasty) (includes harvesting of autograft[s])                                                                               |

|       |                                                                                                                                                                                                                           |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 29867 | Arthroscopy, knee, surgical; osteochondral allograft (e.g., mosaicplasty)                                                                                                                                                 |
| 29868 | Arthroscopy, knee, surgical; meniscal transplantation (includes arthrotomy for meniscal insertion), medial or lateral                                                                                                     |
| 29870 | Arthroscopy, knee, diagnostic, with or without synovial biopsy (separate procedure)                                                                                                                                       |
| 29871 | Arthroscopy, knee, surgical; for infection, lavage and drainage                                                                                                                                                           |
| 29873 | Arthroscopy, knee, surgical; with lateral release                                                                                                                                                                         |
| 29874 | Arthroscopy, knee, surgical; for removal of loose body or foreign body (e.g., osteochondritis dissecans fragmentation, chondral fragmentation)                                                                            |
| 29875 | Arthroscopy, knee, surgical; synovectomy, limited (e.g., plica or shelf resection) (separate procedure)                                                                                                                   |
| 29876 | Arthroscopy, knee, surgical; synovectomy, major, 2 or more compartments (e.g., medial or lateral)                                                                                                                         |
| 29877 | Arthroscopy, knee, surgical; debridement/shaving of articular cartilage (chondroplasty)                                                                                                                                   |
| 29879 | Arthroscopy, knee, surgical; abrasion arthroplasty (includes chondroplasty where necessary) or multiple drilling or microfracture                                                                                         |
| 29880 | Arthroscopy, knee, surgical; with meniscectomy (medial AND lateral, including any meniscal shaving) including debridement/shaving of articular cartilage (chondroplasty), same or separate compartment(s), when performed |
| 29881 | Arthroscopy, knee, surgical; with meniscectomy (medial OR lateral, including any meniscal shaving) including debridement/shaving of articular cartilage (chondroplasty), same or separate compartment(s), when performed  |
| 29882 | Arthroscopy, knee, surgical; with meniscus repair (medial OR lateral)                                                                                                                                                     |

|       |                                                                                                                                                                     |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 29883 | Arthroscopy, knee, surgical; with meniscus repair (medial AND lateral)                                                                                              |
| 29884 | Arthroscopy, knee, surgical; with lysis of adhesions, with or without manipulation (separate procedure)                                                             |
| 29885 | Arthroscopy, knee, surgical; drilling for osteochondritis dissecans with bone grafting, with or without internal fixation (including debridement of base of lesion) |
| 29886 | Arthroscopy, knee, surgical; drilling for intact osteochondritis dissecans lesion                                                                                   |
| 29887 | Arthroscopy, knee, surgical; drilling for intact osteochondritis dissecans lesion with internal fixation                                                            |
| 29888 | Arthroscopically aided anterior cruciate ligament repair/augmentation or reconstruction                                                                             |
| 29889 | Arthroscopically aided posterior cruciate ligament repair/augmentation or reconstruction                                                                            |
| 29999 | Unlisted procedure, arthroscopy                                                                                                                                     |
| J7330 | Cultured chondrocytes implant                                                                                                                                       |
| S2112 | Knee arthroscopy harvest                                                                                                                                            |

## Medical Evidence

In a 2022 Cochrane Review, O'Connor et al. reviewed the literature to determine the efficacy of arthroscopic knee surgery for the treatment of symptomatic knee osteoarthritis, including for degenerative meniscal tears. While current guidelines discourage the use of the procedure for these indications, it is still performed with some regularity. The review analyzed benefits and harms (e.g., debridement, partial meniscectomy, or both) when compared to non-surgical interventions (e.g., physical therapy, exercise, intra-articular glucocorticoid injections, non-arthroscopic lavage, non-steroidal anti-inflammatory drugs, hyaluronic acid injections) or placebo surgery. Sixteen trials were included, representing randomized controlled trials (RCTs) and quasi-randomized trials. A total of 2105 patients (age range 46 to 65 years; 56% women) met the inclusion criteria. The authors affirmed that arthroscopic surgery is not recommended for patients with symptomatic degenerative knee disease as the evidence does not demonstrate clinically significant improvements in pain, function, or quality of life. In addition, arthroscopy may advance the progression of knee osteoarthritis and may result in earlier or additional surgery (e.g., knee arthroplasty, osteotomy).<sup>1</sup>

A 2024 publication by Sonesson et al. examined the 10-year outcomes among 150 middle-aged patients with meniscal symptoms who were randomized to either nonsurgical or surgical management. At the time of follow-up, the 142 surviving patients were evaluated for radiographic presence of osteoarthritis, as well as symptoms of osteoarthritis. The authors found that patient-reported outcomes were similar between cohorts and, given the short-term benefit and lack of long-term harm of knee arthroscopy, endorsed it as a first-line treatment for meniscal pathology after a failed trial of conservative care for a minimum of three months.<sup>34</sup>

The Academy of Orthopaedic Surgeons (AAOS) has published four clinical guidelines to direct the management of patients with disease and damage of the knee that may be treated with arthroscopy. *Diagnosis and Treatment of Osteochondritis Dissecans* was published in 2023.<sup>24</sup> Therein, two recommendations, classified as limited in strength, were made regarding the surgical management of osteochondritis dissecans. The authors noted that the current body of evidence is insufficient to make a recommendation for or

against surgical intervention for both adult and pediatric patients. They cite the associated benefits and risks for nonoperative and operative treatment and ultimately opine, as a workgroup, that patients should be given the option of undergoing surgery. *Management of Acute Meniscal Pathology* was adopted in 2024, although the workgroup notes that current evidence is insufficient to establish strong recommendations.<sup>33</sup> Importantly, a moderate-strength recommendation is made regarding the preservation of meniscal tissue during surgical intervention in order to reduce the future risk of osteoarthritis. The authors opine that patients with a displaced acute meniscal tear or a symptomatic acute meniscal tear would benefit from early surgical intervention. Elsewhere in the guideline, the authors recommend surgical treatment of acute meniscal tears within six months of injury after failed conservative treatment, although this guidance was limited in strength and based on low-quality evidence. The workgroup advocates for future research in this area to allow for improved recommendations to be made in the future. *Management of Anterior Cruciate Ligament Injuries* was published in 2022.<sup>19</sup> The AAOS recommends operative treatment of ACL injuries in select patients. Early reconstruction for patients with acute isolated ACL tears is recommended due to the increased risk profile (potential chondral injury, meniscal injury) beyond 3 months. In general, ACL reconstruction was endorsed over ACL repair due to the higher risk of revision surgery after ACL repair. ACL reconstruction was characterized as the standard of care for primary ACL injury. Both recommendations were categorized as strong and were based on evidence that was rated as high-quality.<sup>19</sup> *Management of Osteoarthritis of the Knee (Non-Arthroplasty)* was adopted in 2021. In this guideline, the AAOS does not recommend arthroscopy with lavage and/or debridement for primary knee osteoarthritis. Among patients with meniscal tears and concomitant mild to moderate osteoarthritis, arthroscopic partial meniscectomy may be necessary when conservative treatment (e.g., physical therapy) has been unsuccessful. Both recommendations were made with moderate strength.<sup>25</sup>

The AAOS has also issued position statements pertaining to knee arthroscopy. Information statement 1047, published in 2016, acknowledges the increased patient safety risks conferred by tobacco use – including increased ventilatory support, myocardial infarction, cardiac arrest, cerebrovascular accident, sepsis, and death.<sup>35</sup> The AAOS states that patients who are active smokers may reduce these risks through cessation of smoking prior to

surgery; they also note the special role orthopaedic surgeons play in counseling patients on the benefits of reduced or eliminated tobacco use before surgery. Importantly, unconfirmed cessation is not endorsed as a hard stop to surgery; rather, the surgeon's unique role as an advocate for preoperative smoking cessation is emphasized. Statements 1040 and 1184 discuss the impact of obesity on musculoskeletal conditions.<sup>36,37</sup> Patients with morbid obesity (BMI of 40 or above) are encouraged to participate in a weight loss program, obtain weight reduction resources through their physician, rectify nutritional deficiencies, and consider a delay in surgical treatment if it would facilitate participation in weight loss interventions that may improve surgical outcomes. Statement 1040 notes that individuals with obesity face an increased risk for sports injuries and that when such injuries are treated arthroscopically, the procedure may be more technically difficult because of the loss of superficial landmarks.<sup>36</sup> Questions remain as to whether functional results are affected by obesity. Further, the authors note the risks associated with general anesthesia for patients with obesity and emphasize the importance of adequate patient positioning and padding to avoid pressure ulcers, nerve palsies, and compartment syndromes, which are more common among obese patients. In general, obesity is associated with a greater risk of premature complications and mortality during the perioperative period. The AAOS endorses compassionate, risk-informed patient counseling for obese patients who are considering surgery. Careful screening and appropriate referral to nutrition or endocrine care is also endorsed. Statement 1184 reinforces the risks associated with obesity in the setting of orthopaedic care and similarly encourages adequate patient counseling prior to surgery.<sup>37</sup>

Social determinants of health remain an important area of ongoing orthopaedic surgery research, with recent literature raising questions regarding the healthcare disparities that may be potentiated by care limitations based on obesity and smoking status/nicotine dependence.<sup>38-44</sup> Other ongoing research interrogates the impacts that biological sex, race, and socioeconomic status have on knee arthroscopy utilization and outcomes.<sup>45-53</sup>

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# Clinical Guideline Revision History/Information

| Original Date: March 20, 2023 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Version 2                     | 10/13/2023 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Version 3                     | 12/1/2023  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Version 4                     | 5/30/2024  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Version 5                     | 9/20/2024  | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Version 6                     | 4/17/2025  | <p>Annual policy review &amp; restructure:</p> <ul style="list-style-type: none"> <li>• Removed requirement for “young, active patient” for medial or lateral meniscal tears</li> <li>• Permitted osteochondritis dissecans to be visualized on plain radiograph per professional society guideline</li> <li>• Removed qualifier for “due to patient's occupation” on ACL reconstruction per professional society guidelines</li> <li>• Removed requirement for conservative management of greater than 3 months for ACL tear per professional society guidelines</li> <li>• Modified indications for meniscus allograft transplantation for clarity and to better reflect the referenced source</li> <li>• Removed redundant synovectomy indication for Lyme arthritis, which was already captured in prior indication</li> <li>• Removed redundant synovectomy indication for tenosynovial giant cell tumor, which was already captured in prior indication</li> <li>• Added indications for synovectomy: synovial hemangioma, degenerative synovitis, plica syndrome</li> </ul> |

|           |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           | <ul style="list-style-type: none"> <li>• Added an “out” for conservative management requirement for plica syndrome and PVNS</li> <li>• Adjusted chondral lesion size for optimal ACI treatment to reflect appropriate arthroscopic management versus open arthrotomy</li> <li>• Added minimum age of 12 for optimal ACI treatment</li> <li>• Removed requirement for grade III or grade IV osteochondral defect for optimal arthroscopic ACI treatment versus open arthrotomy</li> <li>• Moved debridement of articular cartilage lesion indication beneath existing indications for debridement</li> <li>• Removed hemangioma indication under diagnostic arthroscopy as this indication was better covered elsewhere</li> <li>• Added indication for arthroscopic management of certain fracture types</li> <li>• Removed BMI requirement for meniscus allograft as it is not an absolute contraindication</li> <li>• Consolidated all indications which require three months of conservative care for policy’s ease of use.</li> <li>• Updated conservative care to current internal standard language.</li> <li>• Conservative care language modified to reflect non-opioid pain control.</li> <li>• Modified steroid injection language for clarity.</li> <li>• Added references.</li> <li>• Updated medical evidence section.</li> </ul> |
| Version 7 | 5/22/2025 | <ul style="list-style-type: none"> <li>• Added CPT codes: 27405, 27407, 27409, 27427</li> <li>• Slight modification to ligamentous injury indication to allow approval for lateral collateral ligament injury - changed “cruciate ligament injury” to “ligament injury” and added bullet points: presence of LCL tear, presence of PLC injury</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

# Cohere Medical Policy – Knee Manipulation Under Anesthesia (MUA)

Clinical Policy for Medical Necessity Review

CHP-008-3      Version 3

**Cohere Health UMC Approval Date** January 15, 2026

**Last Annual Review** January 15, 2026

**Revision Date** Not applicable

**Next Annual Review** January 15, 2027

**Level of care** Inpatient, Outpatient

**Specialty** Musculoskeletal care

**Population type** Adult (18+ years old), Pediatric (0-17 years old)



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# Procedure Codes (CPT/HCPCS)

| Service: Knee Manipulation Under Anesthesia |                                                                                                                  |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Code                                        | Description                                                                                                      |
| 27570                                       | Manipulation of knee joint under general anesthesia (includes application of traction or other fixation devices) |

# Important Notices

## Notices & Disclaimers:

**GUIDELINES ARE SOLELY FOR COHERE'S USE IN PERFORMING MEDICAL NECESSITY REVIEWS AND ARE NOT INTENDED TO INFORM OR ALTER CLINICAL DECISION-MAKING OF END USERS.**

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## Service: Knee Manipulation Under Anesthesia - Description

Knee manipulation under anesthesia (MUA) is a non-invasive technique utilized to treat scar tissue and stiffness (arthrofibrosis) following surgery (such as total knee arthroplasty [TKA]), fracture, or anterior cruciate ligament repair. To break up the scar tissue and restore motion, gentle pressure is applied to the leg while the patient is under sedation.<sup>1,2</sup> When medically appropriate, MUA is typically performed within 3 months of the initial TKA or related surgical procedure or injury.

# Service: Knee Manipulation Under Anesthesia - Medical Necessity Criteria

## Administrative Guidelines for Medical Necessity Review

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation or those that do not align with the provided clinical information—such as mismatched laterality, body part, or CPT code—may be denied due to a lack of medical necessity resulting from insufficient or inconsistent clinical information.
- When multiple diagnostic or therapeutic procedures are requested simultaneously or within the past 3 months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request.
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed.
  - How the results will impact patient management or treatment decisions.
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## Indications

- Knee manipulation under anesthesia (MUA) is considered appropriate if **ALL** of the following are **TRUE**<sup>3</sup>:
  - Arthrofibrosis occurs after **ANY** of the following<sup>4,5</sup>:
    - Acute knee injury; **OR**
    - Fracture; **OR**
    - Knee surgery; **OR**
    - Total knee arthroplasty; **AND**
  - Failure of conservative management<sup>A</sup>, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
    - **ANY** of the following:
      - **ALL** of the following:
        - ▲ Physical therapy (PT) and documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
        - ▲ PT/HEP trialed for a duration of 6 weeks or more; **OR**
      - Progression or worsening of symptoms due to PT/HEP treatment; **AND**
    - **ANY** of the following:
      - Corticosteroid injection if medically appropriate<sup>6</sup>; **OR**
      - Documentation that corticosteroid injection is contraindicated.

## Non-Indications

- Knee manipulation under anesthesia (MUA) is not considered appropriate if **ANY** of the following is **TRUE**:
  - Bone cancer; **OR**
  - Local infection; **OR**
  - Radiographically confirmed severe osteopenia.<sup>7</sup>

## Definition and Notes

### <sup>A</sup>Failure of conservative management:

- The patient has completed a full course of conservative management without meaningful improvement.
- Patient noncompliance, closure of therapy offices, and patient inconvenience do *not* constitute a failure of conservative treatment.

# Medical Evidence

Akhtar et al. (2024) conducted a meta-analysis and systematic review of the clinical outcomes of early manipulation under anesthesia (MUA) compared to delayed MUA for patients following total knee arthroplasty (TKA). While the procedure is often utilized, established guidelines do not exist regarding the timing of MUA following TKA; MUA beyond 3 months is generally not recommended. Fourteen studies were included, which analyzed 13,445 knees - 72.1% had early MUA versus 27.8% had delayed MUA. Ten studies<sup>10</sup> defined early MUA as occurring within 3 months of the initial TKA. Knee flexion pre-MUA and post-MUA for early and delayed groups was 71.3°/77.9° and 103.0°/96.1°, respectively. The delayed group reported a higher pre-MUA knee flexion however, both groups reported similar post-MUA flexion. The mean gain in knee flexion was 32.0° (early group) and 19.2° (delayed group). Surgical complications and revision TKA were higher in the delayed group. Overall, the early group reported a mean gain in flexion that was approximately 50% as compared to the delayed group.<sup>8</sup>

Abdel et al. (2024) performed a multicenter randomized clinical trial (RCT) to examine MUA with adjuvant anti-inflammatory medications and physical therapy to improve range of motion (ROM) outcomes. The 124 patients (124 TKAs) developed stiffness following TKA. ROM was less than 90° at postoperative follow-up (4 to 12 weeks after TKA); additional follow-up occurred at 1 year post-total knee arthroplasty. The control group had MUA and physical therapy - the treatment group underwent MUA, physical therapy, and received 1 dose of intravenous dexamethasone (8 mg) and 14 days of oral celecoxib (200 mg) prior to MUA. ROM improved a mean of 46° (from 72 to 118° immediately after MUA. At 6-week and 1-year follow-up, patients from the treatment and control groups reported similar ROM. The authors concluded that additional research is needed regarding anti-inflammatories with respect to dose, duration, and route of administration.<sup>9</sup>

Fackler et al. (2022) reviewed eight studies (240 patients) to assess the outcomes of arthroscopic lysis of adhesions (LOA) with knee manipulation under anesthesia (MUA). This includes knee arthrofibrosis. The time between index surgery and the combined LOA with MUA was 8.4 months. An improvement in the arc of motion was 41.6 degrees following the procedure. The authors conclude that the combined LOA and MUA is safe and effective.<sup>10</sup>

Colacchio et al. (2019) reviewed 142 cases of knee MUA that were performed following total knee arthroplasty (TKA). Evidence shows positive outcomes, including range of motion (average increase of 11 degrees). The timing of the procedures ranged from three months to one year. Overall, the authors conclude that knee MUA may help patients avoid revision TKA.<sup>11</sup>

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# Policy Revision History/Information

| Clinical Guideline Version | Date       | Review History                                                                                                                                                                                                      |
|----------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version 1                  | 11/03/2023 | Original Date.                                                                                                                                                                                                      |
| Version 2                  | 01/09/2025 | Annual review. Updated timeframe for the duration of required conservative management from 3 months to 6 weeks. Reviewed boolean logic. Literature review. Medical Evidence section updated (including references). |
| Version 3                  | 01/15/2026 | Annual Review. Reorganized indications for clarity and concision. Updated the conservative care language in the Indications section. Added references 2 and 5.                                                      |



## **Cohere Medical Policy – Knee Manipulation Under Anesthesia (MUA)**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 2  
**Effective Date:** January 9, 2025

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy - Knee Manipulation Under Anesthesia (MUA)

**Date of last literature review:** 12/5/2024

**Document last updated:** 1/8/2025

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Knee Manipulation Under Anesthesia (MUA)***

### **Recommended Clinical Approach**

Knee manipulation under anesthesia (MUA) is a non-invasive technique utilized to treat scar tissue and stiffness (arthrofibrosis) following surgery (such as total knee arthroplasty [TKA]), fracture, or anterior cruciate ligament repair. The procedure is indicated when there is less than a 90-degree arc of motion. To break up the scar tissue and restore motion, gentle pressure is applied to the leg while the patient is under sedation.<sup>1</sup> When medically appropriate, MUA is ideally performed within 3 months of the initial TKA or related surgical procedure or injury.

### **Medical Necessity Criteria**

#### **Indications**

→ **Knee manipulation under anesthesia (MUA)** is considered appropriate if **ALL** of the following are **TRUE**<sup>2</sup>:

- ◆ Arthrofibrosis occurs after **ANY** of the following<sup>3,4</sup>:
  - Total knee arthroplasty (TKA); **OR**
  - Knee surgery (ACL repair or other procedure); **OR**
  - Fracture; **OR**
  - Acute knee injury; **AND**
- ◆ Failure of conservative management for greater than 6 weeks, including **ALL** of the following:
  - Anti-inflammatory medications, analgesics, or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **AND**
  - Physical therapy or physician-directed home exercise program; **AND**
  - **ANY** of the following:
    - Corticosteroid injection if medically appropriate; **OR**
    - Corticosteroid injection is contraindicated.

## Non-Indications

→ **Knee manipulation under anesthesia (MUA)** is not considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Bone cancer; **OR**
- ◆ Radiographic severe osteopenia<sup>5</sup>; **OR**
- ◆ Local infection.

## Level of Care Criteria

Inpatient or Outpatient

## Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                 |
|----------------|------------------------------------------------------------------------------------------------------------------|
| 27570          | Manipulation of knee joint under general anesthesia (includes application of traction or other fixation devices) |

## Medical Evidence

Akhtar et al. (2024) conducted a meta-analysis and systematic review of the clinical outcomes of early manipulation under anesthesia (MUA) compared to delayed MUA for patients following total knee arthroplasty (TKA). While the procedure is often utilized, established guidelines do not exist regarding the timing of MUA following TKA; MUA beyond 3 months is generally not recommended. Fourteen studies were included, which analyzed 13,445 knees – 72.1% had early MUA versus 27.8% had delayed MUA. Ten studies 10 defined early MUA as occurring within 3 months of the initial TKA. Knee flexion pre-MUA and post-MUA for early and delayed groups was 71.3°/77.9° and 103.0°/96.1°, respectively. The delayed group reported a higher pre-MUA knee flexion however, both groups reported similar post-MUA flexion. The mean gain in knee flexion was 32.0° (early group) and 19.2° (delayed group). Surgical complications and revision TKA were higher in the delayed group. Overall, the early group reported a mean gain in flexion that was approximately 50% as compared to the delayed group.<sup>6</sup>

Abdel et al. (2024) performed a multicenter randomized clinical trial (RCT) to examine MUA with adjuvant anti-inflammatory medications and physical therapy to improve range of motion (ROM) outcomes. The 124 patients (124 TKAs) developed stiffness following TKA. ROM was less than 90° at postoperative follow-up (4 to 12 weeks after TKA); additional follow-up occurred at 1 year post-TKA. The control group had MUA and physical therapy – the treatment group underwent MUA, physical therapy, and received 1 dose of intravenous dexamethasone (8 mg) and 14 days of oral celecoxib (200 mg) prior to MUA. ROM improved a mean of 46° (from 72 to 118° immediately after MUA. At 6-week and 1-year follow-up, patients from the treatment and control groups reported similar ROM. The authors concluded that additional research is needed regarding anti-inflammatories with respect to dose, duration, and route of administration. (ClinicalTrials.gov NCT02739035).<sup>7</sup>

Fackler et al. (2022) reviewed eight studies (240 patients) to assess the outcomes of arthroscopic lysis of adhesions (LOA) with knee manipulation under anesthesia (MUA). This includes knee arthrofibrosis. The time between index surgery and the combined LOA with MUA was 8.4 months. An

improvement in the arc of motion was 41.6 degrees following the procedure. The authors conclude that the combined LOA and MUA is safe and effective.<sup>8</sup>

Colacchio et al. (2019) reviewed 142 cases of knee MUA that were performed following total knee arthroplasty (TKA). Evidence shows positive outcomes, including range of motion (average increase of 11 degrees). The timing of the procedures ranged from three months to one year. Overall, the authors conclude that knee MUA may help patients avoid revision TKA.<sup>9</sup>



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# Clinical Guideline Revision History/Information

|                                 |          |                                                                                                                                                                                                                                                                                                      |
|---------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Original Date: November 3, 2023 |          |                                                                                                                                                                                                                                                                                                      |
| Review History                  |          |                                                                                                                                                                                                                                                                                                      |
| Version 2                       | 1/9/2025 | <ul style="list-style-type: none"><li>• Annual review.</li><li>• Updated timeframe for the duration of required conservative management from 3 months to 6 weeks.</li><li>• Reviewed boolean logic.</li><li>• Literature review – Medical Evidence section updated (including references).</li></ul> |
|                                 |          |                                                                                                                                                                                                                                                                                                      |
|                                 |          |                                                                                                                                                                                                                                                                                                      |



## **Cohere Medical Policy – Knee Open or Arthroscopic Bursectomy**

*Clinical Policy for Medical Necessity Review*

**Version: 2**

**Cohere Health UMC Approval Date: July 31, 2025**

Last Annual Review: July 31, 2025

Revision: Not Applicable

Next Annual Review: July 31, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Knee Open or Arthroscopic Bursectomy

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Knee Open or Arthroscopic Bursectomy***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## Description

A bursectomy is a surgery, typically performed as an outpatient procedure, in which a small incision is made to remove a swollen or irritated bursa, a closed, fluid-filled sac that reduces friction between layers of tissue. The procedure can be performed by making small incisions and using a small camera called an arthroscope, or through open knee surgery. A bursectomy is meant to restore or improve function and reduce pain and stiffness. After surgery, patients are advised to forego vigorous physical exertion for 2 weeks.<sup>1-3</sup>

## Medical Necessity Criteria

### Indications

A **knee open or arthroscopic bursectomy** is considered appropriate if **ANY** of the following is **TRUE**<sup>1-8</sup>:

- Suspected septic prepatellar bursitis/infection when symptoms have not improved significantly within 36–48 hours after initiation of antibiotic treatment<sup>7,9</sup>; **OR**
- Chronic recurrent prepatellar bursitis with **ALL** of the following:
  - Painful swelling due to pressure on the knee<sup>1,3-5</sup>; **AND**
  - Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - PRICE (Protection, Ice, Compression, and Elevation)<sup>9</sup>; **AND**
    - Avoidance of direct pressure with activity modification or padding.

### Non-Indications

A **knee open or arthroscopic bursectomy** is not considered appropriate if **ANY** of the following is **TRUE**:

- Asymptomatic prepatellar bursitis.

## Level of Care Criteria

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>     |
|-----------------------|-----------------------------|
| 27340                 | Excision, prepatellar bursa |



## Medical Evidence

Brown et al (2022) performed a systematic review to determine the optimal treatment for prepatellar bursitis. It included 10 studies (702 patients) comparing endoscopic and open bursectomy and assessing the duration of antibiotics. The primary outcome was recurrence after 1 year. Results showed no significant difference in recurrence between endoscopic and open bursectomy or surgical complications. Endoscopic bursectomy offered shorter hospital stays and lower postoperative pain risk. Antibiotic treatment for less than 8 days did not significantly increase recurrence compared to longer treatment. The study suggests endoscopic bursectomy as a viable option for septic and aseptic prepatellar bursitis. There is no significant improvement in recurrence or hospital stay with antibiotic treatment exceeding 7 days for septic bursitis.<sup>7</sup>

Uçkay et al (2017) conducted a randomized trial to analyze the optimal surgical approach for patients with septic bursitis. A total of 164 patients were randomized to receive either 1-stage or 2-stage bursectomy, along with 7 days of oral antibiotic therapy post-surgery. Of these patients, 130 had elbow bursitis, and 34 had patellar bursitis. The results showed 22 treatment failures overall, with a slightly lower rate in the 1-stage group (10%) than in the 2-stage group (16%), though this difference was not statistically significant. Recurrent infections were observed in a small percentage of patients, some caused by the same pathogen and others by a different pathogen. However, outcomes favored the 1-stage approach in terms of lower rates of wound dehiscence for elbow bursitis (1 out of 66 vs 9 out of 64), shorter median hospital stay (4.5 vs 6.0 days), reduced nurses' workload, and lower total costs. The conclusion drawn was that for adults with moderate to severe septic bursitis requiring hospitalization, bursectomy with primary closure and 7 days of antibiotic therapy was safe, effective, and cost-saving. Additionally, the study suggested that using a 2-stage approach may be associated with a higher risk of wound dehiscence for olecranon bursitis than the 1-stage approach.<sup>8</sup>

Baumbach et al (2015) reported on a study to develop a treatment algorithm for olecranon and prepatellar bursitis, which are common conditions predominantly affecting middle-aged male patients. About one-third of cases were septic, while two-thirds were non-septic, with treatment

approaches varying internationally. A literature review identified 52 relevant papers. Differentiation between septic and non-septic bursitis relied on clinical presentation, bursal aspirate, and blood sampling analysis. Bursal aspirate criteria included purulence, glucose ratio, white cell count, cell type, Gram staining, and culture—general treatment for both types involved bursal aspiration, NSAIDs, and PRICE. In non-septic cases with high demands, intrabursal steroid injection might be considered. Septic bursitis requires antibiotic therapy. Surgical intervention like incision, drainage, or bursectomy were reserved for severe, refractory, or chronic/recurrent cases. The authors concluded that immediate bursectomy lacked sufficient evidence support and suggested a conservative approach based on bursal aspirate differentiation between septic and non-septic bursitis.<sup>9</sup>

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*Arch Orthop Trauma Surg.* 2014;134(3):359–370.  
doi:10.1007/s00402-013-1882-7

# Policy Revision History/Information

|                             |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Original Date: May 28, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Review History              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Version 2                   | 07/31/2025 | <p>Annual Review</p> <p>Added procedure description (page 4)</p> <p>Updated conservative management language (page 4) and replaced physical therapy, or a physician-directed home exercise program, with PRICE (Protection, Ice, Compression, and Elevation).</p> <p>Added chronic recurrent prepatellar bursitis with painful swelling due to pressure on the knee in the indication section.</p> <p>Added asymptomatic prepatellar bursitis as a non-indication.</p> |



## **Cohere Medical Policy – Kyphectomy**

*Clinical Policy for Medical Necessity Review*

**Version:** 5

**Policy Number:** CHP-001-5

**Cohere Health UMC Approval Date:** January 15, 2026

Last Annual Review: January 15, 2026

Revision: Not Applicable

Next Annual Review: January 15, 2027

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Number:** CHP-001-5

**Policy Name:** Cohere Medical Policy - Kyphectomy

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Kyphectomy***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Duplicate exams or requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed and/or treated with a single study or procedure.

## **Description**

A kyphectomy is a surgical procedure used to correct kyphosis, a curvature of the spine that causes a "hunchback" appearance.<sup>1</sup> The procedure involves removing parts of the vertebrae, such as bones, discs, transverse processes, or pedicles, at the apex of the kyphosis to straighten the spinal column and stabilize it.<sup>2</sup> Rods, hooks, screws, or fusions may be used to stabilize the corrected spine.<sup>2,3</sup> Kyphectomy is effective for correcting kyphosis to improve ambulatory function and relieve pain.<sup>1</sup> It is used for pediatric spinal deformity correction or adult congenital kyphosis, and it may involve myelomeningocele congenital deformities (where the spinal cord and spinal canal do not close completely during fetal development) or post-tuberculosis kyphosis.<sup>4,5</sup>

## **Medical Necessity Criteria**

### **Indications**

**Kyphectomy** is considered appropriate if **ALL** of the following are **TRUE**:

- **ANY** of the following:
  - Current nicotine user with no product use for 6 weeks; and **ANY** of the following<sup>6</sup>:
    - Negative urine (cotinine) lab test within 30 days; **OR**
    - Surgery is urgently required due to documented reason (e.g., acute change in neurological status, acute instability from fracture or hardware failure, impending skin breakdown); **OR**
  - No history of nicotine product use within the last 12 months; **OR**
  - No lifetime history of nicotine product use, **AND**
- **ANY** of the following:
  - **ALL** of the following:
    - Patient is an adult (greater than or equal to 18 years of age); **AND**
    - The patient has **ANY** of the following conditions:
      - Cervical spine deformity (e.g., kyphosis, head-drop syndrome, post-laminectomy deformity) and **ANY** of the following<sup>7,8,9</sup>:
        - The patient has a clinically significant deformity that makes the patient unable to maintain a forward gaze; **OR**
        - Progression of cervical deformity is documented; **OR**
        - The patient has **ANY** of the following substantial functional limitations:

- Severe neck pain; **OR**
- Difficulty ambulating; **OR**
- Decreased ability to perform activities of daily living (ADLs); **OR**
- Lumbar spine deformity (e.g., myelomeningocele, scoliosis restricted to the lumbar spine, or a thoracolumbar deformity that ends in the lumbar spine) and **ALL** of the following<sup>2,10,11</sup>:
  - Failure of conservative management<sup>A</sup>, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
    - **ANY** of the following:
      - **ALL** of the following:
        - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
        - PT/HEP trialed for a duration of 6 weeks or more within the past 6 months; **OR**
      - Progression or worsening of symptoms due to PT/HEP treatment; **AND**
  - The patient has **ANY** of the following substantial functional limitations:
    - Severe back pain; **OR**
    - Difficulty ambulating; **OR**
    - Decreased ability to perform ADLs; **AND**
  - The patient has **ANY** of the following deformity attributes:
    - Progression of lumbar deformity is at least 10° (as measured on consecutive radiographs over one year); **OR**
    - Fixed curve greater than 30° in the coronal plane; **OR**
    - Lateral listhesis of at least 10%; **OR**
    - Proximal junctional kyphosis is defined as a segmental Cobb angle of at least 10° or 10° of progression from the immediate postoperative images<sup>13</sup>; **OR**

- Sagittal or coronal imbalance of at least 5 cm is present (as measured on long-plate, standing radiographs of the entire spine); **OR**
  - Sitting imbalance<sup>14</sup>; **OR**
  - Impending skin breakdown from the deformity<sup>14</sup>; **OR**
- Scheuermann's kyphosis and **ANY** of the following<sup>215-17</sup>:
  - Thoracic kyphosis greater than 75° causing unacceptable deformity; **OR**
  - Thoracic kyphosis greater than 75° associated with pain; **OR**
  - Functionally progressive curve; **OR**
  - Neurologic deficit/spinal cord compression; **OR**
  - **ALL** of the following:
    - Symptomatic kyphotic deformity; **AND**
    - Failure of conservative management<sup>A</sup>, including **ALL** of the following:
      - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
      - **ANY** of the following:
        - **ALL** of the following:
          - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
          - PT/HEP trialed for a duration of 6 weeks or more within the past 6 months; **OR**
        - Progression or worsening of symptoms due to PT/HEP treatment; **OR**
  - Pediatric with **ALL** of the following:
    - Less than or equal to 17 years of age; **AND**
    - The patient has **ANY** of the following conditions:
      - Cervical spine deformity (e.g., kyphosis, head-drop syndrome, post-laminectomy deformity) and **ANY** of the following<sup>7,8,9</sup>:
        - The patient has a clinically significant deformity that makes the patient unable to maintain a forward gaze; **OR**
        - Progression of cervical deformity is documented; **OR**
        - The patient has substantial functional limitations; **OR**

- Lumbar spine deformity (e.g., myelomeningocele, scoliosis restricted to the lumbar spine, or a thoracolumbar deformity that ends in the lumbar spine) and **ALL** of the following<sup>2,10,11</sup>:
  - The patient has substantial functional limitations; **AND**
  - The patient has **ANY** of the following deformity attributes:
    - Progression of lumbar deformity is at least 10° (as measured on consecutive radiographs over one year); **OR**
    - Fixed curve greater than 30° in the coronal plane; **OR**
    - Lateral listhesis of at least 10%; **OR**
    - Proximal junctional kyphosis is defined as a segmental Cobb angle of at least 10° or 10° of progression from the immediate postoperative images<sup>13</sup>; **OR**
    - Sagittal or coronal imbalance of at least 5 cm is present (as measured on long-plate, standing radiographs of the entire spine); **OR**
    - Sitting imbalance<sup>14</sup>; **OR**
    - Impending skin breakdown from the deformity<sup>14</sup>; **OR**
- Scheuermann's kyphosis and **ANY** of the following<sup>2,15-17</sup>:
  - Thoracic kyphosis greater than 75° causing unacceptable deformity; **OR**
  - Thoracic kyphosis greater than 75° associated with pain; **OR**
  - Functionally progressive curve; **OR**
  - Neurologic deficit/spinal cord compression; **OR**
  - **ALL** of the following:
    - Symptomatic kyphotic deformity; **AND**
    - Failure of conservative management<sup>A</sup>, including **ALL** of the following:
      - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
      - **ANY** of the following:
        - **ALL** of the following:
          - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**

- PT/HEP trialed for a duration of 6 weeks or more within the past 6 months; **OR**
- Progression or worsening of symptoms due to PT/HEP treatment.

## Non-Indications

**Kyphectomy** is not considered appropriate if **ANY** of the following is **TRUE**:

- Active infection at the surgical site.<sup>18</sup>

## Definitions

### **<sup>A</sup>Failure of conservative management:**

- The patient has completed a full course of conservative management without meaningful improvement.
- Patient noncompliance, closure of therapy offices, and patient inconvenience do *not* constitute a failure of conservative treatment.

## Level of Care Criteria

Inpatient or Outpatient

## Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                                                  |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 22818          | Kyphectomy, circumferential exposure of spine and resection of vertebral segment(s) (including body and posterior elements); single or 2 segments |
| 22819          | Kyphectomy, circumferential exposure of spine and resection of vertebral segment(s) (including body and posterior elements); 3 or more segments   |
| 22899          | Unlisted procedure, spine                                                                                                                         |

## Medical Evidence

Bradko et al. (2022) performed a systematic literature review to assess surgical management and functional outcomes and quality of life in adolescents and adults with myelomeningocele (a severe type of spina bifida). A total of 13 studies included 556 individuals with both myelomeningocele and scoliosis. Those with both were more likely to have secondary impairments or comorbidities (e.g., bladder/bowel incontinence, decreased ambulation, pressure injuries) than patients with no myelomeningocele or no scoliosis. This review found no strong functional or quality of life improvements after surgery in adolescents or adults with both myelomeningocele and scoliosis. The level of neurologic dysfunction and hydrocephalus should be considered when determining potential improvements in quality of life. The authors advised caution for surgical interventions in these populations, as there are higher risks of complications and possibly few benefits.<sup>20</sup>

Huq et al. (2020) systematically reviewed treatment approaches for Scheuermann kyphosis (defined as “anterior wedging of 5° or more in at least three contiguous vertebrae”). A total of 45 studies were included, totaling 1829 patients with Scheuermann kyphosis-related pain, deformity, neural impairment, or failure of nonoperative treatment. Surgery was found to be superior to bracing for correction and maintenance of correction. Loss of correction was similar across posterior and anterior-posterior approaches, while a posterior-only approach provided superior correction. This review also suggested that surgeons have shifted to posterior-only approaches in the twenty-first century.<sup>4</sup>

Garg et al. (2011) performed a retrospective review of 23 pediatric patients with myelomeningocele who underwent kyphectomy and spinal fusion. The review assessed the efficacy of kyphectomy in repairing an intact skin envelope and allowing more comfort when sitting in a wheelchair. Complications of surgery for patients with myelomeningocele were analyzed, as well as whether patients who required an unplanned reoperation experienced additional complications compared to patients with a single procedure. Overall, 17 patients achieved seating balance and resolution of skin problems. Seven patients required reoperations and operations to treat

late infection, pseudarthrosis, implant-related sacral pressure sore, and future extension of proximal fusion after growth.<sup>14</sup>

Samagh et al. (2011) retrospectively reviewed kyphectomy surgical outcomes in patients with myelomeningocele or lumbar kyphosis. These included surgical results, complications, and short-term and midterm outcomes. Preoperatively, the mean extent of kyphosis among patients was 115.6° (range: 77–176°); correction was 13.0° (range: 0–32°) postoperatively, a reduction of 88.7%. Preoperatively, patients were unable to lie supine; postoperatively, all patients were able to lie in this position.<sup>8</sup>



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# Policy Revision History/Information

| Original Date: October 6, 2023 |            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                 |            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Version 2                      | 12/1/2023  | Policy criteria reviewed and updated per medical literature                                                                                                                                                                                                                                                                                                                                                           |
| Version 3                      | 09/20/2024 | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                                                                                                    |
| Version 4                      | 01/02/2025 | <p>Annual review.</p> <p>Clinical approach updated.</p> <p>Indications updated: Clinically significant deformity clarified by presentation; Conservative management criteria updated, steroid injections removed; Lumbar and cervical indications aligned; Indications for lumbar spine deformity expanded with sitting imbalance and skin breakdown.</p> <p>Medical evidence updated.</p> <p>References updated.</p> |
| Version 5                      | 01/15/2026 | <p>Annual review.</p> <p>Minor updates to description to improve clarity.</p> <p>Restructured lumbar indications to match cervical indications and in alignment with NASS policy recommendations (i.e., severe</p>                                                                                                                                                                                                    |

|  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>back pain, difficulty ambulating, decreased ability to perform ADLs).</p> <p>Changed lumbar indications to include ALL sub-indications instead of ANY.</p> <p>Added "Sitting imbalance" and "Impending skin breakdown from the deformity" to the list of possible lumbar deformity attributes.</p> <p>Removed cervical radiculopathy from non-indications; added surgical site infection and burst fracture.</p> <p>Updated conservative care language.</p> <p>References updated.</p> |
|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## **Kyphoplasty and Vertebroplasty – Single Service**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 1.0  
**Effective Date:** September 29, 2023

# Important Notices

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## Guideline Information:

**Specialty Area:** Diseases & Disorders of the Musculoskeletal System (M00-M99)

**Care Path Name:** Kyphoplasty and Vertebroplasty – Single Service

**Literature review current through:** 9/29/2023

**Document last updated:** 9/29/2023

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)

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# Medical Necessity Criteria

## ***Service: Kyphoplasty and Vertebroplasty – Single Service***

### General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach:** Kyphoplasty and vertebroplasty (or balloon-assisted vertebroplasty) involves injecting a bone cement (typically polymethylmethacrylate [PMMA]) into a vertebral body due to a vertebral compression fracture (VCF) or a disease process that has replaced the normal bony architecture. The cement provides stability to the damaged vertebra to reduce pain and improve function.
- **Exclusions:** Absolute exclusions include active infection at the surgical site or other systemic infection, allergies to bone cement, asymptomatic compression fractures, retropulsed bone fragment with spinal compromise, or nerve impingement.

### Medical Necessity Criteria

#### Indications

- **Kyphoplasty and Vertebroplasty for Vertebral Compression Fractures (VCF)** is considered appropriate if **ALL** of the following are **TRUE**:
- ◆ Failure of conservative therapy, including **ANY** of the following:
    - Analgesics; **OR**
    - External orthosis; **OR**
    - Physical therapy; **OR**
    - Bed rest<sup>1</sup>; **AND**
  - ◆ Acute (less than 6 weeks) or subacute (6-12 weeks) osteoporotic VCF (T1 – L5) as evidenced by **ALL** of the following:
    - Symptom onset; **AND**
    - Documented by advanced imaging (e.g., bone marrow edema on MRI or bone-scan/SPECT/CT uptake)<sup>2-9</sup>; **AND**
  - ◆ Symptomatic as evidenced by **ANY** of the following:<sup>3</sup>
    - Hospitalized with severe pain (Numeric Rating Scale [NRS] or Visual Analog Scale [VAS] pain score greater than or equal to 8)<sup>10-13</sup>; **OR**
    - Non-hospitalized with moderate to severe pain (NRS or VAS greater than or equal to 5) despite optimal non-surgical management (NSM) as evidenced by **ANY** of the following:<sup>7</sup>
      - Worsening pain; **OR**



- Stable to improved pain (but NRS or VAS still greater than or equal to 5) as evidenced by **TWO or more** of the following:
  - ◆ Progression of vertebral body height loss; **OR**
  - ◆ More than 25% vertebral body height reduction; **OR**
  - ◆ Kyphotic deformity; **OR**
  - ◆ Severe impact of VCF on daily functioning; **OR**
  - ◆ Roland Morris Disability Questionnaire (RDQ) greater than 17; **AND**
- ◆ The patient has **ANY** of the following indications:
  - Painful osteoporotic vertebral fracture(s) as evidenced by **ALL** of the following:<sup>14</sup>
    - Medically refractory pain (e.g., opioid intolerance); **AND**
    - Pain requiring a reduction in activities of daily living (ADLs); **AND**
    - Within 12 weeks of pain onset; **AND**
    - Remaining affected vertebra is more than one-third of the original vertebral height; **OR**
  - Vertebral bodies weakened by neoplasm<sup>14</sup>; **OR**
  - Symptomatic vertebral body microfracture as documented by advanced imaging without obvious loss of vertebral body height<sup>14</sup>; **OR**
  - Benign painful lesion of bone<sup>14</sup>; **OR**
  - Rapidly progressive fracture, with or without pseudoarthrosis potentially leading to kyphosis<sup>14</sup>; **OR**
  - Severe kyphosis resulting in decreased pulmonary function<sup>14</sup>; **OR**
  - Steroid-induced fracture; **OR**
  - Painful and/or aggressive hemangioma; **OR**
  - Painful multiple myeloma involving the vertebral body; **OR**
  - Painful osteolytic vertebral body metastatic disease; **OR**
- ◆ Continuum of care as evidenced by **ALL** of the following:<sup>2-3,7</sup>
  - Referral for evaluation of a bone mineral density; **AND**
  - Referral to osteoporosis education for subsequent treatment as indicated; **AND**
  - Referral to an osteoporosis prevention/treatment program.

## Non-Indications

→ **Kyphoplasty and Vertebroplasty for Vertebral Compression Fractures (VCF)** are not indicated if **ANY** of the following is **TRUE**:

- ◆ Osteoporotic VCF on imaging with correlating signs and symptoms and are neurologically not intact<sup>15</sup>; **OR**
- ◆ Patient has **ANY** of the following absolute contraindications:
  - Current back pain is not primarily due to the identified acute or subacute VCF(s)<sup>2-3,5,7,11-12</sup>; **OR**
  - Osteomyelitis, discitis, active systemic or surgical site infection<sup>3,5,7,11-12,14</sup>; **OR**
  - Infection along the intended trajectory of access<sup>14</sup>; **OR**
  - Septicemia<sup>14</sup>; **OR**
  - Uncorrectable coagulopathy<sup>14</sup>; **OR**
  - Asymptomatic compression fracture<sup>1</sup>; **OR**
  - Allergy to cement or components of fill material; **OR**
  - Pregnancy; **OR**
- ◆ Patient has **ANY** of the following relative contraindications that have been evaluated and indicate that the procedure is not recommended:<sup>3,5,7,11,12</sup>
  - Greater than three vertebral fractures per procedure; **OR**
  - Allergy to bone cement or opacification agents; **OR**
  - Uncorrected coagulopathy; **OR**
  - Spinal instability; **OR**
  - Myelopathy from the fracture; **OR**
  - Neurologic deficit; **OR**
  - Neural impingement; **OR**
  - Fracture retropulsion with canal compromise; **OR**
  - Radiculopathy, caused by a compressive syndrome unrelated to vertebral body fracture<sup>14</sup>; **OR**
  - Retropulsion of a fracture fragment with signs and/or symptoms of neurological compromise up to and including myelopathy or cauda equina syndrome<sup>14</sup>; **OR**
  - Epidural tumor extension with significant encroachment on the spinal canal<sup>14</sup>; **OR**
  - Fracture extension into the posterior vertebral body wall (risk of cement extravasation into the spinal canal)<sup>1</sup>; **OR**
  - Patient with apparently stable fracture on imaging who is clinically improving<sup>14</sup>; **OR**

- Severe compression fractures or deformity<sup>1</sup>; **OR**
- Prophylactic treatment for osteoporosis to prevent future fractures; **OR**
- Pregnancy.<sup>14</sup>

### **Site of Service Criteria**

Inpatient or Outpatient.

### **Procedure Codes (HCPCS/CPT)**

| <b>HCPCS Code</b> | <b>Code Description/Definition</b>                                                                                                                                          |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 01941             | Anesthesia for percutaneous image-guided neuromodulation or intravertebral procedures (e.g., kyphoplasty, vertebroplasty) on the spine or spinal cord; cervical or thoracic |
| 01942             | Anesthesia for percutaneous image-guided neuromodulation or intravertebral procedures (e.g., kyphoplasty, vertebroplasty) on the spine or spinal cord; lumbar or sacral     |
| 22510             | Percutaneous vertebroplasty of single cervicothoracic vertebral body with bilateral injection                                                                               |
| 22511             | Percutaneous vertebroplasty of single lumbosacral vertebral body with bilateral injection                                                                                   |
| 22512             | Percutaneous vertebroplasty of each additional cervicothoracic vertebral body with bilateral injection                                                                      |
| 22513             | Percutaneous augmentation of single thoracic vertebral body with insertion of mechanical device using cannula, including cavity creation                                    |
| 22514             | Percutaneous augmentation of single lumbar vertebral body with insertion of mechanical device using cannula, including cavity creation                                      |
| 22515             | Percutaneous augmentation of each additional lumbar vertebral body with insertion of mechanical device using cannula, including cavity creation                             |

# Medical Evidence

## National and Professional Organizations

The **American Academy of Orthopaedic Surgeons (AAOS)** published a clinical practice guideline on the *Treatment of Symptomatic Osteoporotic Spinal Compression Fractures*. Kyphoplasty is for neurologically intact patients with an osteoporotic spinal compression fracture, as evidenced by imaging with clinical symptoms. The AAOS does provide a recommendation of support or non-support regarding the improvement of kyphosis angle in patients with an osteopathic spinal compression fracture.<sup>16</sup>

The **American College of Radiology (ACR)**, **American Society of Neuroradiology (ASNR)**, **American Society of Spine Radiology (ASSR)**, **Society of Interventional Radiology (SIR)**, and the **Society of NeuroInterventional Surgery (SNIS)** published a *Practice Parameter for the Performance of Vertebral Augmentation*. The document includes indications, contraindications, and specifications of the procedure.<sup>14</sup> The **ACR** also published *Appropriateness Criteria: Management of Vertebral Compression Fractures*.<sup>17</sup>

The **Society of Interventional Radiology (SIR)** issued a position statement on percutaneous vertebral augmentation in collaboration with the **American Association of Neurological Surgeons (AANS)**, **Congress of Neurological Surgeons (CNS)**, **American College of Radiology (ACR)**, **American Society of Neuroradiology (ASNR)**, **American Society of Spine Radiology (ASSR)**, **Canadian Interventional Radiology Association (CIRA)**, and **Society of NeuroInterventional Surgery (SNIS)**. The Societies support percutaneous vertebral augmentation (PVA) with the use of vertebroplasty or kyphoplasty as a safe, effective, and durable procedure in appropriate patients with symptomatic osteoporotic and neoplastic fractures.<sup>4</sup>

The **National Comprehensive Cancer Network (NCCN)** published a clinical practice guideline on *Multiple Myeloma*. Vertebroplasty or kyphoplasty is indicated for vertebral compression fractures.<sup>18</sup>

The **International Society for the Advancement of Spine Surgery (ISASS)** published a policy on *Vertebral Augmentation*. Vertebroplasty and kyphoplasty are supported for the early treatment of painful VCFs. The ISASS does not endorse any specific vertebroplasty/ kyphoplasty system.<sup>19</sup>

The **National Institute for Health and Care Excellence (NICE)** published the *Technology Appraisal Guidance: Percutaneous Vertebroplasty and Percutaneous Balloon Kyphoplasty for Treating Osteoporotic Vertebral Compression Fractures*. Percutaneous vertebroplasty and percutaneous balloon kyphoplasty without stenting are recommended to treat osteoporotic vertebral compression fractures in patients:<sup>10</sup>

- “Who have severe ongoing pain after a recent, unhealed vertebral fracture despite optimal pain management; and
- In whom the pain has been confirmed to be at the level of the fracture by physical examination and imaging.”

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# Clinical Guideline Revision History/Information

|                                   |  |
|-----------------------------------|--|
| Original Date: September 29, 2023 |  |
| Review History                    |  |
|                                   |  |
|                                   |  |
|                                   |  |





# **Cohere Medical Policy – Lumbar or Thoracic Spinal Fusion**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 3  
**Effective Date:** December 19, 2024

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy - Lumbar Spinal Fusion

**Date of last literature review:** 12/16/2024

**Document last updated:** 12/17/2024

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Lumbar or Thoracic Spinal Fusion***

### **Recommended Clinical Approach**

Lumbar or thoracic spinal fusion (arthrodesis) may be necessary for conditions such as fracture or dislocation, spinal deformities (e.g., scoliosis or kyphosis), spinal stenosis, infection, tumors, or degenerative changes. This may be accomplished by an anterior, posterior, or posterolateral approach. Surgery may provide more rapid relief than non-surgical treatment options, as well as prevent further spinal cord dysfunction and neurological deficits.<sup>1</sup> Advanced imaging is recommended prior to surgical intervention.<sup>2-4</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ **Lumbar or thoracic spinal fusion** is considered appropriate if **ANY** of the following is **TRUE**:

◆ A **lumbar spinal fusion** is considered appropriate if **ALL** of the following are **TRUE**:

- No nicotine product use for 6 weeks with a negative lab test within 30 days (unless surgery is urgently required for progressive neurologic deficit); **AND**
- **ANY** of the following is **TRUE**:
  - The procedure is **lumbar fusion with or without decompression**, and **ALL** of the following are **TRUE**:
    - ◆ **ANY** of the following:
      - Radiographic evidence of kyphosis or scoliosis greater than 40 degrees; **OR**
      - Failure of conservative management for greater than 6 weeks, including **AT LEAST TWO** of the following:
        - Anti-inflammatory medications, analgesics, or prescription medications (e.g., oral steroids,

- narcotics, neuropathic pain medications) if not contraindicated; **OR**
  - Physical therapy or physician-directed home exercise program; **OR**
  - Injections, when medically appropriate, including **ANY** of the following:
    - ◆ Facet injections; **OR**
    - ◆ Medial branch blocks (MBB);**OR**
- The procedure is **lumbar fusion with or without decompression** with radiographic evidence of instability or iatrogenic instability caused by the decompression at all levels planned to be fused, and **ANY** of the following is **TRUE**<sup>5-6</sup>:
  - ◆ The patient has signs or symptoms of a potential cauda equina syndrome and **ALL** of the following<sup>7</sup>:
    - Magnetic resonance imaging (MRI) reveals compressive pathology; **AND**
    - **ANY** of the following symptoms:
      - Bowel, bladder, and erectile dysfunction; **OR**
      - Diffuse motor weakness; **OR**
      - Saddle-distribution anesthesia; **OR**
  - ◆ The patient has a primary or metastatic tumor<sup>7,8</sup>;
  - ◆ The patient has lumbar stenosis, and **ALL** of the following are **TRUE**:
    - **ANY** of the following symptoms<sup>5</sup>:
      - Lower extremity pain, weakness, fatigue, paresthesias, and sensory changes; **OR**
      - Gluteal and low back pain (LBP); **OR**
      - Bilateral or unilateral symptoms; **OR**

- Symptoms that present only with activity; **OR**
- Exacerbating factors include standing, walking, and other upright exercises; **OR**
- Pain that is relieved in a sitting or supine position or with forward flexion at the waist; **OR**
- Lower extremity pain that is made worse by walking; **AND**
- **ANY** of the following physical examination findings<sup>5, 9-10</sup>:
  - Focal motor weakness or sensory deficit; **OR**
  - Decreased or absent lower extremity reflexes; **OR**
  - Wide-based gait; **OR**
  - Positive Romberg's test (poor standing balance with eyes closed); **OR**
  - Positive straight leg raise (SLR; reproduction of lower extremity pain upon extension at the knee); **AND**
- MRI reveals compressive pathology and **ANY** of the following<sup>11</sup>:
  - Failure of conservative management for greater than 6 weeks, including **AT LEAST TWO** of the following:
    - ◆ Anti-inflammatory medications, analgesics or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **OR**

- ◆ Physical therapy, including a physician-directed home exercise program; **OR**
- ◆ Injections, when medically appropriate, including **ANY** of the following:
  - Facet injections; **OR**
  - Medial branch blocks (MBB); **OR**
- The patient has severe pain or disability affecting their quality of life and limiting their daily life (including working and inability to provide self-care); **OR**
- The patient has progressive neurological motor deficits; **OR**
- Unstable fracture noted on imaging with neuro deficit or myelopathy with **ANY** of the following:
  - ◆ Chance fracture; **OR**
  - ◆ Burst fracture with neuro deficit;
  - ◆ Fracture-dislocation; **OR**
- ◆ The patient has lumbar radiculopathy and **ALL** of the following are **TRUE**:
  - **ANY** of the following symptoms<sup>8</sup>:
    - Lower extremity pain, paresthesia, weakness, or numbness in a myotomal or dermatome distribution; **OR**
    - Radicular pain with coughing, sneezing, or straining; **OR**
    - LBP; **AND**
  - **ANY** of the following physical examination findings<sup>9-10</sup>:
    - Sensory disturbance (e.g., loss of sensation or decreased sensory response) or weakness in a

- dermatomal or myotomal distribution; **OR**
- Absent or decreased lower extremity reflex; **OR**
- Reduced spinal mobility; **OR**
- **ANY** of the following positive specialty tests (unless medically contraindicated):
  - ◆ Straight leg raise; **OR**
  - ◆ Crossed Lasègue's (or crossed straight leg raise); **OR**
  - ◆ Femoral nerve stretch; **OR**
  - ◆ Slump; **AND**
- MRI reveals compressive pathology and the patient has **ANY** of the following<sup>11</sup>:
  - Failure to show significant improvement in pain or disability level due to symptoms, despite receiving non-surgical management for more than 6 weeks, including **AT LEAST TWO** of the following (unless medically contraindicated):
    - ◆ Anti-inflammatory medications, analgesics or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **OR**
    - ◆ Physical therapy, including a physician-directed home exercise program; **OR**
    - ◆ Injections, when medically appropriate, including **ANY** of the following:
      - Facet injections; **OR**



- Medial branch blocks (MBB); **OR**
    - Severe pain or disability affecting their quality of life and limiting their daily life (including working and being unable to provide self-care); **OR**
    - Progressive neurological motor deficits; **OR**
- ◆ A **thoracic spinal fusion** is considered appropriate if **ALL** of the following are **TRUE**:
  - No nicotine product use for 6 weeks with a negative lab test within 30 days (unless surgery is urgently required for progressive neurologic deficit); **AND**
  - The procedure is thoracic fusion with or without decompression with **ALL** of the following:
    - Radiographic evidence of **ANY** of the following:
      - ◆ Lumbar curve greater than 40 degrees requiring extension into the thoracic spine; **OR**
      - ◆ Positive sagittal balance or sagittal vertebral axis (SVA) greater than 5 cm; **OR**
      - ◆ Pelvic incidence – lumbar lordosis (PI-LL) mismatch greater than 10 degrees; **AND**
    - Failure to show significant improvement in pain or disability level due to symptoms, despite receiving non-surgical management for more than 6 weeks, including **AT LEAST TWO** of the following (unless medically contraindicated):
      - ◆ Anti-inflammatory medications, analgesics or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **OR**
      - ◆ Physical therapy, including a physician-directed home exercise program; **OR**
      - ◆ Injections, when medically appropriate, including **ANY** of the following:
        - Facet injections; **OR**
        - Medial branch blocks (MBB); **OR**

- ◆ Junctional fusion for adjacent segment disease (e.g., stenosis, kyphosis, listhesis) is appropriate when **ANY** of the following is **TRUE**:
  - Adjacent cervical fusion is medically appropriate and approvable; **OR**
  - Adjacent lumbar fusion is medically appropriate and approvable; **OR**
  - Adjacent thoracic fusion is medically appropriate and approvable; **OR**
- ◆ Revision or repeat spinal fusion (e.g., due to prior unhealed fusion attempt) when at least 12 months have elapsed since the original surgery and imaging studies confirm the absence of healing in the preceding 3 months unless failure has occurred (e.g., pseudoarthrosis).<sup>12</sup>

### Non-Indications

- A **thoracic or lumbar spinal fusion** is not considered appropriate if **ANY** of the following is **TRUE**:
- ◆ Current laboratory-confirmed nicotine use (unless surgery is urgently required for progressive neurologic deficit); **OR**
  - ◆ **ANY** of the following<sup>7</sup>:
    - In disc herniation, adjunct to primary excision of a central or posterolateral disc herniation at any level in the absence of instability or spondylolisthesis; **OR**
    - In lumbar stenosis when greater than 50% bilateral facet resection is not required to achieve neurologic decompression; **OR**
    - Discogenic LBP that does not meet the criteria listed in the Indications section above.

### Level of Care Criteria

Inpatient or Outpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                    |
|----------------|-----------------------------------------------------|
| 20999          | Unlisted procedure, musculoskeletal system, general |

|       |                                                                                                                                                                                                                      |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22532 | Arthrodesis, lateral extra cavitory technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic                                                                           |
| 22533 | Arthrodesis, lateral, lumbar                                                                                                                                                                                         |
| 22534 | Each additional, thoracic or lumbar, (add-on code)                                                                                                                                                                   |
| 22556 | Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic                                                                               |
| 22558 | Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); lumbar                                                                                 |
| 22585 | Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); each additional interspace (List separately in addition to code for primary procedure) |
| 22586 | Arthrodesis, pre-sacral interbody technique, including disc space preparation, discectomy, with posterior instrumentation, with image guidance, includes bone graft when performed, L5-S1 interspace                 |
| 22610 | Arthrodesis, posterior or posterolateral technique, single interspace; thoracic (with lateral transverse technique, when performed)                                                                                  |
| 22612 | Arthrodesis, posterior or posterolateral technique, single interspace; lumbar (with lateral transverse technique, when performed)                                                                                    |
| 22614 | Arthrodesis, posterior or posterolateral technique, single interspace; each additional interspace (List separately in addition to code for primary procedure)                                                        |
| 22630 | Arthrodesis, posterior interbody technique, including laminectomy and/or discectomy to prepare interspace (other than for decompression), single interspace,                                                         |

|       |                                                                                                                                                                                                                                                                                                                           |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | lumbar                                                                                                                                                                                                                                                                                                                    |
| 22632 | Arthrodesis, posterior interbody technique, including laminectomy and/or discectomy to prepare interspace (other than for decompression), single interspace, lumbar; each additional interspace (List separately in addition to code for primary procedure)                                                               |
| 22633 | Arthrodesis, combined posterior or posterolateral technique with posterior interbody technique including laminectomy and/or discectomy sufficient to prepare interspace (other than for decompression), single interspace, lumbar                                                                                         |
| 22634 | Arthrodesis, combined posterior or posterolateral technique with posterior interbody technique including laminectomy and/or discectomy sufficient to prepare interspace (other than for decompression), single interspace, lumbar; each additional interspace (List separately in addition to code for primary procedure) |
| 22800 | Arthrodesis, posterior, for spinal deformity, with or without cast; up to 6 vertebral segments                                                                                                                                                                                                                            |
| 22802 | Arthrodesis, posterior, for spinal deformity, with or without cast; 7 to 12 vertebral segments                                                                                                                                                                                                                            |
| 22804 | Arthrodesis, posterior, for spinal deformity, with or without cast; 13 or more vertebral segments                                                                                                                                                                                                                         |
| 22808 | Arthrodesis, anterior, for spinal deformity, with or without cast; 2 to 3 vertebral segments                                                                                                                                                                                                                              |
| 22810 | Arthrodesis, anterior, for spinal deformity, with or without cast; 4 to 7 vertebral segments                                                                                                                                                                                                                              |
| 22812 | Arthrodesis, anterior, for spinal deformity, with or without cast; 8 or more vertebral segments                                                                                                                                                                                                                           |
| 22830 | Exploration of spinal fusion                                                                                                                                                                                                                                                                                              |

|       |                                                                                                                                                                                                                                                                     |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22840 | Posterior non-segmental instrumentation (eg, Harrington rod technique, pedicle fixation across 1 interspace, atlantoaxial transarticular screw fixation, sublaminar wiring at C1, facet screw fixation) (List separately in addition to code for primary procedure) |
| 22841 | Internal spinal fixation by wiring of spinous processes (List separately in addition to code for primary procedure)                                                                                                                                                 |
| 22842 | Posterior segmental instrumentation (eg, pedicle fixation, dual rods with multiple hooks and sublaminar wires); 3 to 6 vertebral segments (List separately in addition to code for primary procedure)                                                               |
| 22843 | Posterior segmental instrumentation (eg, pedicle fixation, dual rods with multiple hooks and sublaminar wires); 7 to 12 vertebral segments (List separately in addition to code for primary procedure)                                                              |
| 22844 | Posterior segmental instrumentation (eg, pedicle fixation, dual rods with multiple hooks and sublaminar wires); 13 or more vertebral segments (List separately in addition to code for primary procedure)                                                           |
| 22845 | Anterior instrumentation; 2 to 3 vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                     |
| 22846 | Anterior instrumentation; 4 to 7 vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                     |
| 22847 | Anterior instrumentation; 8 or more vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                  |
| 22848 | Pelvic fixation (attachment of caudal end of instrumentation to pelvic bony structures) other than sacrum (List separately in addition to code for primary procedure)                                                                                               |
| 22849 | Reinsertion of spinal fixation device                                                                                                                                                                                                                               |

|       |                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22853 | Insertion of interbody biomechanical device(s) (eg, synthetic cage, mesh) with integral anterior instrumentation for device anchoring (eg, screws, flanges), when performed, to intervertebral disc space in conjunction with interbody arthrodesis, each interspace (List separately in addition to code for primary procedure)                                                                     |
| 22854 | Insertion of intervertebral biomechanical device(s) (eg, synthetic cage, mesh) with integral anterior instrumentation for device anchoring (eg, screws, flanges), when performed, to vertebral corpectomy(ies) (vertebral body resection, partial or complete) defect, in conjunction with interbody arthrodesis, each contiguous defect (List separately in addition to code for primary procedure) |
| 22859 | Insertion of intervertebral biomechanical device(s) (eg, synthetic cage, mesh, methylmethacrylate) to intervertebral disc space or vertebral body defect without interbody arthrodesis, each contiguous defect (List separately in addition to code for primary procedure)                                                                                                                           |
| 22899 | Unlisted procedure, spine                                                                                                                                                                                                                                                                                                                                                                            |

## Medical Evidence

Kreiner et al. (2020) published a systematic review of guidelines for low back pain (LBP) diagnosis and treatment. Insufficient evidence was found to recommend for or against a particular fusion technique for the treatment of LBP. No literature evidence was found to adequately address differences in clinical outcomes or functional status for single-level vs. multilevel fusions. No studies were found to address the effectiveness of fusion over discectomy, discectomy with rhizotomy or decompression alone.<sup>14</sup>

The American College of Radiology (ACR) Expert Panel on Neurological Imaging has published appropriateness criteria related to myelopathic evaluation. Agarwal et al. (2021) updated the previous criteria for myelopathy with magnetic resonance imaging (MRI) recommended as initial imaging for acute onset myelopathy. MRI is also recommended for chronic or progressive myelopathy due to its superior resolution of soft tissue and ability to evaluate surrounding structures. Computed tomography (CT) may be appropriate, with CT myelography of possible use prior to surgical intervention.<sup>2</sup> Non-contrast MRI is usually appropriate for (LBP; radiography and CT may be appropriate for LBP with and without radiculopathy. This applies to surgical candidates with persistence or progression of symptoms having failed six weeks of medical management. MRI, CT, and CT myelography are recommended for suspected cauda equina syndrome. In cases of osteoporosis or chronic steroid use, radiography, non-contrast MRI, or CT is usually appropriate.<sup>3</sup>

Reid et al. (2019) completed a literature review regarding the current state of lumbar fusion indications and techniques for degenerative spine disease. The group states that few randomized trials exist that studied lumbar fusion for degenerative disease. Lumbar instrumentation technologies in degenerative diseases are discussed, including issues from Harrington rod implantation, such as sagittal imbalance and flatback syndrome. Pedicle screw fixation development is stated to significantly improve successful fusion rates.<sup>13</sup>

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3. Hutchins TA, Peckham M, et al. ACR appropriateness criteria – low back pain: 2021 update. *J Am Coll Radiol*. 2021;18(11S):S361–S379. doi: 10.1016/j.jacr.2021.08.002.
4. North American Spine Society (NASS). Clinical guidelines for multidisciplinary spine care: Diagnosis and treatment of adult isthmic spondylolisthesis. Published 2014. Accessed November 25, 2024. <https://www.spine.org/Portals/0/assets/downloads/ResearchClinicalCare/Guidelines/AdultIsthmicSpondylolisthesis.pdf>.
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8. Reisener, M.J., Pumberger, M., Shue, J., Girardi, F.P. and Hughes, A.P., 2020. Trends in lumbar spinal fusion—a literature review. *Journal of Spine Surgery*, 6(4), p.752.
9. Kreiner DS, Hwang SW, Easa JE, et al. An evidence-based clinical guideline for the diagnosis and treatment of lumbar disc herniation with radiculopathy. *Spine J*. 2014 Jan;14(1):180–91. doi: 10.1016/j.spinee.2013.08.003. PMID: 24239490.
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# Clinical Guideline Revision History/Information

|                                   |            |                                                                                                                                                                                                                                                   |
|-----------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Original Date: September 29, 2023 |            |                                                                                                                                                                                                                                                   |
| Review History                    |            |                                                                                                                                                                                                                                                   |
| Version 2                         | 7/25/2024  | Updated language regarding conservative treatment and nicotine use.                                                                                                                                                                               |
| Version 2A                        | 9/20/2024  | Added CPT code 22840.                                                                                                                                                                                                                             |
| Version 3                         | 12/19/2024 | <ul style="list-style-type: none"><li>• Annual review. Added thoracic criteria.</li><li>• Revised conservative care and nicotine use sections.</li><li>• Literature review- additions made</li><li>• Style updates made per Style Guide</li></ul> |





## **Cohere Medical Policy – Lumbar Spinal Fusion**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 3  
**Revision Date:** February 20, 2025

# Important Notices

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## Guideline Information:

**Specialty Area:** Diseases & Disorders of the Musculoskeletal System (M00-M99)

**Guideline Name:** Lumbar Spinal Fusion (Single Service)

**Date of last literature review:** 2/18/2025

**Document last updated:** 2/18/2025

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Lumbar Spinal Fusion***

### **Recommended Clinical Approach**

Surgery provides more rapid relief than non-surgical treatment options. Surgery can also prevent further spinal cord dysfunction and neurological deficits, particularly in moderate or severe cases.<sup>1</sup> Advanced imaging is recommended prior to surgical intervention.<sup>2-4</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ **Lumbar spinal fusion** is considered appropriate if **ALL** of the following are **TRUE**:

◆ **ANY** of the following:

- Current nicotine user with no product use for 6 weeks, and **ANY** of the following:
  - Negative lab test within 30 days; **OR**
  - Surgery is urgently required for progressive neurologic deficit; **OR**
- No history of nicotine product use within the last 12 months; **OR**
- No lifetime history of nicotine product use; **AND**

◆ **ANY** of the following is **TRUE**:

- The procedure is lumbar fusion with/without decompression, and **ALL** of the following is **TRUE**:
  - Radiographic evidence of kyphosis/scoliosis greater than 40 degrees; **AND**
  - Failure of conservative management for greater than 6 weeks, including **ALL** of the following:
    - ◆ Oral steroids, anti-inflammatory medications, or analgesics; **AND**
    - ◆ Physical therapy, including a self-directed home exercise program; **AND**
    - ◆ Facet injections, medial branch blocks (MBBs), or epidural steroid injections (ESIs); **AND**

- ◆ **ANY** of the following:
  - Corticosteroid injection if medically appropriate; **OR**
  - Corticosteroid injection is contraindicated; **OR**
- The procedure is lumbar fusion with/without decompression with radiographic evidence of instability or iatrogenic instability caused by the decompression at all levels planned to be fused and **ANY** of the following is **TRUE**<sup>5-6</sup>:
  - The patient has signs or symptoms of a potential cauda equina syndrome and **ALL** of the following<sup>7</sup>:
    - ◆ MRI reveals compressive pathology; **AND**
    - ◆ **ANY** of the following symptoms:
      - Bowel, bladder, and erectile dysfunction; **OR**
      - Diffuse motor weakness; **OR**
      - Saddle-distribution anesthesia; **OR**
  - Fracture or instability on radiographic films measuring **ANY** of the following:
    - ◆ Sagittal plane angulation greater than 11° at a single level; **OR**
    - ◆ Greater than 3.5 mm of anterior subluxation in association with radicular/cord dysfunction; **OR**
    - ◆ Subluxation at the (C1) level at the atlantodental interval of more than 3 mm in an adult and 5 mm in a child<sup>8</sup>; **OR**
  - Primary or metastatic tumor<sup>7,9</sup>; **OR**
  - The patient has lumbar stenosis and **ALL** of the following are **TRUE**:
    - ◆ **ANY** of the following lumbar stenosis symptoms<sup>5</sup>:
      - Lower extremity pain, weakness, fatigue, paresthesias, and sensory changes; **OR**
      - Gluteal and low back pain (LBP); **OR**
      - Bilateral or unilateral symptoms; **OR**
      - Symptoms may present only with activity; **OR**



- Exacerbating factors include standing, walking, and other upright exercises; **OR**
- Pain may relieve in a sitting or supine position or with forward flexion at the waist; **OR**
- Lower extremity pain that is made worse by walking; **AND**
- ◆ **ANY** of the following lumbar stenosis physical examination findings<sup>10,11</sup>:
  - Focal motor weakness or sensory deficit; **OR**
  - Decreased or absent lower extremity reflexes; **OR**
  - Wide-based gait; **OR**
  - Positive Romberg's test (poor standing balance with eyes closed); **OR**
  - Positive straight leg raise (SLR; reproduction of lower extremity pain upon extension at the knee); **AND**
- ◆ MRI reveals compressive pathology and **ANY** of the following<sup>12</sup>:
  - Failure of conservative management for greater than 6 weeks, including **ALL** of the following:
    - Oral steroids, anti-inflammatory medications, or analgesics; **AND**
    - Physical therapy, including a self-directed home exercise program; **AND**
    - Facet injections, MBBs, or ESIs; **AND**
    - **ANY** of the following:
      - ◆ Corticosteroid injection if medically appropriate; **OR**
      - ◆ Corticosteroid injection is contraindicated; **OR**
  - The patient has severe pain or disability affecting their quality of life and limiting their daily life (including working and unable to provide self-care); **OR**

- The patient has progressive neurological motor deficits; **OR**
- The patient has lumbar radiculopathy and **ALL** of the following are **TRUE**:
  - ◆ **ANY** of the following lumbar radiculopathy symptoms<sup>10</sup>:
    - Lower extremity pain, paresthesia, weakness, or numbness in a myotomal or dermatome distribution; **OR**
    - Increased pain with coughing, sneezing or straining; **OR**
    - Low back pain; **AND**
  - ◆ **ANY** of the following lumbar radiculopathy physical examination findings<sup>10,11</sup>:
    - Sensory disturbance (i.e., loss of sensation or decreased sensory response) or weakness in a dermatomal/myotomal distribution; **OR**
    - Absent or decreased Achilles reflex; **OR**
    - Reduced spinal mobility; **OR**
    - **ANY** of the following positive specialty tests:
      - Straight leg raise; **OR**
      - Crossed Lasègue's (or crossed straight leg raise); **OR**
      - Femoral nerve stretch; **OR**
      - Slump; **AND**
  - ◆ MRI reveals compressive pathology and **ANY** of the following<sup>12</sup>:
    - The patient fails to show significant improvement in pain or disability level due to symptoms, despite receiving non-surgical management for more than six (6) weeks, including **ALL** of the following (unless medically contraindicated):
      - Physical therapy, including home exercise program; **AND**

- Anti-inflammatory medications or oral steroids; **AND**
- Facet injections, MBBs, or ESIs; **OR**
- The patient has severe pain or disability affecting their quality of life and limiting their daily life (including working and being unable to provide self-care); **OR**
- The patient has progressive neurological motor deficits.

### Non-Indications

→ **Lumbar spinal fusion** may not be considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Current laboratory-confirmed nicotine use (unless surgery is urgently required for progressive neurologic deficit).

### Level of Care Criteria

Inpatient or Outpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                                          |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 20999          | Unlisted procedure, musculoskeletal system, general                                                                                       |
| 22532          | Arthrodesis, lateral extracavitary technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic |
| 22533          | Arthrodesis, lateral, lumbar                                                                                                              |
| 22534          | Each additional, thoracic or lumbar, (add-on code)                                                                                        |
| 22556          | Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic    |
| 22558          | Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); lumbar      |

|       |                                                                                                                                                                                                                                                             |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22585 | Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); each additional interspace (List separately in addition to code for primary procedure)                                        |
| 22586 | Arthrodesis, pre-sacral interbody technique, including disc space preparation, discectomy, with posterior instrumentation, with image guidance, includes bone graft when performed, L5-S1 interspace                                                        |
| 22610 | Arthrodesis, posterior or posterolateral technique, single interspace; thoracic (with lateral transverse technique, when performed)                                                                                                                         |
| 22612 | Arthrodesis, posterior or posterolateral technique, single interspace; lumbar (with lateral transverse technique, when performed)                                                                                                                           |
| 22614 | Arthrodesis, posterior or posterolateral technique, single interspace; each additional interspace (List separately in addition to code for primary procedure)                                                                                               |
| 22630 | Arthrodesis, posterior interbody technique, including laminectomy and/or discectomy to prepare interspace (other than for decompression), single interspace, lumbar                                                                                         |
| 22632 | Arthrodesis, posterior interbody technique, including laminectomy and/or discectomy to prepare interspace (other than for decompression), single interspace, lumbar; each additional interspace (List separately in addition to code for primary procedure) |
| 22633 | Arthrodesis, combined posterior or posterolateral technique with posterior interbody technique including laminectomy and/or discectomy sufficient to prepare interspace (other than for decompression), single interspace, lumbar                           |
| 22634 | Arthrodesis, combined posterior or posterolateral technique with posterior interbody technique including                                                                                                                                                    |

|       |                                                                                                                                                                                                                                                                     |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | laminectomy and/or discectomy sufficient to prepare interspace (other than for decompression), single interspace, lumbar; each additional interspace (List separately in addition to code for primary procedure)                                                    |
| 22800 | Arthrodesis, posterior, for spinal deformity, with or without cast; up to 6 vertebral segments                                                                                                                                                                      |
| 22802 | Arthrodesis, posterior, for spinal deformity, with or without cast; 7 to 12 vertebral segments                                                                                                                                                                      |
| 22804 | Arthrodesis, posterior, for spinal deformity, with or without cast; 13 or more vertebral segments                                                                                                                                                                   |
| 22808 | Arthrodesis, anterior, for spinal deformity, with or without cast; 2 to 3 vertebral segments                                                                                                                                                                        |
| 22810 | Arthrodesis, anterior, for spinal deformity, with or without cast; 4 to 7 vertebral segments                                                                                                                                                                        |
| 22812 | Arthrodesis, anterior, for spinal deformity, with or without cast; 8 or more vertebral segments                                                                                                                                                                     |
| 22830 | Exploration of spinal fusion                                                                                                                                                                                                                                        |
| 22840 | Posterior non-segmental instrumentation (eg, Harrington rod technique, pedicle fixation across 1 interspace, atlantoaxial transarticular screw fixation, sublaminar wiring at C1, facet screw fixation) (List separately in addition to code for primary procedure) |
| 22841 | Internal spinal fixation by wiring of spinous processes (List separately in addition to code for primary procedure)                                                                                                                                                 |
| 22842 | Posterior segmental instrumentation (eg, pedicle fixation, dual rods with multiple hooks and sublaminar wires); 3 to 6 vertebral segments (List separately in addition to code for primary procedure)                                                               |
| 22843 | Posterior segmental instrumentation (eg, pedicle fixation, dual rods with multiple hooks and sublaminar                                                                                                                                                             |

|       |                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | wires); 7 to 12 vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                                                                                                                                                                       |
| 22844 | Posterior segmental instrumentation (eg, pedicle fixation, dual rods with multiple hooks and sublaminar wires); 13 or more vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                                                            |
| 22845 | Anterior instrumentation; 2 to 3 vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                                                                                                                                                      |
| 22846 | Anterior instrumentation; 4 to 7 vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                                                                                                                                                      |
| 22847 | Anterior instrumentation; 8 or more vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                                                                                                                                                   |
| 22848 | Pelvic fixation (attachment of caudal end of instrumentation to pelvic bony structures) other than sacrum (List separately in addition to code for primary procedure)                                                                                                                                                                                                                                |
| 22849 | Reinsertion of spinal fixation device                                                                                                                                                                                                                                                                                                                                                                |
| 22853 | Insertion of interbody biomechanical device(s) (eg, synthetic cage, mesh) with integral anterior instrumentation for device anchoring (eg, screws, flanges), when performed, to intervertebral disc space in conjunction with interbody arthrodesis, each interspace (List separately in addition to code for primary procedure)                                                                     |
| 22854 | Insertion of intervertebral biomechanical device(s) (eg, synthetic cage, mesh) with integral anterior instrumentation for device anchoring (eg, screws, flanges), when performed, to vertebral corpectomy(ies) (vertebral body resection, partial or complete) defect, in conjunction with interbody arthrodesis, each contiguous defect (List separately in addition to code for primary procedure) |

|       |                                                                                                                                                                                                                                                                            |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22859 | Insertion of intervertebral biomechanical device(s) (eg, synthetic cage, mesh, methylmethacrylate) to intervertebral disc space or vertebral body defect without interbody arthrodesis, each contiguous defect (List separately in addition to code for primary procedure) |
| 22899 | Unlisted procedure, spine                                                                                                                                                                                                                                                  |

## Medical Evidence

In a systematic review by Lannon et al. (2021), degenerative cervical myelopathy (DCM) is described as a leading cause of spinal cord injury and spinal stenosis with increasing incidence. Early surgical referral is recommended along with conservative management to prevent progressive neurologic compromise. Surgical treatment may be recommended with clinically progressive myelopathic symptoms and cord compression as evidenced by imaging studies. A large retrospective, multicenter study with 2156 patients. Notable improvement was found in 18.8% of the patients (2-point improvement in mJOA scores) at 3-month follow-up. Among patients with severe baseline scores, improvement was noted at 12-month follow-up.<sup>13</sup>

In a 2020 clinical review, McCormick et al. discuss cervical spondylotic myelopathy including patient presentation of symptoms, preference of MRI as primary imaging, with CT myelography as an alternative in patients with contraindications, and necessity of surgery in moderate to severe cases. Prompt surgical referral is recommended.<sup>14</sup>

Kreiner et al (2020) published a systematic review of guidelines for low back pain diagnosis and treatment. Insufficient evidence was found to recommend for or against a particular fusion technique for the treatment of low back pain. No literature evidence was found to adequately address differences in clinical outcomes or functional status for single-level vs. multilevel fusions. No studies were found to address the effectiveness of fusion over discectomy, discectomy with rhizotomy or decompression alone.<sup>15</sup>

The American College of Radiology (ACR) Expert Panel on Neurological Imaging has published appropriateness criteria related to myelopathic evaluation. Agarwal et al. (2021) updated the previous criteria for myelopathy with MRI recommended as initial imaging for acute onset myelopathy. MRI is also recommended for chronic or progressive myelopathy due to its superior resolution of soft tissue and ability to evaluate surrounding structures. CT may be appropriate, with CT myelography of possible use prior to surgical intervention.<sup>2</sup> Non-contrast MRI is usually appropriate for low back pain (LBP); radiography and CT may be appropriate for LBP with and without radiculopathy. This applies to surgical candidates with persistence or progression of symptoms having failed six weeks of medical management.



MRI, CT, and CT myelography are recommended for suspected cauda equina syndrome. In cases of osteoporosis or chronic steroid use, radiography, non-contrast MRI, or CT is usually appropriate.<sup>3</sup>

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# Clinical Guideline Revision History/Information

| Original Date: September 29, 2023 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Version 2                         | 7/25/2024 | Updated language regarding conservative treatment and nicotine use.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Version 2A                        | 9/20/2024 | Added CPT code 22840.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Version 3                         | 2/20/2025 | <p>Annual Review</p> <ul style="list-style-type: none"> <li>Updated nicotine language to read: "Current nicotine user with no product use for 6 weeks, and <b>ANY</b> of the following: Negative lab test within 30 days; <b>OR</b> Surgery is urgently required for progressive neurologic deficit; <b>OR</b> No history of nicotine product use within the last 12 months; <b>OR</b> No lifetime history of nicotine product use"</li> <li>Added "Fracture or instability on radiographic films" and "Primary or metastatic tumor" indications.</li> <li>Reworded nicotine use non-indication to read, "Current laboratory-confirmed nicotine use (unless surgery is urgently required for progressive neurologic deficit)"</li> <li>Added References (8,9)</li> </ul> |



# **Cohere Medical Policy – Miscellaneous Musculoskeletal Procedures**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 1  
**Effective Date:** June 26, 2025

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Miscellaneous Musculoskeletal Procedures

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Miscellaneous Musculoskeletal Procedures***

### **Description**

This policy focuses on miscellaneous musculoskeletal services/procedures. Services/procedures are covered when the patient meets medically necessary criteria as defined by the Centers for Medicare & Medicaid Services (CMS), national society guidelines, and medical literature. Non-covered services/procedures are denied when considered not medically necessary or when it is a defined exclusion.

### **Medical Necessity Criteria**

#### **Indications**

**Capsulectomy or capsulotomy (hip) (CPT 27036)** is considered appropriate if **ANY** of the following is **TRUE**:

- Need for surgical access to the hip joint (e.g., biopsy, implant placement).<sup>1-3</sup>

**Removal of a foreign body in the thigh or knee (CPT 27372)** is considered appropriate if **ALL** of the following are **TRUE**:

- Imaging demonstrates **ANY** of the following:
  - Acute, post-traumatic, intra-articular, or soft tissue foreign body (an object that was inserted or migrated into the joint during the injury or surgical event); **OR**
  - Chronic foreign body in the soft tissue; **AND**
- Foreign body noted on exam or imaging.

#### **Non-Indications**

**Capsulectomy or capsulotomy (hip) (CPT 27036)** is not considered appropriate if **ANY** of the following is **TRUE**:

- Infection; **OR**
- Loose body removal<sup>4</sup>; **OR**



- Pathological synovium or process requiring biopsy; **OR**
- Large, irreparable labral tears when there is a risk of postoperative anterior hip instability<sup>2</sup>; **OR**
- Iatrogenic instability.<sup>3</sup>

**Removal of a foreign body in the thigh or knee (CPT 27372)** is not considered appropriate if **ANY** of the following is **TRUE**:

- Chronic stable foreign body without symptoms.

#### **Level of Care Criteria**

Inpatient or Outpatient

#### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27036                 | Capsulectomy or capsulotomy, hip, with or without excision of heterotopic bone, with release of hip flexor muscles (i.e., gluteus medius, gluteus minimus, tensor fascia latae, rectus femoris, sartorius, iliopsoas) |
| 27372                 | Removal of foreign body, deep, thigh region or knee area                                                                                                                                                              |

# Medical Evidence

## **Capsulectomy or Capsulotomy (Hip)**

Bakshi et al. (2017) noted that capsulotomy or partial capsulectomy is routinely performed during hip arthroscopy to eliminate potential barriers that may impede the surgeon.<sup>2</sup> Wach et al. (2022) performed a study to quantify capsulotomies with respect to resistance and outcomes for high-risk patients who underwent repairs for dislocations (anterior and posterior). Results of the study indicated “a decrease in capsular resistive torque in the posterior at-risk dislocation condition, but the interportal incision had no effect”.<sup>5</sup> Abrams et al. (2015) analyzed hip rotation following capsulotomy, capsulectomy, and capsular repair. Notably, external rotation increased with capsulectomy and T-capsulotomy.<sup>6</sup>

## **Removal of a Foreign Body in the Thigh or Knee**

Spinnato et al. (2022) noted the importance of the removal of a foreign body to reduce the risk of infection (e.g., cellulitis, soft tissue abscess). The authors also noted the role of imaging in locating a foreign body.<sup>7</sup> Jarraya et al. (2014) stated that MRI is less commonly utilized than other imaging modalities, however, MRI is beneficial for complicated and chronic foreign bodies.<sup>8</sup> Davis et al. (2015) noted that ultrasonography is very specific for the identification of foreign bodies in soft tissue. A detailed view of the anatomy is crucial to ensure that the foreign body does not move or cause additional damage.<sup>9</sup>

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# Clinical Guideline Revision History/Information

|                              |  |  |
|------------------------------|--|--|
| Original Date: June 26, 2025 |  |  |
| Review History               |  |  |
|                              |  |  |



## **Cohere Medical Policy – Negative Pressure Wound Therapy (NPWT)**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 2  
**Effective Date:** January 16, 2025

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Negative Pressure Wound Therapy

**Date of last literature review:** 1/7/2025

**Document last updated:** 1/16/2025

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)

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# Medical Necessity Criteria

## ***Service: Negative Pressure Wound Therapy (NPWT)***

### **Recommended Clinical Approach**

Negative pressure wound therapy (NPWT) is a method of wound care to manage wound exudates and promote wound closure utilizing durable or disposable medical equipment. NPWT involves the application of continuous or intermittent negative pressure to a properly dressed wound cavity. Suction (negative pressure) is applied under airtight wound dressings to promote the healing of open wounds resistant to prior treatments or to enhance the primary healing of high-risk surgical incisions. A vacuum-assisted closure device may improve wound health by removing edema fluid, decreasing bacterial counts, and stimulating blood flow to the region..<sup>1,2</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ **Negative pressure wound therapy (NPWT)** is considered appropriate if **ALL** of the following is **TRUE**:

◆ The patient has **ANY** of the following:

- Complications of a surgically created wound (e.g., dehiscence, post sternotomy nonunion with exposed sternal bone, post sternotomy mediastinitis, or postoperative dehiscence of the abdominal wall)<sup>1-2</sup>; **OR**
- A traumatic wound (e.g., preoperative flap or graft, exposed bones, tendons, or muscle) requiring accelerated formation of granulation tissue, which is not achievable by other wound treatments (e.g. comorbidities that will not allow for healing times usually achievable with other available wound treatments)<sup>1-2</sup>; **OR**
- A high-risk surgical wound with the documented need for preemptive NPWT to minimize complications (e.g. unsuccessful wound closure, elevated BMI, revision arthroplasty, compromised host, high risk fractures); **OR**
- No improvement in a chronic, non-healing ulcer with standard wound therapy (e.g., application of dressings,



debridement of necrotic tissue [if present], maintenance of an adequate nutritional status)<sup>1-2</sup>; **OR**

- Weekly evaluations with documentation of wound measurements (e.g., length, width, and depth) in **ANY** of the following clinical situations<sup>1-2</sup>:
  - ◆ Acute wounds; **OR**
  - ◆ Subacute and dehiscent wounds; **OR**
  - ◆ Traumatic wounds; **OR**
  - ◆ Ulcers (e.g., diabetic, vascular, pressure)<sup>3-4</sup>; **OR**
  - ◆ Flaps and grafts; **AND**
- ◆ The patient will receive treatment in **ANY** of the following settings:
  - For the home setting when **ALL** of the following are **TRUE**:
    - Enrolled in a wound therapy program that includes **ALL** of the following:
      - ◆ Documentation of plan of care, and wound measurements; **AND**
      - ◆ Application of dressings to maintain a moist wound environment; **AND**
      - ◆ Debridement of necrotic tissue if present; **AND**
      - ◆ Optimization of nutritional status; **AND**
    - **ANY** of the following:
      - ◆ Stage 3 or 4 pressure ulcer with **ALL** of the following:<sup>5</sup>
        - The patient has been appropriately turned and positioned; **AND**
        - The patient has used a group 2 or 3 support surface for pressure ulcers on the posterior trunk or pelvis; **AND**
        - The patient's moisture and incontinence have been appropriately managed; **OR**
      - ◆ Neuropathic (e.g., diabetic) ulcers with **ALL** of the following:
        - Enrolled in a comprehensive diabetic management program; **AND**
        - Reduction in pressure on an ulcer has been accomplished with appropriate modalities; **OR**
      - ◆ Venous insufficiency ulcers with **ALL** of the following:

- Compression bandages or garments have been consistently applied; **AND**
- Leg elevation and ambulation have been encouraged; **OR**
- For the inpatient setting, when **ALL** of the following are **TRUE**:
  - Criteria listed above for the home setting have been tried, considered, or ruled out; **AND**
  - NPWT is the best available treatment option to improve the patient's condition; **AND**
  - Acceleration of granulation tissue formation is necessary and the patient has complications due to **ANY** of the following:
    - ◆ Surgically created wound (e.g., dehiscence, post debridement); **OR**
    - ◆ Traumatic wound (e.g., preoperative flap or graft); **OR**
    - ◆ High risk primary surgical wound; **OR**
    - ◆ Chronic non-healing wounds.

## Non-Indications

- **Negative pressure wound therapy (NPWT)** is not considered appropriate if **ANY** of the following is **TRUE**<sup>5,6</sup>:
- ◆ Active bleeding or exposed vasculature in the wound; **OR**
  - ◆ Eschar or necrotic tissue requiring debridement; **OR**
  - ◆ Exposed nerves or organs; **OR**
  - ◆ Fistulas to body organs or cavities that require investigation; **OR**
  - ◆ Malignancy in wound bed.

## Level of Care Criteria

Inpatient or Outpatient

## Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                           |
|----------------|------------------------------------------------------------------------------------------------------------|
| A6550          | Wound care set, for negative pressure wound therapy electrical pump, includes all supplies and accessories |
| A7000          | Canister, disposable, used with suction pump, each                                                         |

|       |                                                                                                                                                                                                                                                                                                                                                                |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E2402 | Negative pressure wound therapy electrical pump, stationary or portable                                                                                                                                                                                                                                                                                        |
| 97605 | Negative pressure wound therapy (eg, vacuum assisted drainage collection), utilizing durable medical equipment (DME), including topical application(s), wound assessment, and instruction(s) for ongoing care, per session; total wound(s) surface area less than or equal to 50 square centimeters                                                            |
| 97606 | Negative pressure wound therapy (eg, vacuum assisted drainage collection), utilizing durable medical equipment (DME), including topical application(s), wound assessment, and instruction(s) for ongoing care, per session; total wound(s) surface area greater than 50 square centimeters                                                                     |
| 97607 | Negative pressure wound therapy, (eg, vacuum assisted drainage collection), utilizing disposable, non-durable medical equipment including provision of exudate management collection system, topical application(s), wound assessment, and instructions for ongoing care, per session; total wound(s) surface area less than or equal to 50 square centimeters |
| 97608 | Negative pressure wound therapy, (eg, vacuum assisted drainage collection), utilizing disposable, non-durable medical equipment including provision of exudate management collection system, topical application(s), wound assessment, and instructions for ongoing care, per session; total wound(s) surface area greater than 50 square centimeters          |

## Medical Evidence

Seidel et al. (2022) report on the results of the randomized clinical trial (RCT) for post-surgical subcutaneous abdominal wound healing impairments (SAWHI). Outpatient negative pressure wound therapy (NPWT) is recommended and reduces hospitalization and is an alternative to conventional wound treatment (CWT). Results show that NPWT treatment time is 7.8 days less than CWT. The wound closure rate is 20% higher with NPWT, yet hospitalization is two days longer than with CWT. Most patients in the study were in the hospital for less than 42 days.<sup>7-8</sup>

Seidel et al. (2022) also report on the DiaFu RCT that compared NPWT with standard moist wound care (SMWC) for diabetic foot ulcers following amputation, surgical debridement, or wound cleansing. A total of 368 patients were included and assigned to either the NPWT or SMWC group. Results support the use of NPWT with evidence of less frequent daily dressing changes, decreased treatment time (16 days less than with SMWC), and a decrease in time for surgical debridement (23.3 minutes less).<sup>9</sup>

Song et al. (2021) conducted a meta-analysis comparing the benefits and efficacy of NPWT for III/IV pressure injuries with standard wound care (SWC). The authors compared 16 randomized control trials representing 629 patients. Among the outcomes included were complete ulcer healing rate, wound healing time, and pain score. The resulting meta-analysis suggests NPWT is associated with greater improvements and shortening healing times for pressure injuries. However, the authors caution that these results still need to be confirmed by high-quality multicenter RCTs.<sup>2</sup>

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# Clinical Guideline Revision History/Information

| Original Date: October 23, 2023 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Version 2                       | 1/16/2025 | <p>Annual Review</p> <ul style="list-style-type: none"> <li>Updated recommended clinical approach language.</li> <li>Made the following changes to indications: <ul style="list-style-type: none"> <li>Added high-risk surgical wound indication.</li> <li>Removed specific ulcer types under the weekly evaluation indication.</li> <li>Added additional sub-bullets under the acceleration of granulation tissue formation indication.</li> </ul> </li> <li>Made the following changes to non-indications: <ul style="list-style-type: none"> <li>Removed soft tissue infection from non-indications.</li> <li>Updated medical reference section.</li> <li>Updates references</li> </ul> </li> </ul> |
|                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



# **Cohere Medical Policy – Omnibus Codes (Musculoskeletal Care and Pain Management)**

*Clinical Policy for Medical Necessity Review*

**Version:** 1

**Policy Number:** CHP-319-1

**Cohere Health UMC Approval Date:** April 9, 2026

Last Annual Review: Not Applicable

Revision: Not Applicable

Next Annual Review: April 9, 2027

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy – Omnibus Codes (Musculoskeletal Care and Pain Management)

**Policy Number:** CHP-319-1

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)



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# Overview

## ***Service: Omnibus Codes (Musculoskeletal & Pain)***

This policy applies to all lines of business, including Medicare Advantage plans.

### **Documentation Requirements**

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information is necessary at the time of submission to determine medical necessity. Documentation should include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a recent clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously, or within the past 3 months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request;
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed;

- How the results will impact patient management or treatment decisions.

Duplicate exams or requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed and/or treated with a single study or procedure.

### **Category III Codes**

Cohere Health considers the codes listed in this policy to be clinically unproven and not medically necessary, given inconclusive evidence of their effectiveness. In specific instances, a procedure may be covered when there is evidence-based guidance addressing the indications associated with a category III code. This includes, but is not limited to:

- Centers for Medicare & Medicaid (CMS) Services National or Local Coverage Determinations (NCDs or LCDs);
- State-specific guidance;
- Clinical policy authored by Cohere Health; and
- Third-party criteria as delegated by the Health Plan.

The American Medical Association (AMA) is responsible for developing Current Procedural Terminology (CPT) Category III codes to track the utilization of emerging technologies, services, and procedures. The Category III CPT code description does not establish a service or procedure as safe, effective, or applicable to the clinical practice of medicine.<sup>1</sup> The codes apply to a procedure or service that is (or has been) performed on a patient and any of the following<sup>2</sup>:

- There is support by at least one CPT or Health Care Professionals Advisory Committee (HCPAC) member that represents providers who would use the procedure or service;
- The potential or actual clinical efficacy is supported by evidence-based, peer-reviewed literature;
- There is at least one approved study protocol by an Institutional Review Board (IRB) for the procedure or service; a current trial in the United States (ongoing or current) that outlines efficacy; or other evidence of clinical utilization.

Section 1862(a)(1)(A) of the Social Security Act (SSA) is the statutory basis for denying payment for types of care, items, services, and procedures, not excluded by any other statutory clause, while meeting all technical requirements for coverage, that are determined to be any of the following<sup>1</sup>:

1. Not generally accepted by the medical community as safe and effective in the setting and for the condition for which it is used;
2. Not proven safe and effective based on peer review or scientific literature;
3. Experimental;
4. Not medically necessary for a particular patient;
5. Furnished at a level, duration, or frequency that is not medically appropriate;
6. Not furnished in accordance with accepted standards of medical practice; or
7. Not furnished in a setting appropriate to the patient's medical needs and condition.

Items and services must be established as safe and effective to be considered medically necessary. That is, the items and services must be<sup>1</sup>:

1. Consistent with the symptoms of diagnosis of the illness or injury under treatment;
2. Necessary for, and consistent with, generally accepted professional medical standards of care (e.g., not experimental);
3. Not furnished primarily for the convenience of the patient, the provider, or supplier; and
4. Furnished at the most appropriate level of care that can be provided safely and effectively to the patient.

Medical devices that are not approved for marketing by the US Food & Drug Administration (FDA) are considered investigational and are not considered reasonable and necessary under Section 1862(a)(1)(A) of the SSA. Medicare payment, therefore, may not be made for procedures performed using devices that have not been approved for marketing by the FDA unless performed within the context of a clinical trial qualifying under the CMS NCD for Routine Costs in Clinical Trials (310.1) or in an approved FDA Investigational Device Exemption (IDE) trial.<sup>1</sup>

Applicable policies that consider a CPT Category III code medically necessary are noted in the coding table below. Due to the frequent updates from the AMA and CMS, the codes listed in this policy may not be all-inclusive. Codes that are deleted and not effective at the designated time of service may be ineligible for reimbursement.

### **Experimental & Investigational Codes**

Cohere Health considers experimental and investigational codes not covered when there is insufficient evidence of safety or efficacy. Government approval does not imply that a service is medically appropriate or that it has been researched and cited in the medical literature for the proposed condition or diagnosis. The codes may also be used for conditions that do not align with standard medical practice. Examples include biologic products, drugs, medical devices, procedures, supplies, technologies, transplants, and treatments. The following are used to determine if a service is experimental and investigational:

- US Food & Drug Administration (FDA) approval for proposed use, including application status, if a new drug or device;
- Strength of evidence-based peer-reviewed literature, including the need for additional clinical trials or studies to determine safety and efficacy;
- Technology assessment that demonstrates improved health outcomes, including outside an investigational setting, and proves superior efficacy compared to any established alternative; or
- Applicable federal or state regulations.

## **Unlisted Codes**

An unlisted code refers to a service, procedure, or device that lacks an assigned CPT or HCPCS code. The code may be covered or not covered. The code description usually begins with “unlisted,” ends in “99,” and requires prior authorization. An unlisted code is used when another code does not describe the service, procedure, or item. An unlisted code includes any of the following:

- Non-Specified;
- Not Elsewhere Specified (NEC);
- Not Listed;
- Not Otherwise Classified (NOC);
- Not Otherwise Specified (NOS);
- Unclassified;
- Unlisted; or
- Unspecified.

## Procedure Codes (CPT/HCPCS)

### Category III Codes

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                      | Conclusion  |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0054T          | Computer-assisted musculoskeletal surgical navigational orthopedic procedure, with image-guidance based on fluoroscopic images (List separately in addition to code for primary procedure)                            | Not Covered |
| 0055T          | Computer-assisted musculoskeletal surgical navigational orthopedic procedure, with image-guidance based on CT/MRI images (List separately in addition to code for primary procedure)                                  | Not Covered |
| 0864T          | Low-intensity extracorporeal shock wave therapy involving corpus cavernosum, low energy                                                                                                                               | Not Covered |
| 0101T          | Extracorporeal shock wave involving musculoskeletal system, not otherwise specified                                                                                                                                   | Not Covered |
| 0102T          | Extracorporeal shock wave performed by a physician, requiring anesthesia other than local, and involving the lateral humeral epicondyle                                                                               | Not Covered |
| 0106T          | Quantitative sensory testing (QST), testing and interpretation per extremity; using touch pressure stimuli to assess large diameter sensation                                                                         | Not Covered |
| 0107T          | Quantitative sensory testing (QST), testing and interpretation per extremity; using vibration stimuli to assess large diameter fiber sensation                                                                        | Not Covered |
| 0108T          | Quantitative sensory testing (QST), testing and interpretation per extremity; using cooling stimuli to assess small nerve fiber sensation and hyperalgesia                                                            | Not Covered |
| 0109T          | Quantitative sensory testing (QST), testing and interpretation per extremity; using heat-pain stimuli to assess small nerve fiber sensation and hyperalgesia                                                          | Not Covered |
| 0110T          | Quantitative sensory testing (QST), testing and interpretation per extremity; using other stimuli to assess sensation                                                                                                 | Not Covered |
| 0200T          | Percutaneous sacral augmentation (sacroplasty), unilateral injection(s), including the use of a balloon or mechanical device, when used, 1 or more needles, includes imaging guidance and bone biopsy, when performed | Not Covered |
| 0201T          | Percutaneous sacral augmentation (sacroplasty),                                                                                                                                                                       | Not Covered |



|       |                                                                                                                                                                                                                                                                           |             |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
|       | bilateral injections, including the use of a balloon or mechanical device, when used, 2 or more needles, includes imaging guidance and bone biopsy, when performed                                                                                                        |             |
| 0202T | Posterior vertebral joint(s) arthroplasty (eg, facet joint[s] replacement), including facetectomy, laminectomy, foraminotomy, and vertebral column fixation, injection of bone cement, when performed, including fluoroscopy, single level, lumbar spine                  | Not Covered |
| 0213T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; single level                                                                                  | Not Covered |
| 0214T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; second level (List separately in addition to code for primary procedure)                      | Not Covered |
| 0215T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; third and any additional level(s) (List separately in addition to code for primary procedure) | Not Covered |
| 0216T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; single level                                                                                      | Not Covered |
| 0217T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; second level (List separately in addition to code for primary procedure)                          | Not Covered |
| 0218T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; third and any additional level(s) (List separately in addition to code for primary procedure)     | Not Covered |
| 0219T | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; cervical                                                                                                  | Not Covered |
| 0220T | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; thoracic                                                                                                  | Not Covered |

|       |                                                                                                                                                                                                                                                                                                                                    |             |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0221T | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; lumbar                                                                                                                                                             | Not Covered |
| 0222T | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; each additional vertebral segment (List separately in addition to code for primary procedure)                                                                      | Not Covered |
| 0232T | Injection(s), platelet rich plasma, any site, including image guidance, harvesting and preparation when performed                                                                                                                                                                                                                  | Not Covered |
| 0263T | Intramuscular autologous bone marrow cell therapy, with preparation of harvested cells, multiple injections, one leg, including ultrasound guidance, if performed; complete procedure including unilateral or bilateral bone marrow harvest                                                                                        | Not Covered |
| 0264T | Intramuscular autologous bone marrow cell therapy, with preparation of harvested cells, multiple injections, one leg, including ultrasound guidance, if performed; complete procedure excluding bone marrow harvest                                                                                                                | Not Covered |
| 0265T | Intramuscular autologous bone marrow cell therapy, with preparation of harvested cells, multiple injections, one leg, including ultrasound guidance, if performed; unilateral or bilateral bone marrow harvest only for intramuscular autologous bone marrow cell therapy                                                          | Not Covered |
| 0274T | Percutaneous laminotomy/laminectomy (interlaminar approach) for decompression of neural elements, (with or without ligamentous resection, discectomy, facetectomy and/or foraminotomy), any method, under indirect image guidance (eg, fluoroscopic, CT), single or multiple levels, unilateral or bilateral; cervical or thoracic | Not Covered |
| 0278T | Transcutaneous electrical modulation pain reprocessing (eg, scrambler therapy), each treatment session (includes placement of electrodes)                                                                                                                                                                                          | Not Covered |
| 0335T | Insertion of sinus tarsi implant                                                                                                                                                                                                                                                                                                   | Not Covered |
| 0347T | Placement of interstitial device(s) in bone for radiostereometric analysis (RSA)                                                                                                                                                                                                                                                   | Not Covered |
| 0348T | Radiologic examination, radiostereometric analysis (RSA); spine, (includes cervical, thoracic and lumbosacral, when performed)                                                                                                                                                                                                     | Not Covered |
| 0349T | Radiologic examination, radiostereometric analysis (RSA); upper extremity(ies), (includes shoulder, elbow,                                                                                                                                                                                                                         | Not Covered |

|       |                                                                                                                                                                                                                                                                                                                           |             |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
|       | and wrist, when performed)                                                                                                                                                                                                                                                                                                |             |
| 0350T | Radiologic examination, radiostereometric analysis (RSA); lower extremity(ies), (includes hip, proximal femur, knee, and ankle, when performed)                                                                                                                                                                           | Not Covered |
| 0440T | Ablation, percutaneous, cryoablation, includes imaging guidance; upper extremity distal/peripheral nerve                                                                                                                                                                                                                  | Not Covered |
| 0441T | Ablation, percutaneous, cryoablation, includes imaging guidance; lower extremity distal/peripheral nerve                                                                                                                                                                                                                  | Not Covered |
| 0442T | Ablation, percutaneous, cryoablation, includes imaging guidance; nerve plexus or other truncal nerve (eg, brachial plexus, pudendal nerve)                                                                                                                                                                                | Not Covered |
| 0481T | Injection(s), autologous white blood cell concentrate (autologous protein solution), any site, including image guidance, harvesting and preparation, when performed                                                                                                                                                       | Not Covered |
| 0489T | Autologous adipose-derived regenerative cell therapy for scleroderma in the hands; adipose tissue harvesting, isolation and preparation of harvested cells including incubation with cell dissociation enzymes, removal of non-viable cells and debris, determination of concentration and dilution of regenerative cells | Not Covered |
| 0490T | Autologous adipose-derived regenerative cell therapy for scleroderma in the hands; multiple injections in one or both hands                                                                                                                                                                                               | Not Covered |
| 0510T | Removal of sinus tarsi implant                                                                                                                                                                                                                                                                                            | Not Covered |
| 0511T | Removal and reinsertion of sinus tarsi implant                                                                                                                                                                                                                                                                            | Not Covered |
| 0512T | Extracorporeal shock wave for integumentary wound healing, including topical application and dressing care; initial wound                                                                                                                                                                                                 | Not Covered |
| 0513T | Extracorporeal shock wave for integumentary wound healing, including topical application and dressing care; each additional wound (List separately in addition to code for primary procedure)                                                                                                                             | Not Covered |
| 0535T | Continuous recording of movement disorder symptoms, including bradykinesia, dyskinesia, and tremor for 6 days up to 10 days; includes set-up, patient training, configuration of monitor, data upload, analysis and initial report configuration, download review, interpretation and report                              | Not Covered |
| 0536T | Continuous recording of movement disorder symptoms, including bradykinesia, dyskinesia, and tremor for 6 days up to 10 days; set-up, patient training, configuration of monitor                                                                                                                                           | Not Covered |

|       |                                                                                                                                                                                                                                                                                                          |             |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0547T | Bone-material quality testing by microindentation(s) of the tibia(s), with results reported as a score                                                                                                                                                                                                   | Not Covered |
| 0552T | Low-level laser therapy, dynamic photonic and dynamic thermokinetic energies, provided by a physician or other qualified health care professional                                                                                                                                                        | Not Covered |
| 0554T | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; retrieval and transmission of the scan data, assessment of bone strength and fracture risk and bone-mineral density, interpretation and report | Not Covered |
| 0555T | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; retrieval and transmission of the scan data                                                                                                    | Not Covered |
| 0556T | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; assessment of bone strength and fracture risk and bone-mineral density                                                                         | Not Covered |
| 0557T | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; interpretation and report                                                                                                                      | Not Covered |
| 0565T | Autologous cellular implant derived from adipose tissue for the treatment of osteoarthritis of the knees; tissue harvesting and cellular implant creation                                                                                                                                                | Not Covered |
| 0566T | Autologous cellular implant derived from adipose tissue for the treatment of osteoarthritis of the knees; injection of cellular implant into knee joint including ultrasound guidance, unilateral                                                                                                        | Not Covered |
| 0594T | Osteotomy, humerus, with insertion of an externally controlled intramedullary lengthening device, including intraoperative imaging, initial and subsequent alignment assessments, computations of adjustment schedules, and management of the intramedullary lengthening device                          | Not Covered |
| 0598T | Noncontact real-time fluorescence wound imaging, for bacterial presence, location, and load, per session; first anatomic site (eg, lower extremity)                                                                                                                                                      | Not Covered |
| 0599T | Noncontact real-time fluorescence wound imaging, for bacterial presence, location, and load, per session; each additional anatomic site (eg, upper extremity) (List                                                                                                                                      | Not Covered |

|       |                                                                                                                                                                                                                                                              |             |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
|       | separately in addition to code for primary procedure)                                                                                                                                                                                                        |             |
| 0627T | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; first level                                                                           | Not Covered |
| 0628T | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; each additional level (List separately in addition to code for primary procedure)     | Not Covered |
| 0629T | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; first level                                                                                     | Not Covered |
| 0630T | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; each additional level (List separately in addition to code for primary procedure)               | Not Covered |
| 0640T | Noncontact near-infrared spectroscopy (eg, for measurement of deoxyhemoglobin, oxyhemoglobin, and ratio of tissue oxygenation), other than for screening for peripheral arterial disease, image acquisition, interpretation, and report; first anatomic site | Not Covered |
| 0656T | Anterior lumbar or thoracolumbar vertebral body tethering; up to 7 vertebral segments                                                                                                                                                                        | Not Covered |
| 0657T | Anterior lumbar or thoracolumbar vertebral body tethering; 8 or more vertebral segments                                                                                                                                                                      | Not Covered |
| 0691T | Automated analysis of an existing computed tomography study for vertebral fracture(s), including assessment of bone density when performed, data preparation, interpretation, and report                                                                     | Not Covered |
| 0693T | Comprehensive full body computer-based markerless 3D kinematic and kinetic motion analysis and report                                                                                                                                                        | Not Covered |
| 0707T | Injection(s), bone-substitute material (eg, calcium phosphate) into subchondral bone defect (ie, bone marrow lesion, bone bruise, stress injury, microtrabecular fracture), including imaging guidance and arthroscopic assistance for joint visualization   | Not Covered |
| 0717T | Autologous adipose-derived regenerative cell (ADRC) therapy for partial thickness rotator cuff tear; adipose tissue harvesting, isolation and preparation of harvested cells, including incubation with cell dissociation enzymes,                           | Not Covered |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                      |             |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
|       | filtration, washing, and concentration of ADRCs                                                                                                                                                                                                                                                                                                                                                                      |             |
| 0718T | Autologous adipose-derived regenerative cell (ADRC) therapy for partial thickness rotator cuff tear; injection into supraspinatus tendon including ultrasound guidance, unilateral                                                                                                                                                                                                                                   | Not Covered |
| 0719T | Posterior vertebral joint replacement, including bilateral facetectomy, laminectomy, and radical discectomy, including imaging guidance, lumbar spine, single segment                                                                                                                                                                                                                                                | Not Covered |
| 0733T | Remote real-time, motion capture-based neurorehabilitative therapy ordered by a physician or other qualified health care professional; supply and technical support, per 30 days                                                                                                                                                                                                                                     | Not Covered |
| 0734T | Remote real-time, motion capture-based neurorehabilitative therapy ordered by a physician or other qualified health care professional; treatment management services by a physician or other qualified health care professional, per calendar month                                                                                                                                                                  | Not Covered |
| 0737T | Xenograft implantation into the articular surface                                                                                                                                                                                                                                                                                                                                                                    | Not Covered |
| 0743T | Bone strength and fracture risk using finite element analysis of functional data and bone mineral density (BMD), with concurrent vertebral fracture assessment, utilizing data from a computed tomography scan, retrieval and transmission of the scan data, measurement of bone strength and BMD and classification of any vertebral fractures, with overall fracture-risk assessment, interpretation and report    | Not Covered |
| 0749T | Bone strength and fracture-risk assessment using digital X-ray radiogrammetry-bone mineral density (DXR-BMD) analysis of bone mineral density (BMD) utilizing data from a digital X ray, retrieval and transmission of digital X-ray data, assessment of bone strength and fracture risk and BMD, interpretation and report;                                                                                         | Not Covered |
| 0750T | Bone strength and fracture-risk assessment using digital X-ray radiogrammetry-bone mineral density (DXR-BMD) analysis of bone mineral density (BMD) utilizing data from a digital X ray, retrieval and transmission of digital X-ray data, assessment of bone strength and fracture risk and BMD, interpretation and report; with single-view digital X-ray examination of the hand taken for the purpose of DXR-BMD | Not Covered |
| 0766T | Transcutaneous magnetic stimulation by focused low-frequency electromagnetic pulse, peripheral nerve,                                                                                                                                                                                                                                                                                                                | Not Covered |

|       |                                                                                                                                                                                                                                                                                                                                                            |             |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
|       | with identification and marking of the treatment location, including noninvasive electroneurographic localization (nerve conduction localization), when performed; first nerve                                                                                                                                                                             |             |
| 0767T | Transcutaneous magnetic stimulation by focused low-frequency electromagnetic pulse, peripheral nerve, with identification and marking of the treatment location, including noninvasive electroneurographic localization (nerve conduction localization), when performed; each additional nerve (List separately in addition to code for primary procedure) | Not Covered |
| 0777T | Real-time pressure-sensing epidural guidance system (List separately in addition to code for primary procedure)                                                                                                                                                                                                                                            | Not Covered |
| 0778T | Surface mechanomyography (sMMG) with concurrent application of inertial measurement unit (IMU) sensors for measurement of multi-joint range of motion, posture, gait, and muscle function                                                                                                                                                                  | Not Covered |
| 0783T | Transcutaneous auricular neurostimulation, set-up, calibration, and patient education on use of equipment                                                                                                                                                                                                                                                  | Not Covered |
| 0784T | Insertion or replacement of percutaneous electrode array, spinal, with integrated neurostimulator, including imaging guidance, when performed                                                                                                                                                                                                              | Not Covered |
| 0785T | Revision or removal of neurostimulator electrode array, spinal, with integrated neurostimulator                                                                                                                                                                                                                                                            | Not Covered |
| 0790T | Revision (eg, augmentation, division of tether), replacement, or removal of thoracolumbar or lumbar vertebral body tethering, including thoracoscopy, when performed                                                                                                                                                                                       | Not Covered |
| 0791T | Motor-cognitive, semi-immersive virtual reality-facilitated gait training, each 15 minutes (List separately in addition to code for primary procedure)                                                                                                                                                                                                     | Not Covered |
| 0814T | Percutaneous injection of calcium-based biodegradable osteoconductive material, proximal femur, including imaging guidance, unilateral                                                                                                                                                                                                                     | Not Covered |
| 0815T | Ultrasound-based radiofrequency echographic multi-spectrometry (REMS), bone-density study and fracture-risk assessment, 1 or more sites, hips, pelvis, or spine                                                                                                                                                                                            | Not Covered |
| 0859T | Noncontact near-infrared spectroscopy (e.g., for measurement of deoxyhemoglobin, oxyhemoglobin, and ratio of tissue oxygenation), other                                                                                                                                                                                                                    | Not Covered |

|       |                                                                                                                                                                                                                                                                                    |             |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
|       | than for screening for peripheral arterial disease, image acquisition, interpretation, and report; each additional anatomic site (List separately in addition to code for primary procedure)                                                                                       |             |
| 0869T | Injection(s), bone-substitute material for bone and/or soft tissue hardware fixation augmentation, including intraoperative imaging guidance, when performed                                                                                                                       | Not Covered |
| 0882T | Intraoperative therapeutic electrical stimulation of peripheral nerve to promote nerve regeneration, including lead placement and removal, upper extremity, minimum of 10 minutes; initial nerve (List separately in addition to code for primary procedure)                       | Not Covered |
| 0883T | Intraoperative therapeutic electrical stimulation of peripheral nerve to promote nerve regeneration, including lead placement and removal, upper extremity, minimum of 10 minutes; each additional nerve (List separately in addition to code for primary procedure)               | Not Covered |
| 0901T | Placement of bone marrow sampling port, including imaging guidance when performed                                                                                                                                                                                                  | Not Covered |
| 0946T | Orthopedic implant movement analysis using paired computed tomography (CT) examination of the target structure, including data acquisition, data preparation and transmission, interpretation and report (including CT scan of the joint or extremity performed with paired views) | Not Covered |
| 1003T | Arthroplasty, first carpometacarpal joint, with distal trapezial and proximal first metacarpal prosthetic replacement (eg, first carpometacarpal total joint)                                                                                                                      | Not Covered |



## Experimental & Investigational (E&I) Codes

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                                                                                                         | Conclusion  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 62287          | Decompression, percutaneous, of nucleus pulposus of intervertebral disc, any method utilizing needle-based technique to remove disc material under fluoroscopic imaging or other form of indirect visualization, with discography and/or epidural injection(s) at the treated level(s), when performed, single or multiple levels, lumbar                                | Not Covered |
| 62330          | Decompression, percutaneous, with partial removal of the ligamentum flavum, including laminotomy for access, epidurography, and imaging guidance (ie, CT or fluoroscopy), bilateral; one interspace, lumbar                                                                                                                                                              | Not Covered |
| 62331          | Decompression, percutaneous, with partial removal of the ligamentum flavum, including laminotomy for access, epidurography, and imaging guidance (ie, CT or fluoroscopy), bilateral; additional interspace(s), lumbar (List separately in addition to code for primary procedure)                                                                                        | Not Covered |
| 63032          | Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; with repair of annular defect by implantation of bone-anchored annular closure device, including all imaging guidance, 1 interspace, lumbar (List separately in addition to code for primary procedure) | Not Covered |
| 64624          | Destruction by neurolytic agent, genicular nerve branches including imaging guidance, when performed                                                                                                                                                                                                                                                                     | Not Covered |
| 64625          | Radiofrequency ablation, nerves innervating the sacroiliac joint, with image guidance (ie, fluoroscopy or computed tomography)                                                                                                                                                                                                                                           | Not Covered |
| 64561          | Percutaneous implantation of neurostimulator electrode array; sacral nerve (transforaminal placement)                                                                                                                                                                                                                                                                    | Not Covered |

|       |                                                                                                                           |             |
|-------|---------------------------------------------------------------------------------------------------------------------------|-------------|
|       | including image guidance, if performed                                                                                    |             |
| 93998 | Unlisted noninvasive vascular diagnostic study [when used to report contact near-infrared spectroscopy studies of wounds] | Not Covered |

## Unlisted Codes

| CPT/HCPCS Code | Code Description                                    | Conclusion                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20999          | Unlisted procedure, musculoskeletal system, general | See <i>Cervical Spinal Fusion, Lumbar Spinal Fusion, or Sacroiliac Joint Fusion</i> for covered indications.<br><br>Not covered for all other indications.                                                                                                                                                                                                                                 |
| 22899          | Unlisted procedure, spine                           | See <i>Cervical Spinal Fusion, Lumbar Spinal Fusion, Facet Joint Allograft Implants, Facet Joint Radiofrequency Ablation (RFA), Kyphectomy, Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy), Pediatric Vertebral Body Tethering, Vertebral Body Tethering, or Vertebral Corpectomy</i> for covered indications.<br><br>Not covered for all other indications. |
| 23929          | Unlisted procedure, shoulder                        | See <i>Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder), Shoulder Arthroplasty, or Shoulder Arthroscopy</i> for covered indications.<br><br>Not covered for all other indications.                                                                                                                                                                                                   |
| 27299          | Unlisted procedure, pelvis or hip joint             | See <i>Hip Arthroscopy, Hip Core Decompression with or without Bone Grafting, Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder), or Periacetabular</i>                                                                                                                                                                                                                                |

|       |                                                                  |                                                                                                                                                                                                                         |
|-------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                                                                  | <p><i>Osteotomy/Surgical Dislocation</i> for covered indications.</p> <p>Not covered for all other indications.</p>                                                                                                     |
| 27599 | Unlisted procedure, femur or knee                                | <p>See <i>Knee Arthroplasty, Knee Arthroscopy, or Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder)</i> for covered indications.</p> <p>Not covered for all other indications.</p>                                 |
| 28899 | Unlisted procedure of foot and toes                              | <p>See <i>Hammertoe, Claw Toe, or Mallet Toe Surgical Treatment with or without Fusion</i> for covered indications.</p> <p>Not covered for all other indications.</p>                                                   |
| 29999 | Unlisted procedure, arthroscopy                                  | <p>See <i>Hip Arthroscopy, Knee Arthroscopy, Knee Arthroscopy, or Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder)</i> for covered indications.</p> <p>Not covered for all other indications.</p>                 |
| 64999 | Unlisted procedure, nervous system                               | <p>See <i>Carpal Tunnel Release, Epidural Steroid Injections (ESI), Facet Joint Injections, or Facet Joint Radiofrequency Ablation (RFA)</i> for covered indications.</p> <p>Not covered for all other indications.</p> |
| 97039 | Unlisted modality (specify type and time if constant attendance) | <p>See <i>Physical and Occupational Therapy</i> for covered indications.</p> <p>Not covered for all other indications.</p>                                                                                              |
| 97139 | Unlisted therapeutic procedure (specify)                         | <p>See <i>Physical and Occupational Therapy</i> for covered indications.</p>                                                                                                                                            |

|       |                                                                |                                                                                                                     |
|-------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|       |                                                                | Not covered for all other indications.                                                                              |
| 97799 | Unlisted physical medicine/rehabilitation service or procedure | See <i>Physical and Occupational Therapy</i> for covered indications.<br><br>Not covered for all other indications. |

## Medical Necessity Criteria and Medical Evidence

### Category III Codes

#### Computer-Assisted Navigation (CAN) for Use with a Musculoskeletal Surgical Procedure

| CPT/HCPCS Code | Code Description                                                                                                                                                                           | Conclusion  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0054T          | Computer-assisted musculoskeletal surgical navigational orthopedic procedure, with image-guidance based on fluoroscopic images (List separately in addition to code for primary procedure) | Not Covered |
| 0055T          | Computer-assisted musculoskeletal surgical navigational orthopedic procedure, with image-guidance based on CT/MRI images (List separately in addition to code for primary procedure)       | Not Covered |

**Computer-assisted navigation (CAN) for use with a musculoskeletal surgical procedure** is not considered appropriate as it is clinically unproven and not medically necessary.

Kim et al. (2018) conducted a randomized controlled trial (RCT) that compared survival and complication rates among patients who underwent same-day bilateral total knee arthroplasty (TKA). Conventional TKA was performed on one knee while the other knee was operated on using CAN. The trial included 282 patients (564 knees); 22% underwent arthroscopic debridement in one or both knees. CAN showed no efficacy in pain relief, improved function, or survival. Research lacked high-quality evidence that

supported the use of CAN in orthopedic surgical procedures. Long-term results did not improve with CAN compared with patients who received conventional TKA. Additional research should focus on pediatric patients, osteolysis, mechanical demands, prosthetic failure, and TKA revision.<sup>3</sup>

Several RCTs examined the use of CAN in total hip arthroplasty (THA). Lourens et al. (2025) reported on a large study conducted by the Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR) on PROMs in patients who underwent conventional THA (n=13,400) versus THA with CAN (n=749). Patient satisfaction was slightly higher in the navigation group than in the conventional group (rate ratio 1.03, 95% CI 1.01 to 1.06,  $P = 0.02$ ). At 4-year follow-up, Oxford Hip Score (OHS) and early EuroQol-visual analog scales (EQ-VASs) between conventional and navigation groups were not statistically significant. The authors noted that CAN is useful, but future research is needed on long-term outcomes.<sup>4</sup>

Zhou et al. (2024) conducted a prospective, multicenter RCT comparing CAN versus conventional THA for acetabular prosthesis placement accuracy. A total of 113 patients were included in the study: 55 in the control (conventional THA) group and 58 in the experimental (navigation) group. The average operative time was shorter with conventional THA ( $92.6 \pm 42.1$  min) than with CAN ( $112.5 \pm 31.3$  min). Dislocation rates did not differ significantly between the control (1.6%) and experimental group (0%).<sup>5</sup>

The American Academy of Orthopaedic Surgeons (AAOS) (2023) published a clinical practice guideline for the surgical management of osteoarthritis of the knee.<sup>6,7</sup> Despite the advantages of surgical navigation, the AAOS stated that evidence is lacking on outcomes, specifically pain and function.

## **Extracorporeal Shock Wave Therapy (ESWT) for Musculoskeletal Conditions**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                       | <b>Conclusion</b> |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0101T                 | Extracorporeal shock wave involving musculoskeletal system, not otherwise specified                                                                                                           | Not Covered       |
| 0102T                 | Extracorporeal shock wave performed by a physician, requiring anesthesia other than local, and involving the lateral humeral epicondyle                                                       | Not Covered       |
| 0512T                 | Extracorporeal shock wave for integumentary wound healing, including topical application and dressing care; initial wound                                                                     | Not Covered       |
| 0513T                 | Extracorporeal shock wave for integumentary wound healing, including topical application and dressing care; each additional wound (List separately in addition to code for primary procedure) | Not Covered       |
| 0864T                 | Low-intensity extracorporeal shock wave therapy involving corpus cavernosum, low energy                                                                                                       | Not Covered       |

### **Extracorporeal shock wave therapy (ESWT) for musculoskeletal conditions**

is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

The medical literature is unclear on the efficacy of ESWT for wound healing of diabetic foot ulcers (DFUs). Wu et al. (2024) conducted a systematic review and meta-analysis of 10 randomized controlled trials (RCTs) with 754 patients. Despite demonstrated safety and efficacy, further research is needed to elucidate the mechanisms underlying its healing effects in DFUs. These are driven by the reversal of chronic, non-healing wounds caused by diabetes-related hyperglycemia, vasculopathy, and neuropathy.<sup>8</sup>

Other uses of ESWT for musculoskeletal conditions were not fully supported by the medical literature. Tung et al. (2025) conducted a systematic review and meta-analysis comparing ESWT with conservative treatments (e.g., orthotics, corticosteroid injections) for plantar fasciitis. A total of 15 RCTs with 1123 patients demonstrated improvement in VAS and Foot Function Index (FFI). Orthotics demonstrated more improvement than ESWT.<sup>9</sup> Xue et al. (2024) analyzed 17 RCTs (1131 patients) on the efficacy of ESWT versus conservative treatment for rotator cuff function, external rotation, pain, and range of

motion. While ESWT demonstrated improvement across all indicators, the quality of evidence and small sample sizes were noted as limitations. Research was insufficient to support ESWT.<sup>10</sup>

## **Quantitative Sensory Testing (QST) and Interpretation**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                      | <b>Conclusion</b> |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0106T                 | Quantitative sensory testing (QST), testing and interpretation per extremity; using touch pressure stimuli to assess large diameter sensation                | Not Covered       |
| 0107T                 | Quantitative sensory testing (QST), testing and interpretation per extremity; using vibration stimuli to assess large diameter fiber sensation               | Not Covered       |
| 0108T                 | Quantitative sensory testing (QST), testing and interpretation per extremity; using cooling stimuli to assess small nerve fiber sensation and hyperalgesia   | Not Covered       |
| 0109T                 | Quantitative sensory testing (QST), testing and interpretation per extremity; using heat-pain stimuli to assess small nerve fiber sensation and hyperalgesia | Not Covered       |
| 0110T                 | Quantitative sensory testing (QST), testing and interpretation per extremity; using other stimuli to assess sensation                                        | Not Covered       |

**Quantitative sensory testing (QST) and interpretation** are not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

Rhee et al. (2024) conducted a cross-sectional study of 3022 twins (96% female) to study the correlation of QST and inflammatory biomarkers in chronic pain syndromes, including chronic widespread pain, dry eye disease, and irritable bowel syndrome (IBS). Results showed no difference among the 10 QST modalities.<sup>11</sup> Paredes et al. (2022) conducted a systematic review of QST for patients with chronic postoperative pain following unilateral total joint arthroplasty. The review included 18 studies (1,869 patients), with total knee arthroplasty (TKA) being the most prevalent procedure performed in 16 studies. Pressure pain threshold correlated with postoperative pain. The efficacy and predictive role of preoperative QST were uncertain due to inconsistent medical evidence in the literature.<sup>12</sup>

Martland et al. (2021) performed a systematic review of literature on QST and cancer pain. Eighteen studies (789 patients) focused on tumor-related pain, chemotherapy-induced peripheral neuropathy (CIPN), sensory abnormalities, and thresholds for abnormal mechanical detection and pin-prick. Sensory



abnormalities in cool- and warm-thermal detection thresholds were reported in 50% of the studies. Forty-four percent of the studies reported abnormal mechanical detection thresholds when von Frey filaments were used. Abnormal pin-prick thresholds were noted in 39% of studies. Future research was recommended on the pathophysiological mechanisms of cancer pain to direct analgesic treatment.<sup>13</sup>

In 2025, the American Academy of Neurology (AAN) Therapeutics and Technology Assessment Subcommittee reaffirmed its 2003 report on QST. The AAN did not support the use of QST for diagnosing pathology due to challenges with test methodology and reproducibility, as well as psychological factors that could limit objectivity. The European Academy of Neurology (EAN) and the European Pain Federation (EPF) provided a weak endorsement for neuropathic pain.<sup>14,15</sup>

### **Percutaneous Sacral Augmentation (Sacroplasty)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                               | <b>Conclusion</b> |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0200T                 | Percutaneous sacral augmentation (sacroplasty), unilateral injection(s), including the use of a balloon or mechanical device, when used, 1 or more needles, includes imaging guidance and bone biopsy, when performed | Not Covered       |
| 0201T                 | Percutaneous sacral augmentation (sacroplasty), bilateral injections, including the use of a balloon or mechanical device, when used, 2 or more needles, includes imaging guidance and bone biopsy, when performed    | Not Covered       |

**Percutaneous sacral augmentation (sacroplasty)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Maldinez et al. (2025) conducted a retrospective analysis of 49 patients that determined the efficacy of percutaneous sacroplasty for insufficiency fractures or metastatic lesions. The procedure demonstrated positive clinical outcomes (decreased pain and increased mobility, quality of life, and patient satisfaction). However, the authors noted the lack of long-term outcomes data that are needed to adequately determine the predictive factors of sacroplasty.<sup>16</sup>

Chandra et al. (2019) conducted a systematic review and meta-analysis of 18 studies (849 patients) that included patients who underwent percutaneous sacroplasty for osteoporotic and malignant sacral fractures. Low complication rates and overall clinical success were observed; however, the authors noted that further research is needed to compare sacroplasty with conservative treatment.<sup>17</sup> A retrospective review by Gupta et al. (2014) included 53 patients (83% female) who underwent percutaneous sacroplasty between January 2004 and September 2013. Significant decreases were noted in VAS, Functional Mobility Scale (FMS), and Analgesic Scale (AS) scores. Future randomized controlled trials (RCTs) should be conducted on the use of analgesics and conservative treatment, with or without surgical fixation.<sup>18</sup>

## **Posterior Vertebral Joint(s) Arthroplasty**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                  | <b>Conclusion</b> |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0202T                 | Posterior vertebral joint(s) arthroplasty (eg, facet joint[s] replacement), including facetectomy, laminectomy, foraminotomy, and vertebral column fixation, injection of bone cement, when performed, including fluoroscopy, single level, lumbar spine | Not Covered       |

**Posterior vertebral joint(s) arthroplasty** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Shaffer et al. (2024) compared outcomes of lumbar facet arthroplasty versus spinal fusion in 299 patients with degenerative spondylolisthesis and stenosis. At baseline and postoperatively, patient-reported outcomes (PROMs) were measured (e.g., Oswestry Disability Index [ODI], VAS, and Zurich Claudication Questionnaire [ZCQ]). Radiographs were also taken at 12 and 24 months to assess the range of motion. The main limitation of the study was the limited postoperative follow-up at 6 and 12 months (80% and 69%, respectively). Future studies were recommended to include long-term outcome data to establish related complications.<sup>19</sup>

Two studies examined the Total Posterior Spine system (TOPSTM) randomized controlled trial (RCT) conducted by the US Food & Drug Administration (FDA). Limitations included a lack of long-term data beyond 5 years to assess system durability. The risk of pedicle screw placement was also noted, as well as device breakage or loosening. Future research should be focused on the higher incidence of serious adverse events.<sup>20,21</sup>

## Facet Joint Injections

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                          | Conclusion  |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0213T          | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; single level                                                                                  | Not Covered |
| 0214T          | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; second level (List separately in addition to code for primary procedure)                      | Not Covered |
| 0215T          | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; third and any additional level(s) (List separately in addition to code for primary procedure) | Not Covered |
| 0216T          | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; single level                                                                                      | Not Covered |
| 0217T          | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; second level (List separately in addition to code for primary procedure)                          | Not Covered |
| 0218T          | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; third and any additional level(s) (List separately in addition to code for primary procedure)     | Not Covered |

**Facet joint injections** are not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

Manchikanti et al. (2015) conducted a systematic review that assessed the clinical efficacy of therapeutic facet joint interventions in individuals with chronic spinal pain. A literature review from 1966 through March 2015 yielded 21 randomized controlled trials (RCTs) that met inclusion criteria; a total of five observational studies were evaluated. Long-term efficacy is supported by

Level II evidence of radiofrequency ablation (RFA) neurotomy and facet joint nerve blocks for the lumbar, cervical, and lumbar spine. Intraarticular injections had Level III evidence (lumbar) and Level IV evidence (cervical and thoracic). The primary outcome measure was short-term (6 months or less) and long-term (6 months or more) pain relief. Secondary outcome measures included improvement in functional status, psychological status, ability to return to work, and reduced opioid use.<sup>22</sup>

The American Society of Regional Anesthesia and Pain Medicine (ASRM) does not recommend the use of therapeutic intraarticular injections for cervical spine (facet) joint pain. A high technical failure rate was noted for intra-articular injections. In addition, medial branch blocks (MBB) were noted as more clinically useful for RFA outcomes versus intra-articular injections.<sup>23</sup> The ASRM published a guideline on interventions for lumbar facet joint pain. Prior to RFA, MBB was recommended. Intra-articular injections were recommended for diagnostic and therapeutic purposes in certain patients. Therapeutic MBB and intra-articular injections were not recommended in most clinical scenarios (e.g., prolonged relief from prognostic blocks, patient contraindication to RFA).<sup>24</sup>

The American Society of Interventional Pain Physicians (ASIPP) published a guideline on Facet Joint Interventions in the Management of Chronic Spinal Pain. The evidence for the use of lumbar, cervical, and thoracic intra-articular facet joint injections was weak.<sup>25</sup>

The North American Spine Society (NASS) published guidelines on low back pain. Evidence was insufficient to make a recommendation for the use of steroid injections for facet-related pain.<sup>26</sup> In addition, NASS published guidelines for the diagnosis and treatment of degenerative lumbar spondylolisthesis, and noted that the evidence was insufficient to support the use of injections for degenerative lumbar spondylolisthesis.<sup>27</sup> The North American Spine Society (NASS) noted that facet joint injections may be indicated in certain cases.<sup>28</sup>

### **Placement of a Posterior Intrafacet Implant**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                       | <b>Conclusion</b> |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0219T                 | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; cervical                                                                                      | Not Covered       |
| 0220T                 | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; thoracic                                                                                      | Not Covered       |
| 0221T                 | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; lumbar                                                                                        | Not Covered       |
| 0222T                 | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; each additional vertebral segment (List separately in addition to code for primary procedure) | Not Covered       |

**Placement of a posterior intrafacet implant** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Koshimizu et al. (2024) conducted a multicenter study of implant-related complications following spinal fusion in 3447 patients (mean age: 63.1 ± 15.4 years; 1655 men and 1792 women). Degenerative spinal disease was the most documented preoperative diagnosis. The most cited complication was screw malposition (43%), which was the second leading cause of reoperation (72%). Loose screws or screws that pulled out from the implant were the primary cause of reoperation (82%). Fractures of a rod or screw were also a cause for reoperation (61%). Limitations of the study included a lack of documentation regarding comorbidity, surgeon experience, and metal composition of the implant.<sup>29</sup>

Two studies conducted by the US Food & Drug Administration (FDA) examined a randomized controlled trial (RCT) on the Total Posterior Spine system (TOPSTM). Limitations included a lack of long-term data beyond 5 years, which would aid in assessing the durability of the system. The risk of pedicle screw placement was also a noted concern, as well as device breakage or

loosening. Future research should be aimed at the higher incidence of serious adverse events.<sup>21,30</sup>

Dusad et al. (2018) conducted a retrospective study of 82 patients on transarticular screw fixation without Gallie supplementation in the management of mobile atlantoaxial instability. Significant improvement of clinical parameters was noted (i.e., VAS, ODI, and modified Japanese Orthopaedic Association [mJOA] guidelines). Limitations of the study included potential bias and the lack of controls.<sup>31</sup>

## **Platelet-Rich Plasma (PRP) Injections**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                           | <b>Conclusion</b> |
|-----------------------|-------------------------------------------------------------------------------------------------------------------|-------------------|
| 0232T                 | Injection(s), platelet rich plasma, any site, including image guidance, harvesting and preparation when performed | Not Covered       |

**Platelet-rich plasma (PRP) injections** are not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

Herber et al. (2024) conducted a systematic review and meta-analysis of the efficacy of conservative treatment versus PRP injections for plantar fasciitis. Twenty-one studies (1356 patients) were included. No difference in improved FFI was demonstrated among treatments, including PRP, corticosteroid injections, meridian trigger points, ESWT, and dextrose prolotherapy. The authors noted that the randomized controlled trials (RCTs) were of low quality and exhibited substantial heterogeneity.<sup>32</sup>

Qiao et al. (2023) examined the efficacy and safety of PRP, corticosteroid injections, and hyaluronic acid for the treatment of knee osteoarthritis. Thirty-five RCTs (3104 patients) were included with a treatment duration of 3 to 24 months; outcomes data were reported at 3, 6, 9, and 12 months. Despite improved pain relief, the literature does not provide substantial evidence on the need for adverse events.<sup>33</sup>

Bae et al. (2021) conducted a systematic review and meta-analysis of treatments for chronic musculoskeletal pain. This included injections (PRP injections, steroids, saline), ESWT, and exercise. Pain scores did not differ between patients who received prolotherapy versus PRP or steroid injections. The authors noted limited evidence and poor methodology.<sup>34</sup>

Multiple medical associations have published guidance on PRPs for various conditions. The American Academy of Orthopaedic Surgeons (AAOS) recommended against PRP injections for the management of rotator cuff injuries, osteoarthritis of the knee, and glenohumeral joint osteoarthritis.<sup>35-37</sup> The American Association of Hip and Knee Surgeons (AAHKS), The Hip Society



(THS), The Knee Society (TKS), and the American College of Rheumatology/Arthritis Foundation recommended against PRP injections for hip and knee arthritis based on a lack of efficacy, high cost, and safety concerns.<sup>38,39</sup> The American Society of Interventional Pain Physicians (ASIPP) and the National Institute for Health and Care Excellence (NICE) also recommended against the use of PRP injections.<sup>40,41</sup>

### **Intramuscular Autologous Bone Marrow Cell Therapy**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                   | <b>Conclusion</b> |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0263T                 | Intramuscular autologous bone marrow cell therapy, with preparation of harvested cells, multiple injections, one leg, including ultrasound guidance, if performed; complete procedure including unilateral or bilateral bone marrow harvest                               | Not Covered       |
| 0264T                 | Intramuscular autologous bone marrow cell therapy, with preparation of harvested cells, multiple injections, one leg, including ultrasound guidance, if performed; complete procedure excluding bone marrow harvest                                                       | Not Covered       |
| 0265T                 | Intramuscular autologous bone marrow cell therapy, with preparation of harvested cells, multiple injections, one leg, including ultrasound guidance, if performed; unilateral or bilateral bone marrow harvest only for intramuscular autologous bone marrow cell therapy | Not Covered       |

**Intramuscular autologous bone marrow cell therapy** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Yanke et al. (2024) conducted a prospective, randomized, double-blind clinical trial on the efficacy of autologous bone marrow aspirate concentrate (BMAC) in 83 patients with early knee osteoarthritis during arthroscopic meniscectomy. A follow-up at 1 year postoperatively found no significant improvement between the group that received BMAC therapy versus the control group that did not. Similar results were noted between the two groups at the 2-year follow-up. Due to the limited differences, additional research was needed to establish the efficacy of BMAC therapy.<sup>42</sup>

Lee et al. (2024) performed a meta-analysis to evaluate the efficacy of autologous bone marrow cell therapy for pain relief in patients with knee osteoarthritis. Thirty-one studies (1406 study participants) were included. Overall, autologous-cultured adipose-derived mesenchymal stem cells (MSCs) provided a notable reduction of pain at 3-month follow-up. Application methods were cited as a focus for future studies, specifically with dose-response relationships.<sup>43</sup>

Centeno et al. (2024) conducted a randomized controlled trial (RCT) that investigated the efficacy of autologous BMAC in patients with early knee osteoarthritis. The authors compared PROMs over a 3-month timeframe. Improved outcomes were also reported at the 2-year follow-up. Research was needed on the use of BMC and other autologous bone marrow cell therapies.<sup>44</sup>

The American Academy of Orthopaedic Surgeons (AAOS) (2020) did not make a recommendation in its position statement for the Use of Emerging Biologic Treatment.<sup>45</sup> In the guideline for the management of glenohumeral joint osteoarthritis, the AAOS (2020) did not support the use of biologics.<sup>37</sup>

## **Percutaneous Laminotomy/Laminectomy for Decompression of Neural Elements**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                                                                            | <b>Conclusion</b> |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0274T                 | Percutaneous laminotomy/laminectomy (interlaminar approach) for decompression of neural elements, (with or without ligamentous resection, discectomy, facetectomy and/or foraminotomy), any method, under indirect image guidance (eg, fluoroscopic, CT), single or multiple levels, unilateral or bilateral; cervical or thoracic | Not Covered       |

**Percutaneous laminotomy/laminectomy (interlaminar approach) for decompression of neural elements** is not considered appropriate, as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Karlsson et al. (2024) conducted a randomized controlled trial (RCT) to compare 5-year outcomes after decompression alone and decompression with fusion for the treatment of lumbar spinal stenosis. The 5-year ODI scores were similar across treatments, and the EuroQol five-dimension questionnaire was higher with decompression alone than with decompression and fusion. These results indicated that adding fusion to decompression surgeries may not improve patient outcomes 5 years post-surgery, findings consistent with those reported at the 2-year time point. The authors concluded that decompression alone is preferred for spinal stenosis surgery.<sup>46</sup>

Thomé et al. (2018) conducted an RCT involving 554 patients to evaluate annular closure during lumbar microdiscectomy to prevent reherniation. Annular closure with a bone-anchored implant lowered the risk of symptomatic recurrence and reoperation in patients at high-risk of herniation recurrence after lumbar microdiscectomy. Additional studies should be conducted to determine outcomes beyond 2 years with a bone-anchored annular closure device. The results of the current study may not have been generalized to all patients undergoing lumbar discectomy.<sup>47</sup>

In a retrospective database study of 7315 patients, Huynh et al. (2017) reviewed spinal decompression and discectomy procedures in children. They noted that conditions requiring such procedures, including spinal stenosis/spondylosis and disc herniation, are seen less often in children than

in adults. The authors stated that children with these conditions are often less responsive to conservative management strategies (i.e., exercise, physical therapy, pharmacological pain control) when compared to adults. The mean patient age was 12.7 years for pediatric spondylolysis/spinal stenosis and 18 years for pediatric disc herniation. For patients with pediatric spondylosis/spinal stenosis, complication rates were higher after decompression (18.1%) than after discectomy (5.3%) procedures. Length of hospital stay was also longer in pediatric spondylolysis/spinal stenosis patients treated with decompression compared to discectomy (5 vs. 1.7 days).<sup>48</sup>

### **Transcutaneous Electrical Modulation Pain Reprocessing (Scrambler Therapy)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                   | <b>Conclusion</b> |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0278T                 | Transcutaneous electrical modulation pain reprocessing (eg, scrambler therapy), each treatment session (includes placement of electrodes) | Not Covered       |

**Transcutaneous electrical modulation pain reprocessing (scrambler therapy)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Jin et al. (2022) conducted a meta-analysis of 7 randomized controlled trials (RCTs) that involved 287 patients that assessed the efficacy of scrambler therapy for chronic pain. Results showed a decrease in short-term pain. A major limitation of the study was the lack of standardization in the collection of patient diagnoses. The authors noted that larger study sizes were needed.<sup>49</sup> Kashyap et al. (2020) performed an RCT on the use of scrambler therapy for head, neck, and thoracic cancer pain. Eighty patients were divided into two groups that received pain management drugs, and 40 patients also received scrambler therapy. Pain was monitored daily, and patients in both groups reported a decrease in cancer-related pain. Due to the short follow-up period for patients, additional research is needed to determine the long-term effects of scrambler therapy.<sup>50</sup> Nayback-Beebe et al. (2020) conducted an RCT on the efficacy and safety of scrambler therapy for military members with chronic pain for at least 3 months. Low back pain was reported in 97% of patients. The authors found that scrambler therapy did not demonstrate a significant improvement in chronic pain. Medication use and quality of life (mental and physical health) were also similar in both groups and demonstrated no substantial differences.<sup>51</sup>

## **Radiostereometric Analysis (RSA)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                         | <b>Conclusion</b> |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0347T                 | Placement of interstitial device(s) in bone for radiostereometric analysis (RSA)                                                                | Not Covered       |
| 0348T                 | Radiologic examination, radiostereometric analysis (RSA); spine, (includes cervical, thoracic and lumbosacral, when performed)                  | Not Covered       |
| 0349T                 | Radiologic examination, radiostereometric analysis (RSA); upper extremity(ies), (includes shoulder, elbow, and wrist, when performed)           | Not Covered       |
| 0350T                 | Radiologic examination, radiostereometric analysis (RSA); lower extremity(ies), (includes hip, proximal femur, knee, and ankle, when performed) | Not Covered       |

**Radiostereometric analysis (RSA)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Ten Brinke et al. (2017) analyzed 23 studies on RSA in upper-limb arthroplasty. While RSA demonstrated efficacy for measuring early migration of orthopedic implants, rotation-precision outcomes were poor. Long-term clinical outcomes were needed, especially those with cohort postoperative follow-up periods of 5 and 10-years. There were limited studies with large study sizes of patients who underwent shoulder, elbow, wrist, and hand arthroplasty.<sup>52</sup>

Humadi et al. (2017) conducted a systematic review on the accuracy of RSA for cervical and lumbar spine assessment. Positive clinical outcomes included segmental fusion, inducible displacement, and increased range of motion. Limitations of RSA included the lack of a universally accepted figure (i.e., degree of rotation or millimeter of translation) that confirmed fusion success. The accuracy of RSA was variable, particularly in setup and assessment. Disadvantages of RSA include being an invasive procedure and specialized clinician training. Further, a reported concern in patients with poor bone quality was the migration of RSA beads into other sites such as soft tissue, blood vessels, and the spinal canal.<sup>53</sup>

The International Radiostereometry Society (2024) published guidelines that supported RSA and computed tomography (CT)-RSA for migration measurements.<sup>54</sup>

## **Percutaneous Cryoablation**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                    | <b>Conclusion</b> |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0440T                 | Ablation, percutaneous, cryoablation, includes imaging guidance; upper extremity distal/peripheral nerve                                   | Not Covered       |
| 0441T                 | Ablation, percutaneous, cryoablation, includes imaging guidance; lower extremity distal/peripheral nerve                                   | Not Covered       |
| 0442T                 | Ablation, percutaneous, cryoablation, includes imaging guidance; nerve plexus or other truncal nerve (eg, brachial plexus, pudendal nerve) | Not Covered       |

**Percutaneous cryoablation** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Nygaard et al. (2025) conducted a double-blind, randomized, sham-controlled trial of chronic pain associated with knee osteoarthritis. A significant improvement in pain was not demonstrated among the 87 patients who received a sham procedure or cryoneurolysis (0.49; 95% CI, -0.3 to 1.2;  $P = 0.198$ ). However, at 6-month follow-up, the cryoneurolysis group showed a notable reduction in pain (1.1; 95% CI, 0.3 to 1.9;  $P = 0.009$ ). To establish efficacy, further studies with larger sample sizes and long-term follow-up were needed.<sup>55</sup> Radnovich et al. (2017) conducted a multicenter, randomized, double-blind, sham-controlled trial evaluating the effect of cryoneurolysis on pain related to knee osteoarthritis. Study participants were placed in an active treatment group ( $n=121$ ) or a sham treatment group ( $n=59$ ). Repeat cryoneurolysis was typically needed and cited as a disadvantage of treatment. The authors noted limited evidence that compared cryoneurolysis with standard pain management therapies.<sup>56</sup>

Dasa et al. (2016) analyzed patients who underwent total knee arthroplasty (TKA) and received cryoneurolysis for pain relief. Half of the 100 study participants received cryoneurolysis, and half did not. There were no significant changes in either group. Research was insufficient to establish efficacy.<sup>57</sup>



## **Autologous White Blood Cell Concentrate (Autologous Protein Solution) Injections**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                             | <b>Conclusion</b> |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0481T                 | Injection(s), autologous white blood cell concentrate (autologous protein solution), any site, including image guidance, harvesting and preparation, when performed | Not Covered       |

**Autologous white blood cell concentrate (autologous protein solution) injections** are not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

Sinnott et al. (2017) reviewed the literature on autologous blood injections (ABIs) for Achilles tendinopathy. Despite conservative treatment, 45% of patients required surgical intervention. While research found that ABIs improved symptoms (e.g., stiffness, swelling, and pain), additional studies were required. The authors noted that the use of ABIs and PRP injections for non-responsive patients was a research need.<sup>58</sup> Calandruccio et al. (2017) conducted a review on ABIs for the treatment of lateral epicondylitis (tennis elbow). Treatment with conservative measures (e.g., non-steroidal anti-inflammatory drugs [NSAIDs], rest, bracing, and physical therapy) was typically successful. Research found that evidence varied and showed varying clinical outcomes.<sup>59</sup> King et al. (2018) also noted that current research lacked high-quality randomized controlled trials (RCTs), especially cellular content for musculoskeletal conditions.<sup>60</sup>

## **Autologous Adipose-Derived Regenerative Cell Therapy for Scleroderma**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                                                                   | <b>Conclusion</b> |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0489T                 | Autologous adipose-derived regenerative cell therapy for scleroderma in the hands; adipose tissue harvesting, isolation and preparation of harvested cells including incubation with cell dissociation enzymes, removal of non-viable cells and debris, determination of concentration and dilution of regenerative cells | Not Covered       |
| 0490T                 | Autologous adipose-derived regenerative cell therapy for scleroderma in the hands; multiple injections in one or both hands                                                                                                                                                                                               | Not Covered       |

**Autologous adipose-derived regenerative cell therapy for scleroderma** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Almadori et al. (2024) conducted a systematic review on fat grafting and adipose stem cells for facial systemic sclerosis. A total of 174 patients across 12 studies were included. Improvement was reported in 87% of the patients with an average of 5.30 months between procedures. The current literature was considered low or very low and did not support the treatment's efficacy. The authors noted a lack of randomized controlled trials (RCTs) that eliminated the placebo effect.<sup>61</sup>

Khanna et al. (2022) conducted an RCT evaluating the use of adipose-derived regenerative cells for the treatment of hand dysfunction in patients with limited cutaneous systemic sclerosis (lcSSc) or diffuse cutaneous SSc (dcSSc). Eighty-eight patients were randomized; 48 received autologous adipose-derived regenerative cells (ADRCs), and 40 were in the placebo group. The ADRC group demonstrated a change in hand function as evidenced by a Cochin Hand Function Scale (CHFS) score. However, the change was not statistically significant (mean  $\pm$  SD improvement in the CHFS score at 48 weeks  $11.0 \pm 12.5$  versus  $8.9 \pm 10.5$ ;  $P = 0.299$ ).<sup>62</sup>

Escobar-Soto et al. (2021) reported on a systematic review of the efficacy of human MSCs for the treatment of systemic sclerosis. Eleven articles were included (101 patients) with an age range of 18–75 years. A limitation of the

study was the disproportionate number of females (85). Improvement was demonstrated in ulcerations and necrosis, as well as a reduction in pain. The authors noted that scientific data were lacking to establish treatment for systemic sclerosis.<sup>63</sup>

### **Insertion, Removal, and Reinsertion of Sinus Tarsi Implants**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                        | <b>Conclusion</b> |
|-----------------------|------------------------------------------------|-------------------|
| 0335T                 | Insertion of sinus tarsi implant               | Not Covered       |
| 0510T                 | Removal of sinus tarsi implant                 | Not Covered       |
| 0511T                 | Removal and reinsertion of sinus tarsi implant | Not Covered       |

**Removal and reinsertion of sinus tarsi implants** is not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

García Bistolfi et al. (2022) reported on a retrospective review of pediatric patients with flexible flatfoot. The study included 14 patients (8–14 years of age) with a total of 19 feet. Positive outcomes were demonstrated functionally and radiographically. While significant improvement was observed in the American Orthopedic Foot and Ankle Scale (AOFAS) score, the authors noted that the results may be biased and that the scores were not validated. Future studies are needed that include a larger sample size and a control group.<sup>64</sup>

Smolle et al. (2022) performed a systematic review on long-term clinical and radiological outcomes in pediatric patients following surgical treatment for symptomatic flexible flat feet. Ten studies were included. Functional and clinical outcomes improved; compared with postoperative, AOFAS scores improved by 23 points at the latest follow-up. Due to inconsistencies in outcome parameters, the authors noted that research is needed on long-term outcomes and comparisons of various treatments for pediatric flexible flatfoot.<sup>65</sup>

Smith et al. (2021) conducted a systematic review on subtalar arthroereisis for the treatment of the symptomatic pediatric flexible pes planus. Twenty-four articles were reviewed with a total of 2550 feet (1399 children). Postoperative improvement was demonstrated, with 80% of patients reporting excellent satisfaction. Despite positive clinical outcomes, the authors noted the need for high-quality prospective studies to establish safety and efficacy.<sup>66</sup>

### **Continuous Recording of Movement Disorder Symptoms**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                                      | <b>Conclusion</b> |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0535T                 | Continuous recording of movement disorder symptoms, including bradykinesia, dyskinesia, and tremor for 6 days up to 10 days; includes set-up, patient training, configuration of monitor, data upload, analysis and initial report configuration, download review, interpretation and report | Not Covered       |
| 0536T                 | Continuous recording of movement disorder symptoms, including bradykinesia, dyskinesia, and tremor for 6 days up to 10 days; set-up, patient training, configuration of monitor                                                                                                              | Not Covered       |

**Continuous recording of movement disorder symptoms** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Rodríguez-Martín and Pérez-López (2024) conducted a review on monitoring devices for Parkinson's Disease. Devices included Personal KinetiGraph™ (PKG), Kinesia 360™, Kinesia U™, PDMonitor™, and STAT-ON™, which collected data on tremors, dyskinesia, and bradykinesia. Use is limited by the accuracy of the collected data and by the device's ease of use for the patient. Future research is needed to develop standardized protocols and conduct large-scale studies. Validation studies conducted under regulatory agency oversight (e.g., the US Food & Drug Administration [FDA]) were also cited as a need.<sup>67</sup>

Santiago et al. (2019) performed a qualitative evaluation of the PKG movement recording system for patients with Parkinson's disease. Four physicians at a single center completed a survey on 89 patients (143 total PKGs). Following the procedure, physicians noted that additional information about the patient was discovered, which assisted in treatment planning. Research is needed on the role of technology in clinical outcomes and access to the procedure.<sup>68</sup>

Joshi et al. (2019) reviewed the PKG movement recording system for Parkinson's disease in 63 patients. Symptoms were reported by the system when the patient did not report bradykinesia or dyskinesia (50% and 33%,

respectively). Limitations of the study included a small study size. Documented motor function evaluation was not included, which could have impacted treatment. The system also could not measure certain Parkinsonian manifestations, including falls, freezing, or gait.<sup>69</sup>

### **Bone-Material Quality Testing by Microindentation of the Tibia**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                | <b>Conclusion</b> |
|-----------------------|--------------------------------------------------------------------------------------------------------|-------------------|
| 0547T                 | Bone-material quality testing by microindentation(s) of the tibia(s), with results reported as a score | Not Covered       |

**Bone-material quality testing by microindentation(s) of the tibia(s)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Schoeb et al. (2023) conducted a prospective observational study on the safety outcomes of impact microindentation (IMI). A total of 106 patients – 71 (67%) were female, and the median age of all patients was 59 years. Minor complications were reported by 3 patients (2 hematomas, 1 bruise) at 1-week follow-up. Pain was minimal in all patients at baseline and at follow-up (1 week and 1 month). A main limitation of the study was that follow-up was conducted by telephone, which may not yield as robust responses from the patient as a face-to-face consultation. The authors noted that additional research is needed to predict future fractures based.<sup>70</sup>

Schoeb et al. (2021) examined the bone material strength index, as measured by IMI, in 40 patients with primary hyperparathyroidism. Microindentation was compared in patients with low- and high-energy trauma fractures. Patients with high-energy trauma fractures demonstrated a higher bone material strength index. In each group, the difference was not demonstrated in patients with osteoporosis and osteopenia. The authors noted the efficacy of IMI, as it is minimally invasive, enabling the in vivo evaluation of tissue-level material properties of bone. The potential for use with DXA and BMD measurements is also discussed. Prospective studies with large sample sizes are needed.<sup>71</sup>

Schoeb et al. (2020) conducted a systematic review of the value of IMI for evaluating bone fragility. The authors sought to compare IMI against the measurement of bone mineral density (BMD) using dual-energy radiography absorptiometry (DXA), the gold standard to predict fracture risk and to diagnose osteoporosis. Thirty-eight studies demonstrated that IMI identified both. The authors noted limited evidence and the need for studies that do not have a high variability of methodological quality.<sup>72</sup>

### **Low-Level Laser Therapy (LLLT), Dynamic Phototonic, and Dynamic Thermokinetic Energies**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                           | <b>Conclusion</b> |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0552T                 | Low-level laser therapy, dynamic photonic and dynamic thermokinetic energies, provided by a physician or other qualified health care professional | Not Covered       |

**Low-level laser therapy (LLLT), dynamic photonic, and dynamic thermokinetic energies** are not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

Pereira et al. (2025) analyzed the effectiveness of high- and low-level laser therapy for the treatment of orthopedic pain. Eight randomized controlled trials (RCTs) included conditions such as chronic low back pain, knee osteoarthritis, plantar fasciitis, subacromial impingement, patellofemoral pain syndrome, and lateral epicondylalgia. Both high- and low-level laser therapy were associated with decreased pain and increased physical function. Limitations of the study may have increased reporting bias. These included small study sizes, unregistered protocols, shorter follow-up periods, and a lack of blinding of outcome assessors.<sup>73</sup>

Arroyo-Fernández et al. (2023) conducted a systematic review and meta-analysis of 48 RCTs to determine the effectiveness of HILT for musculoskeletal disorders. While pain and physical function improved, a major limitation of the study was the substantial heterogeneity in the assessed variables, which reduced confidence in the evidence. There was also a high risk of bias due to the blinding of participants.<sup>74</sup>

Li et al. (2016) conducted a meta-analysis of LLLT for carpal tunnel syndrome. A total of seven RCTs were included (270 wrists received LLLT, and 261 wrists were in the control group). Hand grip was stronger at 12 weeks in the LLLT group (MD = 2.04; 95% CI: 0.08–3.99;  $P = 0.04$ ;  $I = 62\%$ ). VAS also improved at 12-weeks in the LLLT group (MD = 0.97; 95% CI: 0.84–1.11;  $P < 0.01$ ;  $I = 0\%$ ). Despite positive clinical outcomes, evidence was lacking to support LLLT for carpal tunnel syndrome.<sup>75</sup>



## Bone Strength and Fracture Risk Using Finite Element Analyses

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                                                                                                                                                  | Conclusion  |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0554T          | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; retrieval and transmission of the scan data, assessment of bone strength and fracture risk and bone-mineral density, interpretation and report                                                                                                          | Not Covered |
| 0555T          | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; retrieval and transmission of the scan data                                                                                                                                                                                                             | Not Covered |
| 0556T          | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; assessment of bone strength and fracture risk and bone-mineral density                                                                                                                                                                                  | Not Covered |
| 0557T          | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; interpretation and report                                                                                                                                                                                                                               | Not Covered |
| 0743T          | Bone strength and fracture risk using finite element analysis of functional data and bone mineral density (BMD), with concurrent vertebral fracture assessment, utilizing data from a computed tomography scan, retrieval and transmission of the scan data, measurement of bone strength and BMD and classification of any vertebral fractures, with overall fracture-risk assessment, interpretation and report | Not Covered |
| 0749T          | Bone strength and fracture-risk assessment using digital X-ray radiogrammetry-bone mineral density (DXR-BMD) analysis of bone mineral density (BMD) utilizing data from a digital X ray, retrieval and transmission of digital X-ray data, assessment of bone strength and fracture risk and BMD, interpretation and report;                                                                                      | Not Covered |
| 0750T          | Bone strength and fracture-risk assessment using digital X-ray radiogrammetry-bone mineral density (DXR-BMD) analysis of bone mineral density (BMD) utilizing data from a digital X ray, retrieval and transmission of digital X-ray data, assessment of bone strength and fracture risk and BMD, interpretation and                                                                                              | Not Covered |

|  |                                                                                                 |  |
|--|-------------------------------------------------------------------------------------------------|--|
|  | report; with single-view digital X-ray examination of the hand taken for the purpose of DXR-BMD |  |
|--|-------------------------------------------------------------------------------------------------|--|

**Bone strength and fracture risk using finite element analyses** are not considered appropriate, as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

Westbury et al. (2019) evaluated 359 participants from the Hertfordshire Cohort Study that determined whether the addition of finite element analyses (FEA) and bone microarchitectural parameters derived from high-resolution peripheral quantitative CT improved fracture discrimination compared with areal bone mineral density (aBMD) measurements alone. While some individual measures of FEA distinguished fracture cases versus non-fracture cases in Poisson regression models, the area under the receiver operator curves revealed that the addition of FEA measures did not substantially improve discrimination between fracture and non-fracture cases. The results of the study indicated that further work is needed to assess the effectiveness of FEA in predicting bone fractures.<sup>76</sup>

Redepenning et al. (2020) performed a systematic review of rotator-cuff-focused finite element models in order to establish the quality of these articles using the Finite Element Model Grading Procedure (FEMGP), which is an overall quality percent score based on items important to the finite element model. Of the 22 articles reviewed, only 5 scored above 75% and fell within the “exceptional” range, with only one study being published after 2010. Additionally, 16 fell in the “good” range of 50–74.9%; it is important to note that 9 of these “good” scores fell below 60%. The remaining article was rated only “fair” quality and fell within 25–49.9%. While the authors concluded that FEMGP is an appropriate measure for evaluating the quality of the finite element modeling literature, the lack of high-quality studies supported the need for improved guidelines and standards for finite element modeling.<sup>77</sup>

Allaire et al. (2019) performed a case-control study (n=26 cases, n=62 controls) to examine the relationship between vertebral strength, derived by quantitative CT-based FEA, and incident vertebral fracture (VF). Cases were matched to controls on age and sex. The authors used conditional logistic regression, adjusted for age, BMI, and prevalent vertebral fracture status, and an additional model adjusted for aBMD. They found that lower FEA-derived

vertebral strength was associated with increased risk of new or worsening VF in adjusted models for age, sex, and prevalent vertebral fracture status (odds ratio = 5.2, 95% confidence interval (CI) = [1.3-19.8]). AUC suggested that vertebral strength better predicted incident VF than aBMD (AUC = 0.804 vs. 0.715,  $p = 0.05$ ), but not other CT-derived measures such as bone mineral content (AUC = 0.804 vs. 0.794), or integral volumetric bone mineral density (AUC = 0.804 vs. 0.815). While the results suggested that CT-based FEA performs as well as, or better than, other CT-based measures, the small sample size limits generalizability. Further investigations were noted as a need with stronger study designs, such as randomized controlled trials (RCTs), and larger sample sizes.<sup>78</sup>

### **Autologous Cellular Implant for Knee Osteoarthritis**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                           | <b>Conclusion</b> |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0565T                 | Autologous cellular implant derived from adipose tissue for the treatment of osteoarthritis of the knees; tissue harvesting and cellular implant creation                                         | Not Covered       |
| 0566T                 | Autologous cellular implant derived from adipose tissue for the treatment of osteoarthritis of the knees; injection of cellular implant into knee joint including ultrasound guidance, unilateral | Not Covered       |

An **autologous cellular implant derived from adipose tissue for the treatment of knee osteoarthritis** is not considered appropriate, as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Ulivi et al. (2023) conducted a randomized controlled trial (RCT) evaluating the efficacy of micro-fragmented adipose tissue (mFAT) in combination with arthroscopic debridement in 78 patients with grade 3-4 knee osteoarthritis. The group that received arthroscopic debridement and mFAT demonstrated improved functional scores at 6-month and 24-month follow-up. A lack of blinding of patients and assessors was a major limitation of the study.<sup>79</sup>

Wiggers et al. (2021) conducted a systematic review that evaluated autologous MSC therapy in knee osteoarthritis. Fourteen RCTs were included, comprising 408 patients. MSC therapy originated from adipose tissue, activated peripheral blood, or bone marrow. At 1-year follow-up, 73% of clinical outcome measures demonstrated improvement. An increase of 1.8-4.4 points was found on the VAS and 18-32 points of the Knee Osteoarthritis Outcome Score (KOOS). Despite positive findings, the authors noted that there was a high-risk of bias in 10 of the studies.<sup>80</sup>

Kraeutler et al. (2017) conducted a review of MSC implantation following partial or total meniscectomy to delay the progression of knee osteoarthritis. Studies have been conducted in animal models, and short-term results have been favorable. Data on human subjects were limited, and future research was recommended with larger sample sizes, standardized protocols, and comparisons of disease progression with MSCs and other therapies.<sup>81</sup>

### **Osteotomy of the Humerus, with Insertion of an Externally Controlled Intramedullary Lengthening Device**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                         | <b>Conclusion</b> |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0594T                 | Osteotomy, humerus, with insertion of an externally controlled intramedullary lengthening device, including intraoperative imaging, initial and subsequent alignment assessments, computations of adjustment schedules, and management of the intramedullary lengthening device | Not Covered       |

**Osteotomy of the humerus, with insertion of an externally controlled intramedullary lengthening device**, is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Laufer et al. (2022) conducted a single-center study with 28 patients that had shortened upper extremities that limited function and have undergone humeral lengthening. At follow-up, all patients reported clinical improvement based on preoperative scores. Achievement of desired centimeters (cm) lengthening (both arms) was found in 89% of patients. Complications were noted in 50% of the patients including unplanned reoperation (39%), radial nerve palsy (39%), refracture of the regenerate (18%), and one patient (4%) ended treatment due to a discrepancy in limb length.<sup>82</sup>

In a systematic review, Lorange et al. (2022) examined the outcomes and complications of humerus lengthening with a motorized intramedullary nail. Nine articles were identified and included 20 patients for a total of 22 segments lengthened (mean gained length of 5.7 cm and duration of lengthening averaged 71.6 days). Reported complications were limited range of motion (ROM), hardware failure, and hypertrophic bone regeneration. Limitations varied across studies. The authors noted that future research should focus on outcomes related to range of motion improvement.<sup>83</sup>

The National Institute for Health and Care Excellence (NICE) (2022) published guidance on intramedullary distraction for upper limb lengthening. Quality and quantity of evidence was noted as a research need. However, due to the rarity of the condition and limited treatments, the procedure may be

medically necessary in certain clinical scenarios. In addition, NICE stated that “clinical governance, consent, and audit or research” should be developed and monitored. Noted future research needs included selection of patients, device, and technique used as well as long-term outcomes (e.g., quality of life, repeat procedures, complication rates).<sup>84</sup>

## **Noncontact Real-Time Fluorescence Wound Imaging for Bacterial Presence**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                   | <b>Conclusion</b> |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0598T                 | Noncontact real-time fluorescence wound imaging, for bacterial presence, location, and load, per session; first anatomic site (eg, lower extremity)                                                                       | Not Covered       |
| 0599T                 | Noncontact real-time fluorescence wound imaging, for bacterial presence, location, and load, per session; each additional anatomic site (eg, upper extremity) (List separately in addition to code for primary procedure) | Not Covered       |

**Noncontact real-time fluorescence wound imaging for bacterial presence** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Badrie et al. (2025) conducted a systematic review of the clinical utility of autofluorescence imaging for detecting bacteria in wounds. Sixteen studies were included. The MolecuLight i:X device was evaluated in one study. Ten studies demonstrated a significant decrease in bacteria with autofluorescence-guided debridement, and 6 studies evaluated treatment decisions to accelerate wound healing. Outcome variability was observed across several studies, underscoring the need for larger trials to assess the technology's efficacy across various clinical settings.<sup>85</sup>

Armstrong et al. (2023) conducted a multicenter study evaluating the efficacy of point-of-care fluorescence imaging for assessing bacterial load in diabetic foot ulcers (DFUs) from 138 patients. The authors noted that high bacterial load or infection cannot be detected unless symptoms are present (e.g., in immunocompromised patients). Multiple limitations were noted. The study analyzed high bacterial load and its correlation to wound pathogenicity. The authors noted that systemic factors are missing that could delay healing of diabetic foot ulcers and increase the risk of infection.<sup>86</sup>

Rahma et al. (2022) conducted a randomized controlled trial (RCT) evaluating healing rates of DFUs using bacterial autofluorescence imaging. All 56 study participants had a DFU without suspected infection. At 12 weeks, 45% of ulcers had healed in the autofluorescence group versus the control group (22%). In the autofluorescence group, a 40% reduction in wound area was observed at

4 weeks compared with the control group (39%). At 12 weeks, the wound area reduction was 91% (autofluorescence) and 73% (control). This was a pilot study and had limited results due to not having data to compare with.<sup>87</sup>



## **Percutaneous Injection of Allogeneic Cellular and/or Tissue-Based Products**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                  | <b>Conclusion</b> |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0627T                 | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; first level                                                                       | Not Covered       |
| 0628T                 | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; each additional level (List separately in addition to code for primary procedure) | Not Covered       |
| 0629T                 | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; first level                                                                                 | Not Covered       |
| 0630T                 | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; each additional level (List separately in addition to code for primary procedure)           | Not Covered       |

**Percutaneous injection of allogeneic cellular and/or tissue-based products in a lumbar intervertebral disc** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Lewandrowski et al. (2023) performed a small retrospective study to evaluate the safety and efficacy of allogeneic MSC injections in the lumbar intervertebral discs. Initial findings showed improved pain scores and clinical functioning. Using Pfirrmann grading, follow-up MRI scans showed improvement after 2 years. Stronger research was needed on evidence of healing and reversal of degenerative changes in current studies.<sup>88</sup>

Amirdelfan et al. (2021) performed a multicenter randomized controlled trial (RCT) at 13 clinical locations (12 in the United States, 1 in Australia) that evaluated the safety and efficacy of a single intradiscal injection of STRO-3+ adult allogeneic mesenchymal precursor cells (MPCs) combined with hyaluronic acid (HA) in patients with chronic low back pain (CLBP) and degenerative disc disease (DDD). The studies included 100 patients with a modified Pfirrmann score of 3-6. Evaluation occurred at 1, 3, 6, 12, 24, and 36

months following single injections of STRO-3+ adult allogeneic MPCs combined with HA. Improvement was noted with VAS and ODI. Adverse effects were low. The authors concluded that while MPCs appeared to be safe and possibly effective, larger blinded prospective RCTs would be necessary to confirm these findings. Results demonstrated that intradiscal injection of MPCs appears to be safe and may be an effective and durable minimally invasive therapy for subjects who have CLBP associated with moderate DDD. Further study results demonstrated that intradiscal injection of MPCs appears to be safe and may be an effective and durable minimally invasive therapy for subjects who have CLBP associated with moderate DDD. Further study in a larger blinded prospective RCT that addresses the limitations of this initial clinical trial is warranted.<sup>89</sup>

Matta et al. (2020) noted the potential of cell therapy for pain improvement. The authors stated that extensive, well-controlled studies are needed that address disability. Biological factors that may reduce efficacy also warrant investigation (e.g., reduced pH, avascular status, long-term inflammation, progressive cell death).<sup>90</sup>

## **Noncontact Near-Infrared Spectroscopy**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                                                                              | <b>Conclusion</b> |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0640T                 | Noncontact near-infrared spectroscopy (eg, for measurement of deoxyhemoglobin, oxyhemoglobin, and ratio of tissue oxygenation), other than for screening for peripheral arterial disease, image acquisition, interpretation, and report; first anatomic site                                                                         | Not Covered       |
| 0859T                 | Noncontact near-infrared spectroscopy (e.g., for measurement of deoxyhemoglobin, oxyhemoglobin, and ratio of tissue oxygenation), other than for screening for peripheral arterial disease, image acquisition, interpretation, and report; each additional anatomic site (List separately in addition to code for primary procedure) | Not Covered       |
| 93998                 | Unlisted noninvasive vascular diagnostic study [when used to report contact near-infrared spectroscopy studies of wounds]                                                                                                                                                                                                            | Not Covered       |

**Noncontact near-infrared spectroscopy (NIRS) (other than for screening for peripheral arterial disease, image acquisition, interpretation, and report)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Reiter et al. (2025) conducted a single-center prospective cohort study to assess skin tear flap viability using NIRS. A significant improvement was noted in the median cross-sectional area with preserved skin flap (1.6 cm<sup>2</sup> [IQR, 0.9 cm<sup>2</sup>–2.9 cm<sup>2</sup>];  $P = .0001$  versus 9.1 cm<sup>2</sup> [IQR, 4.2 cm<sup>2</sup>–11.7 cm<sup>2</sup>]). Healing time was also less with preserved skin flap (28 days) as compared to 42 days for wounds without. Identified limitations warranted future research, such as determining a threshold value for optimal skin flap viability.<sup>91</sup>

Andersen et al. (2024) conducted a single-center feasibility study of NIRS for wound healing in adults. A total of 16 lower extremity wounds, regardless of size or etiology, underwent serial imaging. Despite positive clinical outcomes, additional research was identified as needed, including a control group, longer follow-up timeframes, and larger sample sizes.<sup>92</sup>

Lindelauf et al. (2022) conducted a systematic review comparing NIRS with hyperspectral imaging (HSI) for detecting flap failure in reconstructive surgery. A total of 3662 flap procedures using NIRS were performed in 1970 patients; 90 flap procedures were performed using HSI. Survival was 99% (95% CI: 97.8–99.7) in patients who underwent NIRS, compared with 92% (95% CI: 83.3–96.8) in patients who did not. No significant differences were noted for flaps with vascular crisis ( $p = 0.39$ ). Medical evidence shows promise for both NIRS and HSI; however, more research is needed to establish efficacy.<sup>93</sup>

### **Anterior Lumbar or Thoracolumbar Vertebral Body Tethering**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                              | <b>Conclusion</b> |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0656T                 | Anterior lumbar or thoracolumbar vertebral body tethering; up to 7 vertebral segments                                                                                | Not Covered       |
| 0657T                 | Anterior lumbar or thoracolumbar vertebral body tethering; 8 or more vertebral segments                                                                              | Not Covered       |
| 0790T                 | Revision (eg, augmentation, division of tether), replacement, or removal of thoracolumbar or lumbar vertebral body tethering, including thoracoscopy, when performed | Not Covered       |

**Anterior lumbar or thoracolumbar vertebral body tethering** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

In a recent umbrella review that included 11 relevant systematic reviews and meta-analyses, Lau et al. (2024) conducted a comprehensive and diligent analysis of the current evidence on the effectiveness and safety of VBT for the management of adolescent idiopathic scoliosis, combining results from various systematic reviews and meta-analyses. They found that VBT has shown promising results for treating adolescent idiopathic scoliosis. However, because VBT is a relatively new procedure, there was limited information on its long-term effects, and the rates of complications remain a significant concern.<sup>94</sup>

Alasadi et al. (2024) conducted a comprehensive review of VBT for adolescent idiopathic scoliosis, a non-fusion alternative to anterior or posterior spinal fusion. They reviewed the literature and reported on radiographic outcomes, complications, and anesthetic considerations. The review illustrates the potential benefits and challenges of VBT for adolescent idiopathic scoliosis. In their conclusions, they stressed the importance of skeletal maturity in relation to complications such as approach- and procedure-related pulmonary issues, device breakage, and high reoperation rates.<sup>95</sup>

Zhu et al. (2022) conducted a systematic review and a single-arm meta-analysis of VBT for scoliosis. A total of 1045 patients from 26 studies were included. Overall, the authors noted a 73.02% success rate; however,

15.8% of patients required additional surgery. Over half of the patients (52.17%) reported complications, including curve progression with tether breakage, pulmonary complications, and overcorrection.<sup>96</sup>

Shin et al. (2021) conducted a meta-analysis of 211 patients from 10 studies on the efficacy of anterior VBT versus posterior spinal fusion for the treatment of adolescent idiopathic scoliosis. The authors compared complication and reoperation rates. Patients demonstrated higher complication rates with anterior VBT. The authors noted the need for long-term, randomized, prospective studies to analyze the efficacy of VBT for the adolescent population.<sup>97</sup>

## **Artificial Intelligence (AI) and Computer-Based Analysis**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                  | <b>Conclusion</b> |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0691T                 | Automated analysis of an existing computed tomography study for vertebral fracture(s), including assessment of bone density when performed, data preparation, interpretation, and report | Not Covered       |
| 0693T                 | Comprehensive full body computer-based markerless 3D kinematic and kinetic motion analysis and report                                                                                    | Not Covered       |

**Artificial intelligence (AI) and computer-based analysis** are not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

Lin et al. (2024) conducted a multicenter study on fracture risk classification in 91 patients with metastatic hormone-sensitive prostate cancer (mHSPC). The authors stated that prospective studies are needed to evaluate patients with elevated BCT-assessed fracture risk and the efficacy of early administration of bone antiresorptive agents. It was also noted that further research should address the standardization of practice patterns at participating study centers, as they may differ and thus impact study results.<sup>98</sup>

Keaveny et al. (2020) performed a review on the efficacy and validation of biomechanical CT (BCT) for osteoporosis assessment. The study demonstrated favorable clinical outcomes compared with DXA scans for accurately assessing fracture risk and diagnosing osteoporosis. The authors noted that future clinical trials need to address long-term outcomes of non-DXA scans and algorithm-based assessments.<sup>99</sup>

Adams et al. (2018) reported on the Fracture, Osteoporosis, and CT Utilization Study (FOCUS), a retrospective case-cohort study of 3938 patients. Each patient had a routine CT (abdominal or pelvic) and a DXA scan at least 3 years after the CT. BCT demonstrated a sensitivity of 0.56 (95% CI, 0.51 to 0.60) in females and 0.45 (95% CI, 0.39 to 0.52) in males; specificity in females was 0.77 (95% CI, 0.72 to 0.81) and 0.82 (95% CI, 0.76 to 0.87) in males. Conversely, DXA demonstrated a sensitivity of 0.52 (95% CI, 0.47 to 0.56) in females and 0.43 (95% CI, 0.37 to 0.50) in males; specificity in females was 0.77 (95% CI, 0.73 to 0.81) and 0.83 (95% CI, 0.77 to 0.88) in males. The authors concluded that BCT is just as effective as DXA.<sup>100</sup>

## **Bone-Substitute Material Injections**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                    | <b>Conclusion</b> |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0707T                 | Injection(s), bone-substitute material (eg, calcium phosphate) into subchondral bone defect (ie, bone marrow lesion, bone bruise, stress injury, microtrabecular fracture), including imaging guidance and arthroscopic assistance for joint visualization | Not Covered       |
| 0869T                 | Injection(s), bone-substitute material for bone and/or soft tissue hardware fixation augmentation, including intraoperative imaging guidance, when performed                                                                                               | Not Covered       |

**Bone-substitute material injections** are not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

Cohen et al. (2025) conducted an observational study to evaluate the 12-month outcomes of subchondroplasty in patients with mild-to-moderate knee osteoarthritis and persistent bone marrow lesions. At the end of the 12-month follow-up, 79 patients completed the study. They found statistically significant improvements in all clinical endpoints from baseline to the 12-month follow-up. In the same period, no severe adverse events were reported. They concluded that subchondroplasty is a safe and effective treatment for symptoms associated with persistent bone marrow lesions in mild-to-moderate osteoarthritic knees. However, they noted that randomized clinical trials with rigorous radiological data collection are required to recommend subchondroplasty as a standard of care.<sup>101</sup>

Di Matteo et al. (2021) conducted a systematic review to assess the efficacy of intraosseous injections in patients with knee osteoarthritis and bone marrow lesions. Twelve studies that used various injection types were identified. A total of 459 patients were included in the study, receiving one of three injection types: calcium phosphate, platelet-rich plasma, or bone marrow concentrate. They concluded that while injections are minimally invasive and have a low complication rate, more high-quality evidence is needed to support their use.<sup>102</sup>

Nairn et al. (2021) conducted a systematic review of the literature to characterize the clinical outcomes of subchondroplasty and determine



whether patients who underwent the procedure experienced improvements in pain and functional outcomes. They examined 45 unique results and 17 studies and found that subchondroplasty shows possible improvements in pain and function, with a low rate of immediate transition to total knee arthroplasty (TKA) and low complication rates. They suggested that subchondroplasty has shown promising initial results but caution that high-quality, comparative studies with long-term follow-up are needed.<sup>103</sup>

### **Autologous Adipose-Derived Regenerative Cell (ADRC) Therapy for Partial-Thickness Rotator Cuff Repair**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                            | <b>Conclusion</b> |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0717T                 | Autologous adipose-derived regenerative cell (ADRC) therapy for partial thickness rotator cuff tear; adipose tissue harvesting, isolation and preparation of harvested cells, including incubation with cell dissociation enzymes, filtration, washing, and concentration of ADRCs | Not Covered       |
| 0718T                 | Autologous adipose-derived regenerative cell (ADRC) therapy for partial thickness rotator cuff tear; injection into supraspinatus tendon including ultrasound guidance, unilateral                                                                                                 | Not Covered       |

**Autologous adipose-derived regenerative cell (ADRC) therapy for partial-thickness rotator cuff repair** is not considered appropriate, as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Alt et al. (2021) discussed a case study of a 66-year-old patient suffering from traumatic symptomatic partial-thickness rotator cuff tear (sPTRCT). UA-ARDCs were injected 18 days following the injury; however, a follow-up MRI 2.5 months post-treatment revealed the need for open surgery. A biopsy was taken during this procedure, and tendon regeneration was noted. The group concluded that new tendon tissue can be formed by this procedure, a finding previously attributed only to fetal tendon development. No manipulation, stimulation, or genetic reprogramming of the cells was required prior to injection, which was considered significant.<sup>104</sup>

Hurd et al. (2020) conducted a randomized controlled trial (RCT) evaluating the safety and efficacy of fresh, uncultured, unmodified autologous adipose-derived regenerative cells (UA-ARDCs) for the treatment of sPTRCTs. The 20 participants (originally 84, of whom 64 withdrew from the study) were females and males aged 30–75 years, with MRI and orthopedic specialist confirmation of sPTRCT. The pilot study was intended to obtain safety data for use in subsequent studies, with a follow-up study involving 246 subjects. No

severe adverse events were reported in this trial compared with corticosteroid injection.<sup>105</sup>

The American Academy of Orthopaedic Surgeons (AAOS) published a 2025 guideline on the management of rotator cuff injuries. Regarding partial rotator cuff tears, the Academy recommends debridement or repair of high-grade partial-thickness cuff tears that have failed physical therapy to improve outcomes. No information or recommendations for ARDC injections were found.<sup>35</sup>

### **Posterior Vertebral Joint Replacement (Lumbar Spine)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                               | <b>Conclusion</b> |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0719T                 | Posterior vertebral joint replacement, including bilateral facetectomy, laminectomy, and radical discectomy, including imaging guidance, lumbar spine, single segment | Not Covered       |

**Posterior vertebral joint replacement in the lumbar spine** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Patwardhan et al. (2025) conducted a biomechanical experiment using human lumbosacral spine specimens to evaluate the shear resistance of L5–S1 segments implanted with lumbar total joint (TJR) prostheses. These were implanted bilaterally after laminectomy, facetectomy, and complete L5–S1 discectomy. Simulated loading was induced to determine stability levels. Stability was achieved approximately 3 months postoperatively. The group acknowledged that additional in vivo studies would be required.<sup>106</sup>

Sielatycki et al. (2021) conducted a retrospective analysis of prospectively collected data comparing patients who underwent lumbar total joint replacement (LTJR, replacing disc and facet joints) or transforaminal lumbar interbody fusion (TLIF) for conditions warranting fusion (e.g., degenerative spondylolisthesis, recurrent disc herniation). The study included 156 adult TLIF patients, matched to 52 LTJR patients via propensity score matching, for a total of 208 participants. Patients received a motion-preserving lumbar reconstruction implant replacing the function of both discs and facets, implanted with a bilateral transforaminal approach including complete facetectomies. At three months, both cohorts showed significant improvement in back and leg pain and in the disability index. It was concluded that this technology may be a viable alternative to TLIF for certain degenerative conditions. Studies were stated to be ongoing.<sup>107</sup>

The MOTUS Total Joint Replacement Investigational Device Exemption Study is currently underway (ClinicalTrials.gov ID NCT05438719). It is manufacturer-sponsored to demonstrate the noninferiority of the MOTUS

device compared to lumbar interbody fusion. This was a multi-center (up to 20 sites), prospective, non-blinded investigation. The MOTUS TJR device was approved by the US Food & Drug Administration (FDA) as an investigational device only for use in clinical trials.<sup>108</sup>

## Remote Real-Time, Motion Capture-Based Neurorehabilitative Therapy

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                    | Conclusion  |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0733T          | Remote real-time, motion capture-based neurorehabilitative therapy ordered by a physician or other qualified health care professional; supply and technical support, per 30 days                                                                    | Not Covered |
| 0734T          | Remote real-time, motion capture-based neurorehabilitative therapy ordered by a physician or other qualified health care professional; treatment management services by a physician or other qualified health care professional, per calendar month | Not Covered |
| 0791T          | Motor-cognitive, semi-immersive virtual reality-facilitated gait training, each 15 minutes (List separately in addition to code for primary procedure)                                                                                              | Not Covered |

**Remote real-time, motion capture-based neurorehabilitative therapy** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

El-Banna et al. (2026) conducted a systematic review of 22 studies on digital and intelligent technologies for neurorehabilitation. This included emerging therapeutic platforms as well as artificial intelligence (AI), gamification, and virtual reality. While the literature supported this type of therapy, concerns included methodological heterogeneity, short-term follow-up, and questions about AI transparency. The authors noted that standardized outcomes are needed, specifically in robust multicenter trials.<sup>109</sup>

Johnson et al. (2025) presented a review of telemedicine, telerehabilitation, and virtual care for the treatment of musculoskeletal conditions. While the demand for telehealth has grown over the last several years, additional research is needed, specifically on the design of clinical evaluation tools and virtual rehabilitation programs for remote care. The authors stressed the need for technology-friendly platforms for individuals with limited experience using computers and other devices. Disparities among minorities were also a noted challenge for study inclusion. Asian and Hispanic patients were less likely to access telehealth services versus White patients, which highlighted the necessity to remove barriers. Research was insufficient to highlight advancements in digital literacy and multilingual platforms.<sup>110</sup>

Park et al. (2024) examined the effectiveness of interactive telerehabilitation, using remote monitoring and data analysis to assess gait performance in older adults. Seventeen studies were included. After 4 weeks or more of telerehabilitation, all studies showed gait improvement in older adults with Parkinson's disease, stroke, and multiple sclerosis. Several limitations were noted, including publication and language bias, the inability to quantitatively compare the studies due to heterogeneity, and a lack of understanding of interactive telerehabilitation for other aspects (e.g., social, cognitive, and general well-being).<sup>111</sup>

## **Xenograft Implantation into the Articular Surface**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                           | <b>Conclusion</b> |
|-----------------------|---------------------------------------------------|-------------------|
| 0737T                 | Xenograft implantation into the articular surface | Not Covered       |

**Xenograft implantation into the articular surface** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

A systematic review and meta-analysis, conducted by Oetli et al. (2025), examined the safety and efficacy of xenograft augmentation in rotator cuff repair. The review aimed to compare the outcomes of xenograft repair with those of standard rotator cuff repair techniques. The authors found no statistically significant differences between the two approaches in strength measurements and range of motion, though xenograft augmentation was associated with slightly higher complication rates and functional scores.<sup>112</sup>

In their study of osteochondral regeneration, Rastegar et al. (2022) examined the regenerative effect of decellularized osteochondral extracellular matrix xenografts in combination with biological products in an osteochondral defect. The objective of this study was to prepare decellularized osteochondral scaffolds from sheep and implant the xenograft into a rabbit model with an osteochondral defect. Decellularization was performed using multistep methods, resulting in approximately 98% cell elimination. The authors concluded that xenograft decellularized extracellular matrix and biological factor platforms represent a promising approach to human osteochondral regeneration.<sup>113</sup>

Anderson et al. (2022) reviewed studies on NeoCart, a third-generation autologous chondrocyte implantation (ACI) therapeutic. Phased clinical trials, which began in 2003, found that the control microfracture procedure demonstrated the most pain relief and functional improvement depending on the size of the patient's lesion. The study was terminated in Phase III, and the therapy was not approved for use.<sup>114</sup>



## **Transcutaneous Magnetic Stimulation Using a Focused Low-Frequency Electromagnetic Pulse of a Peripheral Nerve**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                                                                                                    | <b>Conclusion</b> |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0766T                 | Transcutaneous magnetic stimulation by focused low-frequency electromagnetic pulse, peripheral nerve, with identification and marking of the treatment location, including noninvasive electroneurographic localization (nerve conduction localization), when performed; first nerve                                                                       | Not Covered       |
| 0767T                 | Transcutaneous magnetic stimulation by focused low-frequency electromagnetic pulse, peripheral nerve, with identification and marking of the treatment location, including noninvasive electroneurographic localization (nerve conduction localization), when performed; each additional nerve (List separately in addition to code for primary procedure) | Not Covered       |

**Transcutaneous magnetic stimulation using a focused low-frequency electromagnetic pulse to a peripheral nerve** is not considered appropriate, as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Park et al. (2023) conducted a systematic review and meta-analysis of the literature examining the effectiveness of peripheral magnetic stimulation (PMS), also known as transcutaneous magnetic stimulation (TMS), for acute and chronic post-surgical pain. The systematic review consisted of 18 studies. The meta-analysis revealed that those who received PMS had significantly lower mean postoperative pain scores after 7 days ( $n=6$ , mean difference [MD] = -1.64, 95% Confidence Interval [CI] = [-2.08, -1.20]), postoperative pain scores at 1 month after surgery ( $n=3$ , MD = -1.82, 95% CI = [-2.48, -1.17]), and postoperative pain scores at 2 months after surgery ( $n=3$ , MD = -1.96, 95% CI = [-3.67, -0.26]) when compared to sham or no intervention groups. There were no significant differences in pain after 6 and 12 months, after surgery, or acute postoperative consumption between those who had undergone PMS and those who had not. However, the authors noted the relatively low quality of the publications included in the analysis and the heterogeneity as limitations, and thus concluded that higher-quality evidence is needed to recommend PMS as a treatment for acute and chronic post-surgical pain.<sup>115</sup>

Rao et al. (2023) conducted a phase II randomized controlled trial (RCT) as a follow-up to a pilot study that demonstrated the utility of TMS for pain relief in patients with diabetic peripheral neuropathy (DPN). Of the 31 participants in the analysis, both the sham group and the TMS treatment group experienced a decrease in mean pain scores from baseline to the final visit. This effect was observed across the morning (AM) and afternoon (PM) pain scores and the overall pain score. However, there was no significant difference in the mean AM ( $p=0.91$  at baseline,  $p=0.65$  at final visit), PM ( $p=0.74$  at baseline,  $p=0.96$  at final visit), or overall pain scores ( $p=0.80$  at baseline,  $p=0.83$  at final visit), indicating that TMS had no treatment effect on pain. The authors concluded that, although the treatment was safe, TMS does not significantly reduce pain.<sup>116</sup>

Panathoop et al. (2023) conducted a pilot RCT examining the effects of five sessions of repetitive PMS (rPMS) compared with conventional therapy (patient education, gliding exercise, and vitamins B1-6-12) on carpal tunnel syndrome. Pain outcomes were measured using the Boston Carpal Tunnel Questionnaire (BCTQ), which included a symptom severity scale (SSS) and a functional status scale (FSS). The trial enrolled 24 participants and found that those with rPMS experienced a decrease in BQ-SSS after two weeks ( $p=0.009$ ); however, the difference in pain scores over two weeks in the rPMS group did not significantly differ from the difference in scores in the control group for BQ-SSS ( $p=0.27$ ) or BQ-FSS ( $p=0.22$ ), which indicated that the rPMS did not substantially improve pain in the patient.<sup>117</sup>

### **Real-Time Pressure-Sensing Epidural Guidance System**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                            | <b>Conclusion</b> |
|-----------------------|--------------------------------------------------------------------------------------------------------------------|-------------------|
| 0777T                 | Real-time pressure-sensing epidural guidance system<br>(List separately in addition to code for primary procedure) | Not Covered       |

A **real-time pressure-sensing epidural guidance system** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Vaira et al. (2019) examined the sensitivity and specificity of CompuFlo, a device for epidural placement that provides real-time pressure measurements and can differentiate between false and true loss of resistance during epidural space identification procedures. The authors enrolled 120 healthy women who requested labor epidural analgesia and received an epidural from the CompuFlo device. In these women, the authors found that CompuFlo distinguished between true and false loss-of-resistance (sensitivity = 0.83, specificity = 0.81). While the authors noted the device's capabilities, the small sample size and lack of a comparison group limit the generalizability of the study. Additional robust study designs, such as multisite randomized controlled trials (RCTs), are needed to establish the device's utility.<sup>118</sup>

Coccoluto et al. (2021) conducted a single-arm, open-label study to examine the sensitivity and specificity of the Computer Controlled Drug Delivery System (CCDDS) with continuous pressure and waveform monitoring in establishing catheter placement in parturients who received the combined spinal-epidural (CSE) technique for labor analgesia. The authors collected data from 40 patients undergoing CSE labor analgesia with successful analgesia. Ultimately, the pressure waveform analysis had high sensitivity (95%), positive predictive value (100%), and specificity (100%), but a lower negative predictive value (60%). The authors concluded that the device's high sensitivity and positive predictive value indicated success in pulsatile pressure waveform monitoring, though more studies are needed with comparison groups, randomization, and larger sample sizes.<sup>119</sup>

Capogna, Coccoluto, and Velardo (2020) conducted a simulation study that determined whether CompuFlo had a better ability to identify the epidural space than the standard technique. The simulation involved 52 expert obstetric anesthesiologists, who were randomly assigned to either the CompuFlo device or the standard technique. Participants were asked to stop the needle when resistance was deemed to be lost in both groups. The primary outcome of the study was the difference in Tuohy needle extension between those who used CompuFlo and those who used the standard technique. The authors found a significant difference in needle extension length between the two groups ( $p < 0.00001$ ), with the CompuFlo group having shorter needle extension than the standard technique group. While the results supported the CompuFlo method, the study was a simulation, and real-life patient data were identified as necessary to properly evaluate the efficacy of real-time pressure-sensing epidural guidance systems.<sup>120</sup>

## **Surface Mechanomyography (sMMG)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                   | <b>Conclusion</b> |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0778T                 | Surface mechanomyography (sMMG) with concurrent application of inertial measurement unit (IMU) sensors for measurement of multi-joint range of motion, posture, gait, and muscle function | Not Covered       |

**Surface mechanomyography (sMMG) with concurrent application of inertial measurement unit (IMU) sensors** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Kareem et al. (2024) conducted a cross-sectional study of 280 participants, including 140 with type 2 diabetes, to examine the utility of combining surface mechanomyography (sMMG) and electrogoniometry for quantifying tendon reflexes. Variables of interest that were collected from the sMMG were muscle velocity (MCV), muscle relaxation velocity (MRV), and mechanomyography peak amplitude (MMG Amp). The authors found that patients with type 2 diabetes had significantly lower mean MCV ( $p=0.01$ ) and MRV ( $p<0.001$ ), highlighting sMMG's ability to discriminate patellar tendon reflexes between those with type 2 diabetes and those without. However, the authors did not test sMMG in combination with inertial measurement unit (IMU) sensors, suggesting that more evidence is needed to support this combination.<sup>121</sup>

Linderman et al. (2023) evaluated 15 participants cross-sectionally to determine if sMMG detection of muscle contraction timing was similar to surface electromyography (sEMG) measures. All participants completed bilateral deep squats, and a subset of 10 participants also completed 3 trials of repeated unilateral partial squat activity. All activity was performed while simultaneously wearing an sMMG sensor and an sEMG sensor. The authors found no significant differences in sensor measurements between bilateral ( $p=0.822$ ) and partial ( $p=0.246$ ) squats. sMMG sensors had the highest reliability for quadriceps excursion magnitude during bilateral and partial squats, indicating that sMMG consistently and accurately provided key quadriceps muscle metrics. However, the sample size in this analysis was very small, and sMMG was not tested in combination with IMU sensors. Thus, the

authors stated that more evidence is needed to support the combination of sMMG and IMU.<sup>122</sup>

Scarborough et al. (2023) compared sMMG and sEMG to quantify muscle contractility. The investigators examined the quadriceps, hamstrings, and gastrocnemius muscles in 15 participants. All movements were performed while simultaneously wearing an sMMG and an sEMG. Significant correlations (defined as Pearson R correlation significant at  $p < 0.05$ ) between sMMG and sEMG readings of average muscle activation in the quadriceps, hamstrings, and gastrocnemius muscles were observed. Data supported sMMG's ability to measure muscle activation. However, sMMG was not evaluated in conjunction with IMU sensors, and future studies should simultaneously assess sMMG and IMU measurements of muscle to confirm clinical significance.<sup>123</sup>

## **Transcutaneous Auricular Neurostimulation**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                   | <b>Conclusion</b> |
|-----------------------|-----------------------------------------------------------------------------------------------------------|-------------------|
| 0783T                 | Transcutaneous auricular neurostimulation, set-up, calibration, and patient education on use of equipment | Not Covered       |

**Transcutaneous auricular neurostimulation** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Buchman et al. (2025) conducted a meta-analysis of the effect of vagus nerve stimulation, including transcutaneous auricular VNS (taVNS), on reducing pain as indicated by VAS or NRS scores. The authors included six small studies with a total of 146 patients – three randomized controlled trials (RCTs) evaluated taVNS for musculoskeletal pain secondary to systemic lupus erythematosus, knee osteoarthritis, chronic knee pain, chronic low back pain, polymyalgia rheumatica, and fibromyalgia. Clinical outcomes demonstrated effectiveness; however, studies with larger sample sizes are required to establish long-term outcomes.<sup>124</sup>

Duff et al. (2024) conducted a systematic review and meta-analysis of the efficacy of auricular vagus nerve stimulation (aVNS) for chronic and acute pain. The meta-analysis included 13 studies, which focused on chronic and postoperative pain. While aVNS was found to be an effective non-drug therapy, research was lacking on stimulation parameters and standardized treatment protocols. Longer follow-up periods were also noted as a future research need.<sup>125</sup>

Costa et al. (2024) also conducted a systematic review and meta-analysis of transcutaneous vagus nerve stimulation for both acute and chronic pain. Fifteen studies were included and focused on pain intensity as measured by numerical rating scales; six used transcutaneous auricular VNS (taVNS). Positive clinical outcomes were reported, and consistency among the studies showed support for taVNS. The authors noted a lack of RCTs to compare taVNS with a sham group. Specifically, more research is needed on the efficacy of treatments for chronic pain.<sup>126</sup>

### **Spinal Neurostimulator Electrode Array with an Integrated Neurostimulator**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                       | <b>Conclusion</b> |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0784T                 | Insertion or replacement of percutaneous electrode array, spinal, with integrated neurostimulator, including imaging guidance, when performed | Not Covered       |
| 0785T                 | Revision or removal of neurostimulator electrode array, spinal, with integrated neurostimulator                                               | Not Covered       |

A **spinal neurostimulator electrode array with an integrated neurostimulator** is not considered appropriate, as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Bolash et al. (2022) examined the effectiveness of the Freedom Spinal Cord Stimulator System (FSCSS) for the treatment of failed back surgery syndrome. The authors enrolled 39 patients who were implanted with up to 2 permanent, 8-contact neurostimulators comprising electrode arrays and separate receivers. The main outcome was defined as the percentage of patients with a greater than or equal to 50% decrease in the VAS pain intensity score from baseline to 6 months post-implantation. Out of the 39 participants, 33 experienced a greater than or equal to 50% decrease in VAS, which indicates that FSCSS decreased pain. However, the study examined only 39 patients and lacked a comparison group. Further analyses in larger randomized controlled trials (RCTs) are needed to obtain sufficient evidence for the use of a spinal neurostimulator electrode array with an integrated neurostimulator.<sup>127</sup>

Muskala and Vanquathem (2022) published a case report of 12 patients with chronic back and leg pain (CBLP). The case report examined the use of powered spinal cord stimulation for CBLP. The 12 patients were followed for 12 months after percutaneous implantation of an FSCSS system that comprised an electrode array and a separate receiver. VAS was collected as a measure of pain. The mean VAS score decreased from baseline to follow-up (6 or 12 months after baseline) from 8.94 to 2.62, which indicated that FSCSS implantation reduced pain. While the results supported the simultaneous use of electrode arrays and a separate receiver, the findings need to be replicated in stronger studies with larger sample sizes to ensure that the procedure is beneficial in larger populations.<sup>128</sup>



Medina-Pérez et al. (2023) published a case study of a 31-year-old male with a diagnosis of intractable left testicular and thigh pain associated with L2-L3 radiculopathy and post-surgical neuropathy of the genitofemoral nerve. The patient received a combination of a neurostimulator and an electrode, resulting in a 90% reduction in pain after 3 months and no adverse events. The case study supported the simultaneous use of electrodes and neurostimulation to reduce pain, though stronger evidence is required to support widespread clinical use.<sup>129</sup>

### **Percutaneous Injection of a Calcium-Based Biodegradable Osteoconductive Material (Proximal Femur)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                | <b>Conclusion</b> |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0814T                 | Percutaneous injection of calcium-based biodegradable osteoconductive material, proximal femur, including imaging guidance, unilateral | Not Covered       |

**Percutaneous injection of a calcium-based biodegradable osteoconductive material (proximal femur)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Lun et al. (2024) analyzed the limitations of calcium sulfate for non-load-bearing bone defects. Despite the wide use of biomaterials due to their “superior biocompatibility, biodegradability, and non-toxicity,” they have demonstrated a “low compressive strength and rapid degradation rate.” Noted limitations include adequate mechanical strength to use calcium sulfate and biomaterials that are calcium-sulfate-based in areas that are load-bearing. Reported complications were related to the rapid absorption of calcium sulfate. The research lacked evidence on the properties of calcium sulfate, which could cause interactions or complications.<sup>130</sup>

Md Dali et al. (2023) conducted a narrative review of preclinical evidence on the osteogenic properties of calcium phosphate with synthetic materials. Calcium phosphate cement (CPC) was combined with biomimetic materials, chemical elements/compounds, or polymers. The study demonstrated increased bioactivity, biocompatibility, mechanical strength, and anti-washout properties when two or more synthetic materials were added to CPC. Additional findings demonstrated the need for research on in vitro and in vivo studies to establish the effectiveness of CPC composites.<sup>131</sup>

Amin et al. (2022) presented a case report of a 40-year-old male who underwent CPC for a cephalomedullary nail that was removed. At 3-weeks postoperative, the patient sustained a non-traumatic subcapital femoral neck fracture. The authors noted that the current literature lacks studies on the use of CPC after hardware removal.<sup>132</sup>

### **Ultrasound-Based Radiofrequency Echographic Multi-Spectrometry (REMS) Bone-Density Studies and Fracture-Risk Assessments**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                         | <b>Conclusion</b> |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0815T                 | Ultrasound-based radiofrequency echographic multi-spectrometry (REMS), bone-density study and fracture-risk assessment, 1 or more sites, hips, pelvis, or spine | Not Covered       |

**Ultrasound-based radiofrequency echographic multi-spectrometry (REMS) bone-density studies and fracture-risk assessments** are not considered appropriate, as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

The US Preventive Services Task Force (USPSTF) published a 2025 recommendation, Screening for Osteoporosis to Prevent Fractures. Central dual-energy absorptiometry (DXA) was stated to be the established standard for osteoporosis screening. There was no discussion of ultrasound-based radiofrequency echographic multispectrometry (REMS) in the recommendation. The committee recommended additional research on the harms and benefits, as well as on different screening methods.<sup>133</sup>

Al Refaie et al. (2023) examined the current use of ultrasound-based radiofrequency echographic multi-spectrometry (REMS) in the assessment of bone status. They stated that DXA was the most commonly used method for assessing bone mineral density (BMD); however, screening modalities that do not use ionizing radiation are being studied for early diagnosis. REMS was reported to show promise for qualitative assessment of bone density. Future and ongoing research was stated to increase understanding of utility.<sup>134</sup>

In a 2025 prospective observational study, Adami et al. enrolled 1516 women aged 30 to 90 years, of whom 1370 completed the study. In the follow-up period, 14.0% of clinical fragility fractures occurred. Women who suffered a fragility fracture were older and shorter in height than other study participants. A high correlation between vertebral DXA and REMS T-score values was observed. In discussion, future demographic changes are expected to increase the incidence of osteoporotic fragility fractures, necessitating prevention and early detection. Further studies were recommended.<sup>135</sup>

## **Intraoperative Therapeutic Electrical Stimulation (TES)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                              | <b>Conclusion</b> |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0882T                 | Intraoperative therapeutic electrical stimulation of peripheral nerve to promote nerve regeneration, including lead placement and removal, upper extremity, minimum of 10 minutes; initial nerve (List separately in addition to code for primary procedure)         | Not Covered       |
| 0883T                 | Intraoperative therapeutic electrical stimulation of peripheral nerve to promote nerve regeneration, including lead placement and removal, upper extremity, minimum of 10 minutes; each additional nerve (List separately in addition to code for primary procedure) | Not Covered       |

**Intraoperative therapeutic electrical stimulation (TES)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Liu et al. (2024) reviewed the use of electrical stimulation for peripheral nerve regeneration. There were no studies with human subjects that have assessed the reconstruction of a nerve gap using electrical stimulation. The authors stated that the device's cost, increased operative time, and anesthesia concerns may negate any potential clinical benefits. Due to a lack of high-quality published studies, the evidence did not support TES for nerve regeneration.<sup>136</sup>

Ni et al. (2023) assessed studies on TES for peripheral nerve injury. While some positive clinical outcomes were demonstrated, the authors noted that TES could limit nerve regeneration, decrease muscle excitability, and exacerbate muscle atrophy. Research needs included electrical stimulation-induced brain activity and potential side effects of treatment, as well as neurological recovery following treatment. Larger studies were also noted as a need to demonstrate increased pain relief, muscle mass, and strength.<sup>137</sup>

ElAbd et al. (2022) reviewed the role of electrical stimulation for peripheral nerve generation. Nine studies were included – four randomized controlled trials (RCTs), three case series, and two case reports. Noted complications included bone formation, skin pigmentation, and wire remnant removal. Finally, standardization of stimulation parameters was necessary to provide therapy universally.<sup>138</sup>

### **Placement of a Bone Marrow Sampling Port**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                           | <b>Conclusion</b> |
|-----------------------|-----------------------------------------------------------------------------------|-------------------|
| 0901T                 | Placement of bone marrow sampling port, including imaging guidance when performed | Not Covered       |

**Placement of a bone marrow sampling port** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

The Portomar™ bone marrow sampling port is currently undergoing clinical trials. No current published study results were found in a literature search.<sup>139</sup>

## **Orthopedic Implant Movement Analysis**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                            | <b>Conclusion</b> |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 0946T                 | Orthopedic implant movement analysis using paired computed tomography (CT) examination of the target structure, including data acquisition, data preparation and transmission, interpretation and report (including CT scan of the joint or extremity performed with paired views) | Not Covered       |

**Orthopedic implant movement analysis** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Wretenberg et al. (2021) examined the use of implant movement analysis (IMA) for diagnosing aseptic loosening in total knee arthroplasty (TKA). The observational study included 40 patients with uncertain aseptic loosening, evaluated using complementary techniques, including detection of radiolucent lines on planar radiography, IMA, and varus-valgus provocation. Results included radiolucent lines in 22 of 40 knees and loosening in 8 knees. No loosening was found in the 17 knees without radiolucent lines. The group concluded that the short-term experience with IMA is promising.<sup>140</sup>

In a 2025 retrospective review, Listopadzki et al. examined CT with implant movement analysis (CT-IMA) in the work-up of painful total hip prostheses. Eighty patients with painful hip implants received plain radiographs and CT-IMA. Results included 66 patients placed in the radiographically stable-IMA stable group (Group 1), six in the radiographically loose-IMA stable group (Group 2), and eight in the radiographically loose-IMA loose group (Group 3). Hip Disability and Osteoarthritis Outcome Score – Joint Replacement (HOOS, JR) improved in Group 1 from 49.5 to 64.2, Group 2 from 57.7 to 69.1, and 45.5 to 71.8 in Group 3. The authors concluded that CT-IMA could have value in decision-making for revision surgery.<sup>141</sup>

Van de Vusse et al. (2025) conducted a systematic review regarding the accuracy and precision of CT-based radiostereometric analysis (CT-RSA) in arthroplasty. Of the 527 studies evaluated, 23 (163 patients) met the inclusion criteria (written in English, used CT for post-arthroplasty migration analysis,

etc.). CT-RSA techniques included examination of the spine, shoulder, hip, and knee. The group concluded that the evidence showed promise for CT-RSA in the evaluation of prosthetic joint migration, and recommended future research with a focus on low-dose CT protocols.<sup>142</sup>

### **Thumb Carpometacarpal (CMC) Arthroplasty**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                       | <b>Conclusion</b> |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 1003T                 | Arthroplasty, first carpometacarpal joint, with distal trapezial and proximal first metacarpal prosthetic replacement (eg, first carpometacarpal total joint) | Not Covered       |

**Thumb carpometacarpal (CMC) arthroplasty** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness. This includes using paired computed tomography (CT) examination of the target structure (i.e., data acquisition, data preparation, and transmission).

Hammarstedt et al. (2025) conducted a review of surgical treatment for CMC arthroplasty for arthritic thumb. The authors found no superiority over various surgical options to improve pain, function, strength, and range of motion. Research was not sufficient on minimally invasive techniques and long-term outcomes. Further research was also needed on better outcome measures to adequately assess hand function.<sup>143</sup>

Simón-Pérez et al. (2024) conducted an observational cohort study with 221 patients. The authors sought to establish the association between trapezium size and failure of total trapeziometacarpal prosthesis. Prosthesis removal was required in 15 patients – this included nine patients with trapezium cup loosening and six with prosthesis dislocation. A major limitation of the study included the measurement of trapezium size (on two-dimensional radiographs versus three-dimensional computed tomography [CT]).<sup>144</sup>

Farkash et al. (2023) performed a multicenter retrospective study of two modern implant designs and the complication and failure rate of thumb CMC arthroplasty. A total of 381 patients were enrolled at six hospitals. Noted complications were infections, dislocations, fractures, nerve and tendon injuries, and complex regional pain syndrome (CRPS). Minor adverse events were reported in 25% of patients – transient irritation of the superficial radial nerve and De Quervain tendinopathy were listed as the most common events.<sup>145</sup>



## Experimental & Investigational (E&I) Codes

### Percutaneous Decompression

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                                                                          | Conclusion                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 62287          | Decompression, percutaneous, of nucleus pulposus of intervertebral disc, any method utilizing needle-based technique to remove disc material under fluoroscopic imaging or other form of indirect visualization, with discography and/or epidural injection(s) at the treated level(s), when performed, single or multiple levels, lumbar | Not Covered                                                                                  |
| 62330          | Decompression, percutaneous, with partial removal of the ligamentum flavum, including laminotomy for access, epidurography, and imaging guidance (ie, CT or fluoroscopy), bilateral; one interspace, lumbar                                                                                                                               | Commercial Not Covered; for Medicare Advantage use CMS National Coverage Determination (NCD) |
| 62331          | Decompression, percutaneous, with partial removal of the ligamentum flavum, including laminotomy for access, epidurography, and imaging guidance (ie, CT or fluoroscopy), bilateral; additional interspace(s), lumbar (List separately in addition to code for primary procedure)                                                         | Commercial Not Covered; for Medicare Advantage use CMS National Coverage Determination (NCD) |

**Percutaneous decompression** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Karlsson et al. (2024) conducted a randomized clinical trial to compare 5-year outcomes after decompression alone and decompression with fusion for the treatment of lumbar spinal stenosis. The 5-year ODI scores were similar across treatments, and the EuroQol five-dimension questionnaire was higher with decompression alone than with decompression and fusion. These results indicated that adding fusion to decompression surgeries may not improve patient outcomes 5 years post-surgery, findings consistent with

those reported at the two-year time point. The authors concluded that decompression alone is preferred for spinal stenosis surgery.<sup>146</sup>

Wei et al. (2021) conducted a systematic review and network meta-analysis evaluating the nine most common interventions for lumbar spinal stenosis: laminectomy, laminotomy, minimally invasive decompression, endoscopic decompression, decompression plus fusion, decompression, split-decompression, interspinous process spacer device, and non-surgical. All surgical interventions, except split-decompression, were more effective at relieving pain than non-surgical interventions. Laminotomy was best for improving short- and long-term dysfunction, although differences were not statistically significant, and endoscopic decompression had the lowest complication rates and shortest hospitalization time.<sup>147</sup>

In a retrospective database study of 7315 patients, Huynh et al. (2017) reviewed spinal decompression and discectomy procedures in children. It was noted that conditions requiring such procedures, including spinal stenosis/spondylosis and disc herniation, are less often seen in children than in adults. The authors also stated that children with these conditions are often less responsive to conservative management strategies, including exercise, physical therapy, and pharmacological pain control, compared to adults. The mean patient age was 12.7 years for pediatric spondylolysis/spinal stenosis and 18 years for pediatric disc herniation. For patients with pediatric spondylolysis/spinal stenosis, complication rates were higher after decompression (18.1%) than after discectomy (5.3%) procedures. Length of hospital stay was also longer in pediatric spondylolysis/spinal stenosis patients treated with decompression compared to discectomy (5 vs. 1.7 days).<sup>48</sup>

### **Laminotomy (Hemilaminectomy) with Decompression of Nerve Root(s)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                                                                                                                  | <b>Conclusion</b> |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 63032                 | Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; with repair of annular defect by implantation of bone-anchored annular closure device, including all imaging guidance, 1 interspace, lumbar (List separately in addition to code for primary procedure) | Not Covered       |

**Laminotomy (hemilaminectomy) with decompression of nerve root(s)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Zhao et al. (2025) conducted a retrospective analysis of 65 patients with two-level lumbar spinal stenosis (LSS) that evaluated the feasibility of bilateral synchronous unilateral biportal endoscopy followed by unilateral laminotomy and bilateral decompression (BS-UBE-ULBD). There were no postoperative complications, and all surgeries were deemed successful. Student t-tests were conducted to evaluate the VAS and ODI to compare postoperative pain and disability 1 week and 6 months after surgery, respectively. The authors found that lumbar VAS, leg VAS, and ODI at 6 months were significantly lower than at 1 week post-surgery ( $p < 0.05$ ), indicating that the procedure did improve clinical symptoms. While this is promising, a small sample size of 65 patients limits generalizability. Additionally, this procedure includes UBE in addition to unilateral laminotomy and bilateral decompression, and the sole combination of unilateral laminotomy and bilateral decompression was not evaluated. Thus, future research is needed to confirm the efficacy of this procedure.<sup>148</sup>

Wei et al. (2021) conducted a meta-analysis of randomized controlled trials (RCTs) evaluating different interventions for LSS. The main outcomes of interest were pain intensity and disability. In the analysis, 34 RCTs were included; none of the analyses included laminotomy in combination with partial facetectomy, foraminotomy and/or excision of herniated intervertebral

disc. The lack of evidence for this combination of procedures indicated that more RCTs are needed to evaluate their efficacy.<sup>147</sup>

Sidronio and Kumar (2021) published a case report of a patient with ossification of the ligamenta flava (OLF). In the case report, the patient presented with a 6-year history of an inability to walk more than a few steps due to severe chronic lumbago with neurogenic claudication. As a result, the patient underwent endoscopic intralaminar laminotomy with partial facetectomy and lateral recess decompression. The patient immediately reported improvement in radicular symptoms and was neurologically intact 9 days postoperatively. Overall, the endoscopic intralaminar laminotomy with partial facetectomy and lateral recess decompression was successful in treating OLF, though this was evaluated in a single case, and replication is needed to thoroughly assess the procedure's efficacy.<sup>149</sup>

### **Radiofrequency Ablation (RFA) of the Sacroiliac Joint**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                        | <b>Conclusion</b> |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 64624                 | Destruction by neurolytic agent, genicular nerve branches including imaging guidance, when performed                           | Not Covered       |
| 64625                 | Radiofrequency ablation, nerves innervating the sacroiliac joint, with image guidance (ie, fluoroscopy or computed tomography) | Not Covered       |

**Radiofrequency ablation (RFA) of the sacroiliac joint** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Loh et al. (2022) conducted an observational study evaluating changes in sacroiliac joint pain (SJP) following ultrasound-guided RFA. In 31 participants, the authors found statistically significant differences in mean measures of the numeric rating scale (NRS) component of The Pain, Disability, Quality of Life Questionnaire-Spine (PDQQ-S) scale ( $p = 0.0005$ ) when comparing baseline to 9-month follow-up, such that there was a lower mean NRS component 9 months after RAF. While these preliminary findings were promising, they did not use fluoroscopy or CT as the imaging guidance modality, and the sample size was very small. Thus, replication was deemed necessary to support the use of fluoroscopy or CT and to increase the generalizability of the results.<sup>150</sup>

Chou et al. (2021) conducted a cohort study to examine differences in RAF treatment for lower back pain (LBP), defined as either facet joint pain or SJP, between Technetium Tc99m methylene diphosphonate single photon emission tomography/CT-identified and modified Fortin finger test (FFT)-identified LBP. The VAS was used to determine the patient's pain level. The authors used generalized estimating equations to estimate changes in VAS over time, adjusting for age, gender, and body mass index. Of the 40 patients, those with imaging-diagnosed pain had significantly lower mean pain scores at 1 week, 1 month, 3 months, and 6 months post-treatment than those with FFT-diagnosed pain, suggesting that Technetium Tc99m methylene diphosphonate single photon emission tomography/CT improved RAF treatment. However, the small sample size reduced the robustness of the results, and the inclusion of patients with facet joint pain limited

generalizability to patients with only SJP. Replicated analyses in larger cohorts are warranted.<sup>151</sup>

Lowe et al. (2022) conducted a systematic review of a randomized controlled trial (RCT) that examined both the use of RFA for SJP and the quality of the research. Of the 16 trials reviewed, 15 supported RFA. The one trial that did not support its use contained the largest sample size; however, it also had the highest risk of bias due to missing information, no single- or double-blinding, and differential dropout rates. The authors also noted that a definitive, large-scale RCT has not been conducted and that evidence supporting the use of RFA beyond 1 year is lacking, underscoring the need for larger-scale RCTs with longer follow-up.<sup>152</sup>

### **Percutaneous Implantation of a Neurostimulator Electrode Array (Sacral Nerve)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                      | <b>Conclusion</b> |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 64561                 | Percutaneous implantation of neurostimulator electrode array; sacral nerve (transforaminal placement) including image guidance, if performed | Not Covered       |

**Percutaneous implantation of a neurostimulator electrode array (sacral nerve)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Pikov et al. (2023) conducted a systematic review that evaluated vagus nerve stimulation (VNS) and sacral nerve stimulation (SNS) with either implantable or transcutaneous electrodes in patients with inflammatory bowel disease (IBD). The authors, interested in efficacy, potential mechanisms, and safety, identified two studies evaluating SNS and only one that used percutaneous SNS electrodes. In the study, 26 adult patients were evaluated, and the authors found that, in the SNS arm, inflammatory blood biomarkers and ulcerative colitis disease activity were significantly reduced compared with those without SNS stimulation, suggesting a potential utility of SNS in reducing IBD symptoms. However, the authors found only one study that evaluated this, which included only 26 participants; further evidence is necessary to support this claim.<sup>153</sup>

Wang et al. (2025) conducted a systematic review to evaluate the effectiveness of current electrical neuromodulation techniques for IBS. In this review, the authors selected 18 articles that met the review criteria, 5 of which examined invasive SNS. The 5 studies had sample sizes ranging from 6 to 21 and consisted of randomized controlled trials (RCTs), descriptive follow-up, and uncontrolled study designs. Overall, the study results were mixed, with some showing that SNS resulted in positive effects on IBS symptoms and others showing no effect. This review highlighted the heterogeneity in the literature regarding the effectiveness of SNS and the need for larger RCTs and meta-analyses examining the use of percutaneous sacral nerve neurostimulation.<sup>154</sup>

Fagundes et al. (2026) published a case report of a 27-year old female with chronic urinary symptoms ranging in frequency and severity. The patient had undergone prior unsuccessful treatments, so the care team implanted two percutaneous electrodes to stimulate the sacral nerve. The implantation was deemed successful, as it resulted in reduced average voiding residue, UTIs, and bladder catheterizations, and improved the patient's quality of life. Overall, the case report highlighted the potential utility of percutaneously implanted electrode neurostimulators in the sacral nerve; however, higher-quality studies are needed to demonstrate their widespread utility.<sup>155</sup>



## Unlisted Codes

| CPT/HCPCS Code | Code Description                                    | Conclusion                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20999          | Unlisted procedure, musculoskeletal system, general | See <i>Cervical Spinal Fusion, Lumbar Spinal Fusion, or Sacroiliac Joint Fusion</i> for covered indications.<br><br>Not covered for all other indications.                                                                                                                                                                                                                                 |
| 22899          | Unlisted procedure, spine                           | See <i>Cervical Spinal Fusion, Lumbar Spinal Fusion, Facet Joint Allograft Implants, Facet Joint Radiofrequency Ablation (RFA), Kyphectomy, Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy), Pediatric Vertebral Body Tethering, Vertebral Body Tethering, or Vertebral Corpectomy</i> for covered indications.<br><br>Not covered for all other indications. |
| 23929          | Unlisted procedure, shoulder                        | See <i>Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder), Shoulder Arthroplasty, or Shoulder Arthroscopy</i> for covered indications.<br><br>Not covered for all other indications.                                                                                                                                                                                                   |
| 27299          | Unlisted procedure, pelvis or hip joint             | See <i>Hip Arthroscopy, Hip Core Decompression with or without Bone Grafting, Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder), or Periacetabular Osteotomy/Surgical Dislocation</i> for covered indications.<br><br>Not covered for all other indications.                                                                                                                          |
| 27599          | Unlisted procedure, femur or knee                   | See <i>Knee Arthroplasty, Knee Arthroscopy, or Pediatric</i>                                                                                                                                                                                                                                                                                                                               |

|       |                                                                  |                                                                                                                                                                                                                         |
|-------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                                                                  | <p><i>Arthroscopy Procedures (Hip, Knee, Shoulder)</i> for covered indications.</p> <p>Not covered for all other indications.</p>                                                                                       |
| 28899 | Unlisted procedure of foot and toes                              | <p>See <i>Hammertoe, Claw Toe, or Mallet Toe Surgical Treatment with or without Fusion</i> for covered indications.</p> <p>Not covered for all other indications.</p>                                                   |
| 29999 | Unlisted procedure, arthroscopy                                  | <p>See <i>Hip Arthroscopy, Knee Arthroscopy, Knee Arthroscopy, or Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder)</i> for covered indications.</p> <p>Not covered for all other indications.</p>                 |
| 64999 | Unlisted procedure, nervous system                               | <p>See <i>Carpal Tunnel Release, Epidural Steroid Injections (ESI), Facet Joint Injections, or Facet Joint Radiofrequency Ablation (RFA)</i> for covered indications.</p> <p>Not covered for all other indications.</p> |
| 97039 | Unlisted modality (specify type and time if constant attendance) | <p>See <i>Physical and Occupational Therapy</i> for covered indications.</p> <p>Not covered for all other indications.</p>                                                                                              |
| 97139 | Unlisted therapeutic procedure (specify)                         | <p>See <i>Physical and Occupational Therapy</i> for covered indications.</p> <p>Not covered for all other indications.</p>                                                                                              |
| 97799 | Unlisted physical medicine/rehabilitation service or procedure   | <p>See <i>Physical and Occupational Therapy</i> for covered indications.</p> <p>Not covered for all other indications.</p>                                                                                              |

Unlisted code use outside of covered policies listed above is considered not covered due to **ANY** of the following:

- A more specific code exists; **OR**
- Insufficient documentation; **OR**
- The procedure is considered experimental and investigational; **OR**
- A code has been improperly bundled.

Childers et al. (2024) conducted a systematic review of six studies with 123 patients with rotator cuff injuries treated with tuberopecty. The range of active forward flexion and abduction postoperatively was 131° to 165°, and 123° to 160°, respectively. Acromiohumeral distance changed from -1 mm to -0.6 mm. The authors noted that reoperation rates ranged from 0% to 19%. Future suggested research should include larger study sizes and comparison groups to better determine safety and efficacy.<sup>156</sup>

Seo et al. (2023) analyzed 18 cases of simultaneous arthroscopic biologic tuberopecty and bursal acromial reconstruction. Improvement was demonstrated in VAS and ASES scores, as well as the range of motion. Radiographic imaging showed an improved acromiohumeral distance ( $4.3 \pm 4.1$  mm preoperative to  $9.2 \pm 1.9$  mm one year postoperative [ $p < 0.001$ ]). Study limitations included small size, bias, and generalizability of results. The authors noted that future studies with longer-term follow-up would establish safety and efficacy.<sup>157</sup>

The AAOS (2019) guideline for the management of rotator cuff injuries did not specifically mention tuberopecty.<sup>35</sup>

Wei et al. (2023) conducted a retrospective cohort study for hip core decompression with Association Research Circulation Osseous (ARCO) stage I-II osteonecrosis of the femoral head (ONFH). A total of 1537 hips were included in the study. The core decompression failure rate was 52%. A scoring system was developed to assist surgeons with clinical decisions. Seven indicators of failure included male sex, aetiology (idiopathic or steroid-induced), seated occupation, haemoglobin level, disease duration, and combined necrosis angle. Limitations included surgeon-specific bias (single-center study) and the risk of patient recall bias of their history of ONFH. Further, the authors stated that a prospective cohort is needed to validate model accuracy.<sup>158</sup>

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# Policy Revision History/Information

|                              |  |  |
|------------------------------|--|--|
| Original Date: April 9, 2026 |  |  |
| Review History               |  |  |
|                              |  |  |

# Cohere Medical Policy – Omnibus Codes (Musculoskeletal Care and Pain Management)

Clinical Policy for Medical Necessity Review

CHP-319-1      Version 1

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# Procedure Codes (CPT/HCPCS)

## Service: Computer-Assisted Navigation (CAN) for Use with a Musculoskeletal Surgical Procedure

| Code  | Description                                                                                                                                                                                |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0054T | Computer-assisted musculoskeletal surgical navigational orthopedic procedure, with image-guidance based on fluoroscopic images (List separately in addition to code for primary procedure) |
| 0055T | Computer-assisted musculoskeletal surgical navigational orthopedic procedure, with image-guidance based on CT/MRI images (List separately in addition to code for primary procedure)       |

## Service: Extracorporeal Shock Wave Therapy (ESWT) for Musculoskeletal Conditions

| Code  | Description                                                                                                                                                                                   |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0101T | Extracorporeal shock wave involving musculoskeletal system, not otherwise specified                                                                                                           |
| 0102T | Extracorporeal shock wave performed by a physician, requiring anesthesia other than local, and involving the lateral humeral epicondyle                                                       |
| 0512T | Extracorporeal shock wave for integumentary wound healing, including topical application and dressing care; initial wound                                                                     |
| 0513T | Extracorporeal shock wave for integumentary wound healing, including topical application and dressing care; each additional wound (List separately in addition to code for primary procedure) |
| 0864T | Low-intensity extracorporeal shock wave therapy involving corpus cavernosum, low energy                                                                                                       |

## Service: Quantitative Sensory Testing (QST) and Interpretation

| Code  | Description                                                                                                                                                  |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0106T | Quantitative sensory testing (QST), testing and interpretation per extremity; using touch pressure stimuli to assess large diameter sensation                |
| 0107T | Quantitative sensory testing (QST), testing and interpretation per extremity; using vibration stimuli to assess large diameter fiber sensation               |
| 0108T | Quantitative sensory testing (QST), testing and interpretation per extremity; using cooling stimuli to assess small nerve fiber sensation and hyperalgesia   |
| 0109T | Quantitative sensory testing (QST), testing and interpretation per extremity; using heat-pain stimuli to assess small nerve fiber sensation and hyperalgesia |
| 0110T | Quantitative sensory testing (QST), testing and interpretation per extremity; using other stimuli to assess sensation                                        |

### Service: Percutaneous Sacral Augmentation (Sacroplasty)

| Code  | Description                                                                                                                                                                                                           |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0200T | Percutaneous sacral augmentation (sacroplasty), unilateral injection(s), including the use of a balloon or mechanical device, when used, 1 or more needles, includes imaging guidance and bone biopsy, when performed |
| 0201T | Percutaneous sacral augmentation (sacroplasty), bilateral injections, including the use of a balloon or mechanical device, when used, 2 or more needles, includes imaging guidance and bone biopsy, when performed    |

### Service: Posterior Vertebral Joint(s) Arthroplasty

| Code  | Description                                                                                                                                                                                                                                              |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0202T | Posterior vertebral joint(s) arthroplasty (eg, facet joint[s] replacement), including facetectomy, laminectomy, foraminotomy, and vertebral column fixation, injection of bone cement, when performed, including fluoroscopy, single level, lumbar spine |

### Service: Facet Joint Injections

| Code  | Description                                                                                                                                                                                                                                                               |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0213T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; single level                                                                                  |
| 0214T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; second level (List separately in addition to code for primary procedure)                      |
| 0215T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; third and any additional level(s) (List separately in addition to code for primary procedure) |
| 0216T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; single level                                                                                      |
| 0217T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; second level (List separately in addition to code for primary procedure)                          |
| 0218T | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; third and any additional level(s) (List separately in addition to code for primary procedure)     |

### Service: Placement of a Posterior Intrafacet Implant

| Code  | Description                                                                                                                                                              |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0219T | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; cervical |
| 0220T | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; thoracic |

|       |                                                                                                                                                                                                                                                               |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0221T | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; lumbar                                                                                        |
| 0222T | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; each additional vertebral segment (List separately in addition to code for primary procedure) |

### Service: Platelet-Rich Plasma (PRP) Injections

| Code  | Description                                                                                                       |
|-------|-------------------------------------------------------------------------------------------------------------------|
| 0232T | Injection(s), platelet rich plasma, any site, including image guidance, harvesting and preparation when performed |

### Service: Intramuscular Autologous Bone Marrow Cell Therapy

| Code  | Description                                                                                                                                                                                                                                                               |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0263T | Intramuscular autologous bone marrow cell therapy, with preparation of harvested cells, multiple injections, one leg, including ultrasound guidance, if performed; complete procedure including unilateral or bilateral bone marrow harvest                               |
| 0264T | Intramuscular autologous bone marrow cell therapy, with preparation of harvested cells, multiple injections, one leg, including ultrasound guidance, if performed; complete procedure excluding bone marrow harvest                                                       |
| 0265T | Intramuscular autologous bone marrow cell therapy, with preparation of harvested cells, multiple injections, one leg, including ultrasound guidance, if performed; unilateral or bilateral bone marrow harvest only for intramuscular autologous bone marrow cell therapy |

### Service: Percutaneous Laminotomy/Laminectomy for Decompression of Neural Elements

| Code  | Description                                                                                                                                                                                                                                                                                                                        |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0274T | Percutaneous laminotomy/laminectomy (interlaminar approach) for decompression of neural elements, (with or without ligamentous resection, discectomy, facetectomy and/or foraminotomy), any method, under indirect image guidance (eg, fluoroscopic, CT), single or multiple levels, unilateral or bilateral, cervical or thoracic |

### Service: Transcutaneous Electrical Modulation Pain Reprocessing (Scrambler Therapy)

| Code  | Description                                                                                                                               |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 0278T | Transcutaneous electrical modulation pain reprocessing (eg, scrambler therapy), each treatment session (includes placement of electrodes) |

### Service: Radiostereometric Analysis (RSA)

| Code | Description |
|------|-------------|
|------|-------------|



|       |                                                                                                                                                 |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 0347T | Placement of interstitial device(s) in bone for radiostereometric analysis (RSA)                                                                |
| 0348T | Radiologic examination, radiostereometric analysis (RSA); spine, (includes cervical, thoracic and lumbosacral, when performed)                  |
| 0349T | Radiologic examination, radiostereometric analysis (RSA); upper extremity(ies), (includes shoulder, elbow, and wrist, when performed)           |
| 0350T | Radiologic examination, radiostereometric analysis (RSA); lower extremity(ies), (includes hip, proximal femur, knee, and ankle, when performed) |

#### Service: Percutaneous Cryoablation

| Code  | Description                                                                                                                                |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 0440T | Ablation, percutaneous, cryoablation, includes imaging guidance; upper extremity distal/peripheral nerve                                   |
| 0441T | Ablation, percutaneous, cryoablation, includes imaging guidance; lower extremity distal/peripheral nerve                                   |
| 0442T | Ablation, percutaneous, cryoablation, includes imaging guidance; nerve plexus or other truncal nerve (eg, brachial plexus, pudendal nerve) |

#### Service: Autologous White Blood Cell Concentrate (Autologous Protein Solution) Injections

| Code  | Description                                                                                                                                                         |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0481T | Injection(s), autologous white blood cell concentrate (autologous protein solution), any site, including image guidance, harvesting and preparation, when performed |

#### Service: Autologous Adipose-Derived Regenerative Cell Therapy for Scleroderma

| Code  | Description                                                                                                                                                                                                                                                                                                               |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0489T | Autologous adipose-derived regenerative cell therapy for scleroderma in the hands; adipose tissue harvesting, isolation and preparation of harvested cells including incubation with cell dissociation enzymes, removal of non-viable cells and debris, determination of concentration and dilution of regenerative cells |
| 0490T | Autologous adipose-derived regenerative cell therapy for scleroderma in the hands; multiple injections in one or both hands                                                                                                                                                                                               |

#### Service: Insertion, Removal, and Reinsertion of Sinus Tarsi Implants

| Code  | Description                                    |
|-------|------------------------------------------------|
| 0335T | Insertion of sinus tarsi implant               |
| 0510T | Removal of sinus tarsi implant                 |
| 0511T | Removal and reinsertion of sinus tarsi implant |

### Service: Continuous Recording of Movement Disorder Symptoms

| Code  | Description                                                                                                                                                                                                                                                                                  |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0535T | Continuous recording of movement disorder symptoms, including bradykinesia, dyskinesia, and tremor for 6 days up to 10 days; includes set-up, patient training, configuration of monitor, data upload, analysis and initial report configuration, download review, interpretation and report |
| 0536T | Continuous recording of movement disorder symptoms, including bradykinesia, dyskinesia, and tremor for 6 days up to 10 days; set-up, patient training, configuration of monitor                                                                                                              |

### Service: Bone-Material Quality Testing by Microindentation of the Tibia

| Code  | Description                                                                                            |
|-------|--------------------------------------------------------------------------------------------------------|
| 0547T | Bone-material quality testing by microindentation(s) of the tibia(s), with results reported as a score |

### Service: Low-Level Laser Therapy (LLLT), Dynamic Phototonic, and Dynamic Thermokinetic Energies

| Code  | Description                                                                                                                                       |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 0552T | Low-level laser therapy, dynamic photonic and dynamic thermokinetic energies, provided by a physician or other qualified health care professional |

### Service: Bone Strength and Fracture Risk Using Finite Element Analyses

| Code  | Description                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0554T | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; retrieval and transmission of the scan data, assessment of bone strength and fracture risk and bone-mineral density, interpretation and report                                                                                                          |
| 0555T | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; retrieval and transmission of the scan data                                                                                                                                                                                                             |
| 0556T | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; assessment of bone strength and fracture risk and bone-mineral density                                                                                                                                                                                  |
| 0557T | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; interpretation and report                                                                                                                                                                                                                               |
| 0743T | Bone strength and fracture risk using finite element analysis of functional data and bone mineral density (BMD), with concurrent vertebral fracture assessment, utilizing data from a computed tomography scan, retrieval and transmission of the scan data, measurement of bone strength and BMD and classification of any vertebral fractures, with overall fracture-risk assessment, interpretation and report |
| 0749T | Bone strength and fracture-risk assessment using digital X-ray radiogrammetry-bone mineral density (DXR-BMD) analysis of bone mineral density (BMD) utilizing data from a                                                                                                                                                                                                                                         |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | digital X ray, retrieval and transmission of digital X-ray data, assessment of bone strength and fracture risk and BMD, interpretation and report;                                                                                                                                                                                                                                                                   |
| 0750T | Bone strength and fracture-risk assessment using digital X-ray radiogrammetry-bone mineral density (DXR-BMD) analysis of bone mineral density (BMD) utilizing data from a digital X ray, retrieval and transmission of digital X-ray data, assessment of bone strength and fracture risk and BMD, interpretation and report; with single-view digital X-ray examination of the hand taken for the purpose of DXR-BMD |

### Service: Autologous Cellular Implant for Knee Osteoarthritis

| Code  | Description                                                                                                                                                                                       |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0565T | Autologous cellular implant derived from adipose tissue for the treatment of osteoarthritis of the knees; tissue harvesting and cellular implant creation                                         |
| 0566T | Autologous cellular implant derived from adipose tissue for the treatment of osteoarthritis of the knees; injection of cellular implant into knee joint including ultrasound guidance, unilateral |

### Service: Osteotomy of the Humerus, with Insertion of an Externally Controlled Intramedullary Lengthening Device

| Code  | Description                                                                                                                                                                                                                                                                     |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0594T | Osteotomy, humerus, with insertion of an externally controlled intramedullary lengthening device, including intraoperative imaging, initial and subsequent alignment assessments, computations of adjustment schedules, and management of the intramedullary lengthening device |

### Service: Noncontact Real-Time Fluorescence Wound Imaging for Bacterial Presence

| Code  | Description                                                                                                                                                                                                                                                                   |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0598T | Real-time fluorescence wound imaging with clinical darkness, to identify location of bacterial wound pathogens and measure wound size, per session; first anatomic site (eg, lower extremity, right leg)                                                                      |
| 0599T | Real-time fluorescence wound imaging with clinical darkness, to identify location of bacterial wound pathogens and measure wound size, per session; each additional anatomic site (eg, upper extremity, left leg) (List separately in addition to code for primary procedure) |

### Service: Percutaneous Injection of Allogeneic Cellular and/or Tissue-Based Products

| Code  | Description                                                                                                                                                                                                                                              |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0627T | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; first level                                                                       |
| 0628T | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; each additional level (List separately in addition to code for primary procedure) |

|       |                                                                                                                                                                                                                                                |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0629T | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; first level                                                                       |
| 0630T | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; each additional level (List separately in addition to code for primary procedure) |

### Service: Noncontact Near-Infrared Spectroscopy

| Code  | Description                                                                                                                                                                                                                                                                                                                        |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0640T | Noncontact near-infrared spectroscopy (eg, for measurement of deoxyhemoglobin, oxyhemoglobin, and ratio of tissue oxygenation), other than for screening for peripheral arterial disease, image acquisition, interpretation, and report; first anatomic site                                                                       |
| 0859T | Noncontact near-infrared spectroscopy (eg, for measurement of deoxyhemoglobin, oxyhemoglobin, and ratio of tissue oxygenation), other than for screening for peripheral arterial disease, image acquisition, interpretation, and report; each additional anatomic site (List separately in addition to code for primary procedure) |
| 93998 | Unlisted noninvasive vascular diagnostic study                                                                                                                                                                                                                                                                                     |

### Service: Anterior Lumbar or Thoracolumbar Vertebral Body Tethering

| Code  | Description                                                                                                                                                          |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0656T | Anterior lumbar or thoracolumbar vertebral body tethering; up to 7 vertebral segments                                                                                |
| 0657T | Anterior lumbar or thoracolumbar vertebral body tethering; 8 or more vertebral segments                                                                              |
| 0790T | Revision (eg, augmentation, division of tether), replacement, or removal of thoracolumbar or lumbar vertebral body tethering, including thoracoscopy, when performed |

### Service: Artificial Intelligence (AI) and Computer-Based Analysis

| Code  | Description                                                                                                                                                                              |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0691T | Automated analysis of an existing computed tomography study for vertebral fracture(s), including assessment of bone density when performed, data preparation, interpretation, and report |
| 0693T | Comprehensive full body computer-based markerless 3D kinematic and kinetic motion analysis and report                                                                                    |

### Service: Bone-Substitute Material Injections

| Code  | Description                                                                                                                                                                                                                                                |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0707T | Injection(s), bone-substitute material (eg, calcium phosphate) into subchondral bone defect (ie, bone marrow lesion, bone bruise, stress injury, microtrabecular fracture), including imaging guidance and arthroscopic assistance for joint visualization |
| 0869T | Injection(s), bone-substitute material for bone and/or soft tissue hardware fixation augmentation, including intraoperative imaging guidance, when performed                                                                                               |

**Service: Autologous Adipose-Derived Regenerative Cell (ADRC) Therapy for Partial-Thickness Rotator Cuff Repair**

| Code  | Description                                                                                                                                                                                                                                                                        |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0717T | Autologous adipose-derived regenerative cell (ADRC) therapy for partial thickness rotator cuff tear; adipose tissue harvesting, isolation and preparation of harvested cells, including incubation with cell dissociation enzymes, filtration, washing, and concentration of ADRCs |
| 0718T | Autologous adipose-derived regenerative cell (ADRC) therapy for partial thickness rotator cuff tear; injection into supraspinatus tendon including ultrasound guidance, unilateral                                                                                                 |

**Service: Posterior Vertebral Joint Replacement (Lumbar Spine)**

| Code  | Description                                                                                                                                                           |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0719T | Posterior vertebral joint replacement, including bilateral facetectomy, laminectomy, and radical discectomy, including imaging guidance, lumbar spine, single segment |

**Service: Remote Real-Time, Motion Capture-Based Neurorehabilitative Therapy**

| Code  | Description                                                                                                                                                                                                                                         |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0733T | Remote real-time, motion capture-based neurorehabilitative therapy ordered by a physician or other qualified health care professional; supply and technical support, per 30 days                                                                    |
| 0734T | Remote real-time, motion capture-based neurorehabilitative therapy ordered by a physician or other qualified health care professional; treatment management services by a physician or other qualified health care professional, per calendar month |
| 0791T | Motor-cognitive, semi-immersive virtual reality-facilitated gait training, each 15 minutes (List separately in addition to code for primary procedure)                                                                                              |

**Service: Xenograft Implantation into the Articular Surface**

| Code  | Description                                       |
|-------|---------------------------------------------------|
| 0737T | Xenograft implantation into the articular surface |

**Service: Transcutaneous Magnetic Stimulation Using a Focused Low-Frequency Electromagnetic Pulse of a Peripheral Nerve**

| Code  | Description                                                                                                                                                                                                                                                                          |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0766T | Transcutaneous magnetic stimulation by focused low-frequency electromagnetic pulse, peripheral nerve, with identification and marking of the treatment location, including noninvasive electroneurographic localization (nerve conduction localization), when performed; first nerve |
| 0767T | Transcutaneous magnetic stimulation by focused low-frequency electromagnetic pulse, peripheral nerve, with identification and marking of the treatment location, including                                                                                                           |

|  |                                                                                                                                                                                 |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | noninvasive electroneurographic localization (nerve conduction localization), when performed; each additional nerve (List separately in addition to code for primary procedure) |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Service: Real-Time Pressure-Sensing Epidural Guidance System

| Code  | Description                                                                                                     |
|-------|-----------------------------------------------------------------------------------------------------------------|
| 0777T | Real-time pressure-sensing epidural guidance system (List separately in addition to code for primary procedure) |

### Service: Surface Mechanomyography (sMMG)

| Code  | Description                                                                                                                                                                               |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0778T | Surface mechanomyography (sMMG) with concurrent application of inertial measurement unit (IMU) sensors for measurement of multi-joint range of motion, posture, gait, and muscle function |

### Service: Transcutaneous Auricular Neurostimulation

| Code  | Description                                                                                               |
|-------|-----------------------------------------------------------------------------------------------------------|
| 0783T | Transcutaneous auricular neurostimulation, set-up, calibration, and patient education on use of equipment |

### Service: Spinal Neurostimulator Electrode Array with an Integrated Neurostimulator

| Code  | Description                                                                                                                                   |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 0784T | Insertion or replacement of percutaneous electrode array, spinal, with integrated neurostimulator, including imaging guidance, when performed |
| 0785T | Revision or removal of neurostimulator electrode array, spinal, with integrated neurostimulator                                               |

### Service: Percutaneous Injection of a Calcium-Based Biodegradable Osteoconductive Material (Proximal Femur)

| Code  | Description                                                                                                                            |
|-------|----------------------------------------------------------------------------------------------------------------------------------------|
| 0814T | Percutaneous injection of calcium-based biodegradable osteoconductive material, proximal femur, including imaging guidance, unilateral |

### Service: Ultrasound-Based Radiofrequency Echographic Multi-Spectrometry (REMS) Bone-Density Studies and Fracture-Risk Assessments

| Code | Description |
|------|-------------|
|------|-------------|

|       |                                                                                                                                                                 |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0815T | Ultrasound-based radiofrequency echographic multi-spectrometry (REMS), bone-density study and fracture-risk assessment, 1 or more sites, hips, pelvis, or spine |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Service: Intraoperative Therapeutic Electrical Stimulation (TES)

| Code  | Description                                                                                                                                                                                                                                                          |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0882T | Intraoperative therapeutic electrical stimulation of peripheral nerve to promote nerve regeneration, including lead placement and removal, upper extremity, minimum of 10 minutes; initial nerve (List separately in addition to code for primary procedure)         |
| 0883T | Intraoperative therapeutic electrical stimulation of peripheral nerve to promote nerve regeneration, including lead placement and removal, upper extremity, minimum of 10 minutes; each additional nerve (List separately in addition to code for primary procedure) |

### Service: Placement of a Bone Marrow Sampling Port

| Code  | Description                                                                       |
|-------|-----------------------------------------------------------------------------------|
| 0901T | Placement of bone marrow sampling port, including imaging guidance when performed |

### Service: Orthopedic Implant Movement Analysis

| Code  | Description                                                                                                                                                                                                                                                                        |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0946T | Orthopedic implant movement analysis using paired computed tomography (CT) examination of the target structure, including data acquisition, data preparation and transmission, interpretation and report (including CT scan of the joint or extremity performed with paired views) |

### Service: Thumb Carpometacarpal (CMC) Arthroplasty

| Code  | Description                                                                                                                                                   |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1003T | Arthroplasty, first carpometacarpal joint, with distal trapezial and proximal first metacarpal prosthetic replacement (eg, first carpometacarpal total joint) |

### Service: Percutaneous Decompression

| Code  | Description                                                                                                                                                                                                                                                                                                                               |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 62287 | Decompression, percutaneous, of nucleus pulposus of intervertebral disc, any method utilizing needle-based technique to remove disc material under fluoroscopic imaging or other form of indirect visualization, with discography and/or epidural injection(s) at the treated level(s), when performed, single or multiple levels, lumbar |
| 62330 | Decompression, percutaneous, with partial removal of the ligamentum flavum, including laminotomy for access, epidurography, and imaging guidance (ie, CT or fluoroscopy), bilateral; one interspace, lumbar                                                                                                                               |
| 62331 | Decompression, percutaneous, with partial removal of the ligamentum flavum, including laminotomy for access, epidurography, and imaging guidance (ie, CT or fluoroscopy),                                                                                                                                                                 |



|  |                                                                                                         |
|--|---------------------------------------------------------------------------------------------------------|
|  | bilateral; additional interspace(s), lumbar (List separately in addition to code for primary procedure) |
|--|---------------------------------------------------------------------------------------------------------|

### Service: Laminotomy (Hemilaminectomy) with Decompression of Nerve Root(s)

| Code  | Description                                                                                                                                                                                                                                                                                                                                                              |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 63032 | Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; with repair of annular defect by implantation of bone-anchored annular closure device, including all imaging guidance, 1 interspace, lumbar (List separately in addition to code for primary procedure) |

### Service: Radiofrequency Ablation (RFA) of the Sacroiliac Joint

| Code  | Description                                                                                                                    |
|-------|--------------------------------------------------------------------------------------------------------------------------------|
| 64624 | Destruction by neurolytic agent, genicular nerve branches including imaging guidance, when performed                           |
| 64625 | Radiofrequency ablation, nerves innervating the sacroiliac joint, with image guidance (ie, fluoroscopy or computed tomography) |

### Service: Percutaneous Implantation of a Neurostimulator Electrode Array (Sacral Nerve)

| Code  | Description                                                                                                                                  |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 64561 | Percutaneous implantation of neurostimulator electrode array; sacral nerve (transforaminal placement) including image guidance, if performed |

### Service: Unlisted Codes

| Code  | Description                                                      |
|-------|------------------------------------------------------------------|
| 20999 | Unlisted procedure, musculoskeletal system, general              |
| 22899 | Unlisted procedure, spine                                        |
| 23929 | Unlisted procedure, shoulder                                     |
| 27299 | Unlisted procedure, pelvis or hip joint                          |
| 27599 | Unlisted procedure, femur or knee                                |
| 28899 | Unlisted procedure, foot or toes                                 |
| 29999 | Unlisted procedure, arthroscopy                                  |
| 64999 | Unlisted procedure, nervous system                               |
| 97039 | Unlisted modality (specify type and time if constant attendance) |
| 97139 | Unlisted therapeutic procedure (specify)                         |



|       |                                                                |
|-------|----------------------------------------------------------------|
| 97799 | Unlisted physical medicine/rehabilitation service or procedure |
|-------|----------------------------------------------------------------|

# Important Notices

## Notices & Disclaimers:

**GUIDELINES ARE SOLELY FOR COHERE'S USE IN PERFORMING MEDICAL NECESSITY REVIEWS AND ARE NOT INTENDED TO INFORM OR ALTER CLINICAL DECISION-MAKING OF END USERS.**

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# Overview

This policy applies to all lines of business, including Medicare Advantage plans.

## Documentation Requirements

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information is necessary at the time of submission to determine medical necessity. Documentation should include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a recent clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously, or within the past 3 months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request;
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed;
  - How the results will impact patient management or treatment decisions.
- Duplicate exams or requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed and/or treated with a single study or procedure.

## Category III Codes

Cohere Health considers the codes listed in this policy to be clinically unproven and not medically necessary, given inconclusive evidence of their effectiveness. In specific instances, a procedure may be covered when there is evidence-based guidance addressing the indications associated with a category III code. This includes, but is not limited to:

- Centers for Medicare & Medicaid (CMS) Services National or Local Coverage Determinations (NCDs or LCDs);
- State-specific guidance;
- Clinical policy authored by Cohere Health; and
- Third-party criteria as delegated by the Health Plan.

The American Medical Association (AMA) is responsible for developing Current Procedural Terminology (CPT) Category III codes to track the utilization of emerging technologies, services, and procedures. The Category III CPT code description does not establish a service or procedure as safe, effective, or applicable to the clinical practice of medicine.<sup>1</sup> The codes apply to a procedure or service that is (or has been) performed on a patient and any of the following<sup>2</sup>:

- There is support by at least one CPT or Health Care Professionals Advisory Committee (HCPAC) member that represents providers who would use the procedure or service;
- The potential or actual clinical efficacy is supported by evidence-based, peer-reviewed literature;
- There is at least one approved study protocol by an Institutional Review Board (IRB) for the procedure or service; a current trial in the United States (ongoing or current) that outlines efficacy; or other evidence of clinical utilization.

Section 1862(a)(1)(A) of the Social Security Act (SSA) is the statutory basis for denying payment for types of care, items, services, and procedures, not excluded by any other statutory clause, while meeting all technical requirements for coverage, that are determined to be any of the following<sup>1</sup>:

1. Not generally accepted by the medical community as safe and effective in the setting and for the condition for which it is used;
2. Not proven safe and effective based on peer review or scientific literature;
3. Experimental;
4. Not medically necessary for a particular patient;
5. Furnished at a level, duration, or frequency that is not medically appropriate;
6. Not furnished in accordance with accepted standards of medical practice; or
7. Not furnished in a setting appropriate to the patient's medical needs and condition.

Items and services must be established as safe and effective to be considered medically necessary. That is, the items and services must be<sup>1</sup>:

1. Consistent with the symptoms of diagnosis of the illness or injury under treatment;
2. Necessary for, and consistent with, generally accepted professional medical standards of care (e.g., not experimental);
3. Not furnished primarily for the convenience of the patient, the provider, or supplier; and
4. Furnished at the most appropriate level of care that can be provided safely and effectively to the patient.

Medical devices that are not approved for marketing by the US Food & Drug Administration (FDA) are considered investigational and are not considered reasonable and necessary under Section 1862(a)(1)(A) of the SSA. Medicare payment, therefore, may not be made for procedures performed using devices that have not been approved for marketing by the FDA unless performed within the context of a clinical trial qualifying under the CMS NCD for Routine Costs in Clinical Trials (310.1) or in an approved FDA Investigational Device Exemption (IDE) trial.<sup>1</sup>

Applicable policies that consider a CPT Category III code medically necessary are noted in the coding table below. Due to the frequent updates from the AMA and CMS, the codes listed in this policy may not be all-inclusive. Codes that are deleted and not effective at the designated time of service may be ineligible for reimbursement.

## Experimental and Investigational Codes

Cohere Health considers experimental and investigational codes not covered when there is insufficient evidence of safety or efficacy. Government approval does not imply that a service is medically appropriate or that it has been researched and cited in the medical literature for the proposed condition or diagnosis. The codes may also be used for conditions that do not align with standard medical practice. Examples include biologic products, drugs, medical devices, procedures, supplies, technologies, transplants, and treatments. The following are used to determine if a service is experimental and investigational:

- US Food & Drug Administration (FDA) approval for proposed use, including application status, if a new drug or device;
- Strength of evidence-based peer-reviewed literature, including the need for additional clinical trials or studies to determine safety and efficacy;
- Technology assessment that demonstrates improved health outcomes, including outside an investigational setting, and proves superior efficacy compared to any established alternative; or
- Applicable federal or state regulations.

## Unlisted Codes

An unlisted code refers to a service, procedure, or device that lacks an assigned CPT or HCPCS code. The code may be covered or not covered. The code description usually begins with "unlisted," ends in "99," and requires prior authorization. An unlisted code is used when another code does not describe the service, procedure, or item. An unlisted code includes any of the following:

- Non-Specified;
- Not Elsewhere Specified (NEC);

- Not Listed;
- Not Otherwise Classified (NOC);
- Not Otherwise Specified (NOS);
- Unclassified;
- Unlisted; or
- Unspecified.

# Service: Computer-Assisted Navigation (CAN) for Use with a Musculoskeletal Surgical Procedure

| CPT/HCPCS Code | Code Description                                                                                                                                                                           | Conclusion  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0054T          | Computer-assisted musculoskeletal surgical navigational orthopedic procedure, with image-guidance based on fluoroscopic images (List separately in addition to code for primary procedure) | Not Covered |
| 0055T          | Computer-assisted musculoskeletal surgical navigational orthopedic procedure, with image-guidance based on CT/MRI images (List separately in addition to code for primary procedure)       | Not Covered |

- **Computer-assisted navigation (CAN) for use with a musculoskeletal surgical procedure** is not considered appropriate as it is clinically unproven and not medically necessary.
  - Not covered service.

Kim et al. (2018) conducted a randomized controlled trial (RCT) that compared survival and complication rates among patients who underwent same-day bilateral total knee arthroplasty (TKA). Conventional TKA was performed on one knee while the other knee was operated on using CAN. The trial included 282 patients (564 knees); 22% underwent arthroscopic debridement in one or both knees. CAN showed no efficacy in pain relief, improved function, or survival. Research lacked high-quality evidence that supported the use of CAN in orthopedic surgical procedures. Long-term results did not improve with CAN compared with patients who received conventional TKA. Additional research should focus on pediatric patients, osteolysis, mechanical demands, prosthetic failure, and TKA revision.<sup>3</sup>

Several RCTs examined the use of CAN in total hip arthroplasty (THA). Lourens et al. (2025) reported on a large study conducted by the Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR) on PROMs in patients who underwent conventional THA (n=13,400) versus THA with CAN (n=749). Patient satisfaction was slightly higher in the navigation group than in the conventional group (rate ratio 1.03, 95% CI 1.01 to 1.06,  $P = 0.02$ ). At 4-year follow-up, Oxford Hip Score (OHS) and early EuroQol-visual analog scales (EQ-VASs) between conventional and navigation groups were not statistically significant. The authors noted that CAN is useful, but future research is needed on long-term outcomes.<sup>4</sup>

Zhou et al. (2024) conducted a prospective, multicenter RCT comparing CAN versus conventional THA for acetabular prosthesis placement accuracy. A total of 113 patients were included in the study: 55 in the control (conventional THA) group and 58 in the experimental (navigation) group. The average operative time was shorter with conventional THA ( $92.6 \pm 42.1$  min) than with CAN ( $112.5 \pm 31.3$  min). Dislocation rates did not differ significantly between the control (1.6%) and experimental group (0%).<sup>5</sup>

The American Academy of Orthopaedic Surgeons (AAOS) (2023) published a clinical practice guideline for the surgical management of osteoarthritis of the knee.<sup>6,7</sup> Despite the advantages of surgical navigation, the AAOS stated that evidence is lacking on outcomes, specifically pain and function.

# Service: Extracorporeal Shock Wave Therapy (ESWT) for Musculoskeletal Conditions

| CPT/HCPCS Code | Code Description                                                                                                                                                                              | Conclusion  |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0101T          | Extracorporeal shock wave involving musculoskeletal system, not otherwise specified                                                                                                           | Not Covered |
| 0102T          | Extracorporeal shock wave performed by a physician, requiring anesthesia other than local, and involving the lateral humeral epicondyle                                                       | Not Covered |
| 0512T          | Extracorporeal shock wave for integumentary wound healing, including topical application and dressing care; initial wound                                                                     | Not Covered |
| 0513T          | Extracorporeal shock wave for integumentary wound healing, including topical application and dressing care; each additional wound (List separately in addition to code for primary procedure) | Not Covered |
| 0864T          | Low-intensity extracorporeal shock wave therapy involving corpus cavernosum, low energy                                                                                                       | Not Covered |

- **Extracorporeal shock wave therapy (ESWT) for musculoskeletal conditions** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

The medical literature is unclear on the efficacy of ESWT for wound healing of diabetic foot ulcers (DFUs). Wu et al. (2024) conducted a systematic review and meta-analysis of 10 randomized controlled trials (RCTs) with 754 patients. Despite demonstrated safety and efficacy, further research is needed to elucidate the mechanisms underlying its healing effects in DFUs. These are driven by the reversal of chronic, non-healing wounds caused by diabetes-related hyperglycemia, vasculopathy, and neuropathy.<sup>8</sup>

Other uses of ESWT for musculoskeletal conditions were not fully supported by the medical literature. Tung et al. (2025) conducted a systematic review and meta-analysis comparing ESWT with conservative treatments (e.g., orthotics, corticosteroid injections) for plantar fasciitis. A total of 15 RCTs with 1123 patients demonstrated improvement in VAS and Foot Function Index (FFI). Orthotics demonstrated more improvement than ESWT.<sup>9</sup> Xue et al. (2024) analyzed 17 RCTs (1131 patients) on the efficacy of ESWT versus conservative treatment for rotator cuff function, external rotation, pain, and range of motion. While ESWT demonstrated improvement across all indicators, the quality of evidence and small sample sizes were noted as limitations. Research was insufficient to support ESWT.<sup>10</sup>

# Service: Quantitative Sensory Testing (QST) and Interpretation

| CPT/HCPCS Code | Code Description                                                                                                                                             | Conclusion  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0106T          | Quantitative sensory testing (QST), testing and interpretation per extremity; using touch pressure stimuli to assess large diameter sensation                | Not Covered |
| 0107T          | Quantitative sensory testing (QST), testing and interpretation per extremity; using vibration stimuli to assess large diameter fiber sensation               | Not Covered |
| 0108T          | Quantitative sensory testing (QST), testing and interpretation per extremity; using cooling stimuli to assess small nerve fiber sensation and hyperalgesia   | Not Covered |
| 0109T          | Quantitative sensory testing (QST), testing and interpretation per extremity; using heat-pain stimuli to assess small nerve fiber sensation and hyperalgesia | Not Covered |
| 0110T          | Quantitative sensory testing (QST), testing and interpretation per extremity; using other stimuli to assess sensation                                        | Not Covered |

- **Quantitative sensory testing (QST) and interpretation** are not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.
  - Not covered service.

Rhee et al. (2024) conducted a cross-sectional study of 3022 twins (96% female) to study the correlation of QST and inflammatory biomarkers in chronic pain syndromes, including chronic widespread pain, dry eye disease, and irritable bowel syndrome (IBS). Results showed no difference among the 10 QST modalities.<sup>11</sup> Paredes et al. (2022) conducted a systematic review of QST for patients with chronic postoperative pain following unilateral total joint arthroplasty. The review included 18 studies (1,869 patients), with total knee arthroplasty (TKA) being the most prevalent procedure performed in 16 studies. Pressure pain threshold correlated with postoperative pain. The efficacy and predictive role of preoperative QST were uncertain due to inconsistent medical evidence in the literature.<sup>12</sup>

Martland et al. (2021) performed a systematic review of literature on QST and cancer pain. Eighteen studies (789 patients) focused on tumor-related pain, chemotherapy-induced peripheral neuropathy (CIPN), sensory abnormalities, and thresholds for abnormal mechanical detection and pin-prick. Sensory abnormalities in cool- and warm-thermal detection thresholds were reported in 50% of the studies. Forty-four percent of the studies reported abnormal mechanical detection thresholds when von Frey filaments were used. Abnormal pin-prick thresholds were noted in 39% of studies. Future research was recommended on the pathophysiological mechanisms of cancer pain to direct analgesic treatment.<sup>13</sup>

In 2025, the American Academy of Neurology (AAN) Therapeutics and Technology Assessment Subcommittee reaffirmed its 2003 report on QST. The AAN did not support the use of QST for diagnosing pathology due to challenges with test methodology and reproducibility, as well as psychological factors that could limit objectivity. The European Academy of Neurology (EAN) and the European Pain Federation (EPF) provided a weak endorsement for neuropathic pain.<sup>14,15</sup>



## Service: Percutaneous Sacral Augmentation (Sacroplasty)

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                      | Conclusion  |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0200T          | Percutaneous sacral augmentation (sacroplasty), unilateral injection(s), including the use of a balloon or mechanical device, when used, 1 or more needles, includes imaging guidance and bone biopsy, when performed | Not Covered |
| 0201T          | Percutaneous sacral augmentation (sacroplasty), bilateral injections, including the use of a balloon or mechanical device, when used, 2 or more needles, includes imaging guidance and bone biopsy, when performed    | Not Covered |

- **Percutaneous sacral augmentation (sacroplasty)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Maldinez et al. (2025) conducted a retrospective analysis of 49 patients that determined the efficacy of percutaneous sacroplasty for insufficiency fractures or metastatic lesions. The procedure demonstrated positive clinical outcomes (decreased pain and increased mobility, quality of life, and patient satisfaction). However, the authors noted the lack of long-term outcomes data that are needed to adequately determine the predictive factors of sacroplasty.<sup>16</sup>

Chandra et al. (2019) conducted a systematic review and meta-analysis of 18 studies (849 patients) that included patients who underwent percutaneous sacroplasty for osteoporotic and malignant sacral fractures. Low complication rates and overall clinical success were observed; however, the authors noted that further research is needed to compare sacroplasty with conservative treatment.<sup>17</sup> A retrospective review by Gupta et al. (2014) included 53 patients (83% female) who underwent percutaneous sacroplasty between January 2004 and September 2013. Significant decreases were noted in VAS, Functional Mobility Scale (FMS), and Analgesic Scale (AS) scores. Future randomized controlled trials (RCTs) should be conducted on the use of analgesics and conservative treatment, with or without surgical fixation.<sup>18</sup>

## Service: Posterior Vertebral Joint(s) Arthroplasty

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                         | Conclusion  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0202T          | Posterior vertebral joint(s) arthroplasty (eg, facet joint[s] replacement), including facetectomy, laminectomy, foraminotomy, and vertebral column fixation, injection of bone cement, when performed, including fluoroscopy, single level, lumbar spine | Not Covered |

- **Posterior vertebral joint(s) arthroplasty** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

- Not covered service.

Shaffer et al. (2024) compared outcomes of lumbar facet arthroplasty versus spinal fusion in 299 patients with degenerative spondylolisthesis and stenosis. At baseline and postoperatively, patient-reported outcomes (PROMs) were measured (e.g., Oswestry Disability Index [ODI], VAS, and Zurich Claudication Questionnaire [ZCQ]). Radiographs were also taken at 12 and 24 months to assess the range of motion. The main limitation of the study was the limited postoperative follow-up at 6 and 12 months (80% and 69%, respectively). Future studies were recommended to include long-term outcome data to establish related complications.<sup>19</sup>

Two studies examined the Total Posterior Spine system (TOPSTM) randomized controlled trial (RCT) conducted by the US Food & Drug Administration (FDA). Limitations included a lack of long-term data beyond 5 years to assess system durability. The risk of pedicle screw placement was also noted, as well as device breakage or loosening. Future research should be focused on the higher incidence of serious adverse events.<sup>20,21</sup>

## Service: Facet Joint Injections

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                          | Conclusion  |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0213T          | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; single level                                                                                  | Not Covered |
| 0214T          | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; second level (List separately in addition to code for primary procedure)                      | Not Covered |
| 0215T          | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; third and any additional level(s) (List separately in addition to code for primary procedure) | Not Covered |
| 0216T          | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; single level                                                                                      | Not Covered |
| 0217T          | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; second level (List separately in addition to code for primary procedure)                          | Not Covered |
| 0218T          | Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; third and any additional level(s) (List separately in addition to code for primary procedure)     | Not Covered |

- **Facet joint injections** are not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

- Not covered service.

Manchikanti et al. (2015) conducted a systematic review that assessed the clinical efficacy of therapeutic facet joint interventions in individuals with chronic spinal pain. A literature review from 1966 through March 2015 yielded 21 randomized controlled trials (RCTs) that met inclusion criteria; a total of five observational studies were evaluated. Long-term efficacy is supported by Level II evidence of radiofrequency ablation (RFA) neurotomy and facet joint nerve blocks for the lumbar, cervical, and lumbar spine. Intraarticular injections had Level III evidence (lumbar) and Level IV evidence (cervical and thoracic). The primary outcome measure was short-term (6 months or less) and long-term (6 months or more) pain relief. Secondary outcome measures included improvement in functional status, psychological status, ability to return to work, and reduced opioid use.<sup>22</sup>

The American Society of Regional Anesthesia and Pain Medicine (ASRM) does not recommend the use of therapeutic intraarticular injections for cervical spine (facet) joint pain. A high technical failure rate was noted for intra-articular injections. In addition, medial branch blocks (MBB) were noted as more clinically useful for RFA

outcomes versus intra-articular injections.<sup>23</sup> The ASRM published a guideline on interventions for lumbar facet joint pain. Prior to RFA, MBB was recommended. Intra-articular injections were recommended for diagnostic and therapeutic purposes in certain patients. Therapeutic MBB and intra-articular injections were not recommended in most clinical scenarios (e.g., prolonged relief from prognostic blocks, patient contraindication to RFA).<sup>24</sup>

The American Society of Interventional Pain Physicians (ASIPP) published a guideline on Facet Joint Interventions in the Management of Chronic Spinal Pain. The evidence for the use of lumbar, cervical, and thoracic intra-articular facet joint injections was weak.<sup>25</sup>

The North American Spine Society (NASS) published guidelines on low back pain . Evidence was insufficient to make a recommendation for the use of steroid injections for facet-related pain.<sup>26</sup> In addition, NASS published guidelines for the diagnosis and treatment of degenerative lumbar spondylolisthesis, and noted that the evidence was insufficient to support the use of injections for degenerative lumbar spondylolisthesis.<sup>27</sup> The North American Spine Society (NASS) noted that facet joint injections may be indicated in certain cases.<sup>28</sup>

# Service: Placement of a Posterior Intrafacet Implant

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                              | Conclusion  |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0219T          | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; cervical                                                                                      | Not Covered |
| 0220T          | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; thoracic                                                                                      | Not Covered |
| 0221T          | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; lumbar                                                                                        | Not Covered |
| 0222T          | Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; each additional vertebral segment (List separately in addition to code for primary procedure) | Not Covered |

- **Placement of a posterior intrafacet implant** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

- This is a not covered service.

Koshimizu et al. (2024) conducted a multicenter study of implant-related complications following spinal fusion in 3447 patients (mean age: 63.1 ± 15.4 years; 1655 men and 1792 women). Degenerative spinal disease was the most documented preoperative diagnosis. The most cited complication was screw malposition (43%), which was the second leading cause of reoperation (72%). Loose screws or screws that pulled out from the implant were the primary cause of reoperation (82%). Fractures of a rod or screw were also a cause for reoperation (61%). Limitations of the study included a lack of documentation regarding comorbidity, surgeon experience, and metal composition of the implant.<sup>29</sup>

Two studies conducted by the US Food & Drug Administration (FDA) examined a randomized controlled trial (RCT) on the Total Posterior Spine system (TOPSTM). Limitations included a lack of long-term data beyond 5 years, which would aid in assessing the durability of the system. The risk of pedicle screw placement was also a noted concern, as well as device breakage or loosening. Future research should be aimed at the higher incidence of serious adverse events.<sup>21,30</sup>

Dusad et al. (2018) conducted a retrospective study of 82 patients on transarticular screw fixation without Gallie supplementation in the management of mobile atlantoaxial instability. Significant improvement of clinical parameters was noted (i.e., VAS, ODI, and modified Japanese Orthopaedic Association [mJOA] guidelines). Limitations of the study included potential bias and the lack of controls.<sup>31</sup>

## Service: Platelet-Rich Plasma (PRP) Injections

| CPT/HCPCS Code | Code Description                                                                                                  | Conclusion  |
|----------------|-------------------------------------------------------------------------------------------------------------------|-------------|
| 0232T          | Injection(s), platelet rich plasma, any site, including image guidance, harvesting and preparation when performed | Not Covered |

- **Platelet-rich plasma (PRP) injections** are not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

○ Not covered service.

Herber et al. (2024) conducted a systematic review and meta-analysis of the efficacy of conservative treatment versus PRP injections for plantar fasciitis. Twenty-one studies (1356 patients) were included. No difference in improved FFI was demonstrated among treatments, including PRP, corticosteroid injections, meridian trigger points, ESWT, and dextrose prolotherapy. The authors noted that the randomized controlled trials (RCTs) were of low quality and exhibited substantial heterogeneity.<sup>32</sup>

Qiao et al. (2023) examined the efficacy and safety of PRP, corticosteroid injections, and hyaluronic acid for the treatment of knee osteoarthritis. Thirty-five RCTs (3104 patients) were included with a treatment duration of 3 to 24 months; outcomes data were reported at 3, 6, 9, and 12 months. Despite improved pain relief, the literature does not provide substantial evidence on the need for adverse events.<sup>33</sup>

Bae et al. (2021) conducted a systematic review and meta-analysis of treatments for chronic musculoskeletal pain. This included injections (PRP injections, steroids, saline), ESWT, and exercise. Pain scores did not differ between patients who received prolotherapy versus PRP or steroid injections. The authors noted limited evidence and poor methodology.<sup>34</sup>

Multiple medical associations have published guidance on PRPs for various conditions. The American Academy of Orthopaedic Surgeons (AAOS) recommended against PRP injections for the management of rotator cuff injuries, osteoarthritis of the knee, and glenohumeral joint osteoarthritis.<sup>35-37</sup> The American Association of Hip and Knee Surgeons (AAHKS), The Hip Society (THS), The Knee Society (TKS), and the American College of Rheumatology/Arthritis Foundation recommended against PRP injections for hip and knee arthritis based on a lack of efficacy, high cost, and safety concerns.<sup>38,39</sup> The American Society of Interventional Pain Physicians (ASIPP) and the National Institute for Health and Care Excellence (NICE) also recommended against the use of PRP injections.<sup>40,41</sup>

# Service: Intramuscular Autologous Bone Marrow Cell Therapy

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                          | Conclusion  |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0263T          | Intramuscular autologous bone marrow cell therapy, with preparation of harvested cells, multiple injections, one leg, including ultrasound guidance, if performed; complete procedure including unilateral or bilateral bone marrow harvest                               | Not Covered |
| 0264T          | Intramuscular autologous bone marrow cell therapy, with preparation of harvested cells, multiple injections, one leg, including ultrasound guidance, if performed; complete procedure excluding bone marrow harvest                                                       | Not Covered |
| 0265T          | Intramuscular autologous bone marrow cell therapy, with preparation of harvested cells, multiple injections, one leg, including ultrasound guidance, if performed; unilateral or bilateral bone marrow harvest only for intramuscular autologous bone marrow cell therapy | Not Covered |

- **Intramuscular autologous bone marrow cell therapy** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Yanke et al. (2024) conducted a prospective, randomized, double-blind clinical trial on the efficacy of autologous bone marrow aspirate concentrate (BMAC) in 83 patients with early knee osteoarthritis during arthroscopic meniscectomy. A follow-up at 1 year postoperatively found no significant improvement between the group that received BMAC therapy versus the control group that did not. Similar results were noted between the two groups at the 2-year follow-up. Due to the limited differences, additional research was needed to establish the efficacy of BMAC therapy.<sup>42</sup>

Lee et al. (2024) performed a meta-analysis to evaluate the efficacy of autologous bone marrow cell therapy for pain relief in patients with knee osteoarthritis. Thirty-one studies (1406 study participants) were included. Overall, autologous-cultured adipose-derived mesenchymal stem cells (MSCs) provided a notable reduction of pain at 3-month follow-up. Application methods were cited as a focus for future studies, specifically with dose-response relationships.<sup>43</sup>

Centeno et al. (2024) conducted a randomized controlled trial (RCT) that investigated the efficacy of autologous BMAC in patients with early knee osteoarthritis. The authors compared PROMs over a 3-month timeframe. Improved outcomes were also reported at the 2-year follow-up. Research was needed on the use of BMC and other autologous bone marrow cell therapies.<sup>44</sup>

The American Academy of Orthopaedic Surgeons (AAOS) (2020) did not make a recommendation in its position statement for the Use of Emerging Biologic Treatment.<sup>45</sup> In the guideline for the management of glenohumeral joint osteoarthritis, the AAOS (2020) did not support the use of biologics.<sup>37</sup>



## Service: Percutaneous Laminotomy/Laminectomy for Decompression of Neural Elements

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                                                                   | Conclusion  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0274T          | Percutaneous laminotomy/laminectomy (interlaminar approach) for decompression of neural elements, (with or without ligamentous resection, discectomy, facetectomy and/or foraminotomy), any method, under indirect image guidance (eg, fluoroscopic, CT), single or multiple levels, unilateral or bilateral; cervical or thoracic | Not Covered |

- **Percutaneous laminotomy/laminectomy (interlaminar approach) for decompression of neural elements** is not considered appropriate, as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

○ Not covered service.

Karlsson et al. (2024) conducted a randomized controlled trial (RCT) to compare 5-year outcomes after decompression alone and decompression with fusion for the treatment of lumbar spinal stenosis. The 5-year ODI scores were similar across treatments, and the EuroQol five-dimension questionnaire was higher with decompression alone than with decompression and fusion. These results indicated that adding fusion to decompression surgeries may not improve patient outcomes 5 years post-surgery, findings consistent with those reported at the 2-year time point. The authors concluded that decompression alone is preferred for spinal stenosis surgery.<sup>46</sup>

Thomé et al. (2018) conducted an RCT involving 554 patients to evaluate annular closure during lumbar microdiscectomy to prevent reherniation. Annular closure with a bone-anchored implant lowered the risk of symptomatic recurrence and reoperation in patients at high-risk of herniation recurrence after lumbar microdiscectomy. Additional studies should be conducted to determine outcomes beyond 2 years with a bone-anchored annular closure device. The results of the current study may not have been generalized to all patients undergoing lumbar discectomy.<sup>47</sup>

In a retrospective database study of 7315 patients, Huynh et al. (2017) reviewed spinal decompression and discectomy procedures in children. They noted that conditions requiring such procedures, including spinal stenosis/spondylosis and disc herniation, are seen less often in children than in adults. The authors stated that children with these conditions are often less responsive to conservative management strategies (i.e., exercise, physical therapy, pharmacological pain control) when compared to adults. The mean patient age was 12.7 years for pediatric spondylolysis/spinal stenosis and 18 years for pediatric disc herniation. For patients with pediatric spondylolysis/spinal stenosis, complication rates were higher after decompression (18.1%) than after discectomy (5.3%) procedures. Length of hospital stay was also longer in pediatric spondylolysis/spinal stenosis patients treated with decompression compared to discectomy (5 vs. 1.7 days).<sup>48</sup>



## Service: Transcutaneous Electrical Modulation Pain Reprocessing (Scrambler Therapy)

| CPT/HCPCS Code | Code Description                                                                                                                          | Conclusion  |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0278T          | Transcutaneous electrical modulation pain reprocessing (eg, scrambler therapy), each treatment session (includes placement of electrodes) | Not Covered |

- **Transcutaneous electrical modulation pain reprocessing (scrambler therapy)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Jin et al. (2022) conducted a meta-analysis of 7 randomized controlled trials (RCTs) that involved 287 patients that assessed the efficacy of scrambler therapy for chronic pain. Results showed a decrease in short-term pain. A major limitation of the study was the lack of standardization in the collection of patient diagnoses. The authors noted that larger study sizes were needed.<sup>49</sup>

Kashyap et al. (2020) performed an RCT on the use of scrambler therapy for head, neck, and thoracic cancer pain. Eighty patients were divided into two groups that received pain management drugs, and 40 patients also received scrambler therapy. Pain was monitored daily, and patients in both groups reported a decrease in cancer-related pain. Due to the short follow-up period for patients, additional research is needed to determine the long-term effects of scrambler therapy.<sup>50</sup>

Nayback-Beebe et al. (2020) conducted an RCT on the efficacy and safety of scrambler therapy for military members with chronic pain for at least 3 months. Low back pain was reported in 97% of patients. The authors found that scrambler therapy did not demonstrate a significant improvement in chronic pain. Medication use and quality of life (mental and physical health) were also similar in both groups and demonstrated no substantial differences.<sup>51</sup>

## Service: Radiostereometric Analysis (RSA)

| CPT/HCPCS Code | Code Description                                                                                                                                | Conclusion  |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0347T          | Placement of interstitial device(s) in bone for radiostereometric analysis (RSA)                                                                | Not Covered |
| 0348T          | Radiologic examination, radiostereometric analysis (RSA); spine, (includes cervical, thoracic and lumbosacral, when performed)                  | Not Covered |
| 0349T          | Radiologic examination, radiostereometric analysis (RSA); upper extremity(ies), (includes shoulder, elbow, and wrist, when performed)           | Not Covered |
| 0350T          | Radiologic examination, radiostereometric analysis (RSA); lower extremity(ies), (includes hip, proximal femur, knee, and ankle, when performed) | Not Covered |

- **Radiostereometric analysis (RSA)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Ten Brinke et al. (2017) analyzed 23 studies on RSA in upper-limb arthroplasty. While RSA demonstrated efficacy for measuring early migration of orthopedic implants, rotation-precision outcomes were poor. Long-term clinical outcomes were needed, especially those with cohort postoperative follow-up periods of 5 and 10-years. There were limited studies with large study sizes of patients who underwent shoulder, elbow, wrist, and hand arthroplasty.<sup>52</sup>

Humadi et al. (2017) conducted a systematic review on the accuracy of RSA for cervical and lumbar spine assessment. Positive clinical outcomes included segmental fusion, inducible displacement, and increased range of motion. Limitations of RSA included the lack of a universally accepted figure (i.e., degree of rotation or millimeter of translation) that confirmed fusion success. The accuracy of RSA was variable, particularly in setup and assessment. Disadvantages of RSA include being an invasive procedure and specialized clinician training. Further, a reported concern in patients with poor bone quality was the migration of RSA beads into other sites such as soft tissue, blood vessels, and the spinal canal.<sup>53</sup>

The International Radiostereometry Society (2024) published guidelines that supported RSA and computed tomography (CT)-RSA for migration measurements.<sup>54</sup>

## Service: Percutaneous Cryoablation

| CPT/HCPCS Code | Code Description                                                                                                                           | Conclusion  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0440T          | Ablation, percutaneous, cryoablation, includes imaging guidance; upper extremity distal/peripheral nerve                                   | Not Covered |
| 0441T          | Ablation, percutaneous, cryoablation, includes imaging guidance; lower extremity distal/peripheral nerve                                   | Not Covered |
| 0442T          | Ablation, percutaneous, cryoablation, includes imaging guidance; nerve plexus or other truncal nerve (eg, brachial plexus, pudendal nerve) | Not Covered |

- **Percutaneous cryoablation** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Nygaard et al. (2025) conducted a double-blind, randomized, sham-controlled trial of chronic pain associated with knee osteoarthritis. A significant improvement in pain was not demonstrated among the 87 patients who received a sham procedure or cryoneurolysis (0.49; 95% CI, -0.3 to 1.2;  $P = 0.198$ ). However, at 6-month follow-up, the cryoneurolysis group showed a notable reduction in pain (1.1; 95% CI, 0.3 to 1.9;  $P = 0.009$ ). To establish efficacy, further studies with larger sample sizes and long-term follow-up were needed.<sup>55</sup>

Radnovich et al. (2017) conducted a multicenter, randomized, double-blind, sham-controlled trial evaluating the effect of cryoneurolysis on pain related to knee osteoarthritis. Study participants were placed in an active treatment group (n=121) or a sham treatment group (n=59). Repeat cryoneurolysis was typically needed and cited as a disadvantage of treatment. The authors noted limited evidence that compared cryoneurolysis with standard pain management therapies.<sup>56</sup>

Dasa et al. (2016) analyzed patients who underwent total knee arthroplasty (TKA) and received cryoneurolysis for pain relief. Half of the 100 study participants received cryoneurolysis, and half did not. There were no significant changes in either group. Research was insufficient to establish efficacy.<sup>57</sup>

## Service: Autologous White Blood Cell Concentrate (Autologous Protein Solution) Injections

| CPT/HCPCS Code | Code Description                                                                                                                                                    | Conclusion  |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0481T          | Injection(s), autologous white blood cell concentrate (autologous protein solution), any site, including image guidance, harvesting and preparation, when performed | Not Covered |

- **Autologous white blood cell concentrate (autologous protein solution) injections** are not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

- Not covered service.

Sinnott et al. (2017) reviewed the literature on autologous blood injections (ABIs) for Achilles tendinopathy. Despite conservative treatment, 45% of patients required surgical intervention. While research found that ABIs improved symptoms (e.g., stiffness, swelling, and pain), additional studies were required. The authors noted that the use of ABIs and PRP injections for non-responsive patients was a research need.<sup>58</sup>

Calandruccio et al. (2017) conducted a review on ABIs for the treatment of lateral epicondylitis (tennis elbow). Treatment with conservative measures (e.g., non-steroidal anti-inflammatory drugs [NSAIDs], rest, bracing, and physical therapy) was typically successful. Research found that evidence varied and showed varying clinical outcomes.<sup>59</sup>

King et al. (2018) also noted that current research lacked high-quality randomized controlled trials (RCTs), especially cellular content for musculoskeletal conditions.<sup>60</sup>

# Service: Autologous Adipose-Derived Regenerative Cell Therapy for Scleroderma

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                                                          | Conclusion  |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0489T          | Autologous adipose-derived regenerative cell therapy for scleroderma in the hands; adipose tissue harvesting, isolation and preparation of harvested cells including incubation with cell dissociation enzymes, removal of non-viable cells and debris, determination of concentration and dilution of regenerative cells | Not Covered |
| 0490T          | Autologous adipose-derived regenerative cell therapy for scleroderma in the hands; multiple injections in one or both hands                                                                                                                                                                                               | Not Covered |

- **Autologous adipose-derived regenerative cell therapy for scleroderma** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Almadori et al. (2024) conducted a systematic review on fat grafting and adipose stem cells for facial systemic sclerosis. A total of 174 patients across 12 studies were included. Improvement was reported in 87% of the patients with an average of 5.30 months between procedures. The current literature was considered low or very low and did not support the treatment's efficacy. The authors noted a lack of randomized controlled trials (RCTs) that eliminated the placebo effect.<sup>61</sup>

Khanna et al. (2022) conducted an RCT evaluating the use of adipose-derived regenerative cells for the treatment of hand dysfunction in patients with limited cutaneous systemic sclerosis (lcSSc) or diffuse cutaneous SSc (dcSSc). Eighty-eight patients were randomized; 48 received autologous adipose-derived regenerative cells (ADRCs), and 40 were in the placebo group. The ADRC group demonstrated a change in hand function as evidenced by a Cochin Hand Function Scale (CHFS) score. However, the change was not statistically significant (mean  $\pm$  SD improvement in the CHFS score at 48 weeks  $11.0 \pm 12.5$  versus  $8.9 \pm 10.5$ ;  $P = 0.299$ ).<sup>62</sup>

Escobar-Soto et al. (2021) reported on a systematic review of the efficacy of human MSCs for the treatment of systemic sclerosis. Eleven articles were included (101 patients) with an age range of 18-75 years. A limitation of the study was the disproportionate number of females (85). Improvement was demonstrated in ulcerations and necrosis, as well as a reduction in pain. The authors noted that scientific data were lacking to establish treatment for systemic sclerosis.<sup>63</sup>

## Service: Insertion, Removal, and Reinsertion of Sinus Tarsi Implants

| CPT/HCPCS Code | Code Description                               | Conclusion  |
|----------------|------------------------------------------------|-------------|
| 0335T          | Insertion of sinus tarsi implant               | Not Covered |
| 0510T          | Removal of sinus tarsi implant                 | Not Covered |
| 0511T          | Removal and reinsertion of sinus tarsi implant | Not Covered |

- **Removal and reinsertion of sinus tarsi implants** is not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

- Not covered service.

García Bistolfi et al. (2022) reported on a retrospective review of pediatric patients with flexible flatfoot. The study included 14 patients (8-14 years of age) with a total of 19 feet. Positive outcomes were demonstrated functionally and radiographically. While significant improvement was observed in the American Orthopedic Foot and Ankle Scale (AOFAS) score, the authors noted that the results may be biased and that the scores were not validated. Future studies are needed that include a larger sample size and a control group.<sup>64</sup>

Smolle et al. (2022) performed a systematic review on long-term clinical and radiological outcomes in pediatric patients following surgical treatment for symptomatic flexible flat feet. Ten studies were included. Functional and clinical outcomes improved; compared with postoperative, AOFAS scores improved by 23 points at the latest follow-up. Due to inconsistencies in outcome parameters, the authors noted that research is needed on long-term outcomes and comparisons of various treatments for pediatric flexible flatfoot.<sup>65</sup>

Smith et al. (2021) conducted a systematic review on subtalar arthroereisis for the treatment of the symptomatic pediatric flexible pes planus. Twenty-four articles were reviewed with a total of 2550 feet (1399 children). Postoperative improvement was demonstrated, with 80% of patients reporting excellent satisfaction. Despite positive clinical outcomes, the authors noted the need for high-quality prospective studies to establish safety and efficacy.<sup>66</sup>

## Service: Continuous Recording of Movement Disorder Symptoms

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                             | Conclusion  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0535T          | Continuous recording of movement disorder symptoms, including bradykinesia, dyskinesia, and tremor for 6 days up to 10 days; includes set-up, patient training, configuration of monitor, data upload, analysis and initial report configuration, download review, interpretation and report | Not Covered |
| 0536T          | Continuous recording of movement disorder symptoms, including bradykinesia, dyskinesia, and tremor for 6 days up to 10 days; set-up, patient training, configuration of monitor                                                                                                              | Not Covered |

- **Continuous recording of movement disorder symptoms** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Rodríguez-Martín and Pérez-López (2024) conducted a review on monitoring devices for Parkinson's Disease. Devices included Personal KinetiGraph TM (PKG), Kinesia 360™, Kinesia U™, PDMonitor™, and STAT-ON™, which collected data on tremors, dyskinesia, and bradykinesia. Use is limited by the accuracy of the collected data and by the device's ease of use for the patient. Future research is needed to develop standardized protocols and conduct large-scale studies. Validation studies conducted under regulatory agency oversight (e.g., the US Food & Drug Administration [FDA]) were also cited as a need.<sup>67</sup>

Santiago et al. (2019) performed a qualitative evaluation of the PKG movement recording system for patients with Parkinson's disease. Four physicians at a single center completed a survey on 89 patients (143 total PKGs). Following the procedure, physicians noted that additional information about the patient was discovered, which assisted in treatment planning. Research is needed on the role of technology in clinical outcomes and access to the procedure.<sup>68</sup>

Joshi et al. (2019) reviewed the PKG movement recording system for Parkinson's disease in 63 patients. Symptoms were reported by the system when the patient did not report bradykinesia or dyskinesia (50% and 33%, respectively). Limitations of the study included a small study size. Documented motor function evaluation was not included, which could have impacted treatment. The system also could not measure certain Parkinsonian manifestations, including falls, freezing, or gait.<sup>69</sup>

## Service: Bone-Material Quality Testing by Microindentation of the Tibia

| CPT/HCPCS Code | Code Description                                                                                       | Conclusion  |
|----------------|--------------------------------------------------------------------------------------------------------|-------------|
| 0547T          | Bone-material quality testing by microindentation(s) of the tibia(s), with results reported as a score | Not Covered |

- Bone-material quality testing by microindentation(s) of the tibia(s) is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Schoeb et al. (2023) conducted a prospective observational study on the safety outcomes of impact microindentation (IMI). A total of 106 patients - 71 (67%) were female, and the median age of all patients was 59 years. Minor complications were reported by 3 patients (2 hematomas, 1 bruise) at 1-week follow-up. Pain was minimal in all patients at baseline and at follow-up (1 week and 1 month). A main limitation of the study was that follow-up was conducted by telephone, which may not yield as robust responses from the patient as a face-to-face consultation. The authors noted that additional research is needed to predict future fractures based.<sup>70</sup>

Schoeb et al. (2021) examined the bone material strength index, as measured by IMI, in 40 patients with primary hyperparathyroidism. Microindentation was compared in patients with low- and high-energy trauma fractures. Patients with high-energy trauma fractures demonstrated a higher bone material strength index. In each group, the difference was not demonstrated in patients with osteoporosis and osteopenia. The authors noted the efficacy of IMI, as it is minimally invasive, enabling the in vivo evaluation of tissue-level material properties of bone. The potential for use with DXA and BMD measurements is also discussed. Prospective studies with large sample sizes are needed.<sup>71</sup>

Schoeb et al. (2020) conducted a systematic review of the value of IMI for evaluating bone fragility. The authors sought to compare IMI against the measurement of bone mineral density (BMD) using dual-energy radiography absorptiometry (DXA), the gold standard to predict fracture risk and to diagnose osteoporosis. Thirty-eight studies demonstrated that IMI identified both. The authors noted limited evidence and the need for studies that do not have a high variability of methodological quality.<sup>72</sup>



## Service: Low-Level Laser Therapy (LLLT), Dynamic Phototonic, and Dynamic Thermokinetic Energies

| CPT/HCPCS Code | Code Description                                                                                       | Conclusion  |
|----------------|--------------------------------------------------------------------------------------------------------|-------------|
| 0547T          | Bone-material quality testing by microindentation(s) of the tibia(s), with results reported as a score | Not Covered |

- **Bone-material quality testing by microindentation(s) of the tibia(s)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

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# Service: Bone Strength and Fracture Risk Using Finite Element Analyses

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                                                                                                                                                     | Conclusion  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0554T          | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; retrieval and transmission of the scan data, assessment of bone strength and fracture risk and bone-mineral density, interpretation and report                                                                                                             | Not Covered |
| 0555T          | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; retrieval and transmission of the scan data                                                                                                                                                                                                                | Not Covered |
| 0556T          | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; assessment of bone strength and fracture risk and bone-mineral density                                                                                                                                                                                     | Not Covered |
| 0557T          | Bone strength and fracture risk using finite element analysis of functional data and bone-mineral density utilizing data from a computed tomography scan; interpretation and report                                                                                                                                                                                                                                  | Not Covered |
| 0743T          | Bone strength and fracture risk using finite element analysis of functional data and bone mineral density (BMD), with concurrent vertebral fracture assessment, utilizing data from a computed tomography scan, retrieval and transmission of the scan data, measurement of bone strength and BMD and classification of any vertebral fractures, with overall fracture-risk assessment, interpretation and report    | Not Covered |
| 0749T          | Bone strength and fracture-risk assessment using digital X-ray radiogrammetry-bone mineral density (DXR-BMD) analysis of bone mineral density (BMD) utilizing data from a digital X ray, retrieval and transmission of digital X-ray data, assessment of bone strength and fracture risk and BMD, interpretation and report;                                                                                         | Not Covered |
| 0750T          | Bone strength and fracture-risk assessment using digital X-ray radiogrammetry-bone mineral density (DXR-BMD) analysis of bone mineral density (BMD) utilizing data from a digital X ray, retrieval and transmission of digital X-ray data, assessment of bone strength and fracture risk and BMD, interpretation and report; with single-view digital X-ray examination of the hand taken for the purpose of DXR-BMD | Not Covered |

- **Bone strength and fracture risk using finite element analyses** are not considered appropriate, as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

○ Not covered service.

Westbury et al. (2019) evaluated 359 participants from the Hertfordshire Cohort Study that determined whether the addition of finite element analyses (FEA) and bone microarchitectural parameters derived from high-resolution peripheral quantitative CT improved fracture discrimination compared with areal bone mineral density (aBMD) measurements alone. While some individual measures of FEA distinguished fracture cases versus non-fracture cases in Poisson regression models, the area under the receiver operator curves revealed that the addition of FEA measures did not substantially improve discrimination between fracture and non-fracture cases. The results of the study indicated that further work is needed to assess the effectiveness of FEA in predicting bone fractures.<sup>76</sup>

Redepenning et al. (2020) performed a systematic review of rotator-cuff-focused finite element models in order to establish the quality of these articles using the Finite Element Model Grading Procedure (FEMGP), which is an overall quality percent score based on items important to the finite element model. Of the 22 articles reviewed, only 5 scored above 75% and fell within the "exceptional" range, with only one study being published after 2010. Additionally, 16 fell in the "good" range of 50-74.9%; it is important to note that 9 of these "good" scores fell below 60%. The remaining article was rated only "fair" quality and fell within 25-49.9%. While the authors concluded that FEMGP is an appropriate measure for evaluating the quality of the finite element modeling literature, the lack of high-quality studies supported the need for improved guidelines and standards for finite element modeling.<sup>77</sup>

Allaire et al. (2019) performed a case-control study (n=26 cases, n=62 controls) to examine the relationship between vertebral strength, derived by quantitative CT-based FEA, and incident vertebral fracture (VF). Cases were matched to controls on age and sex. The authors used conditional logistic regression, adjusted for age, BMI, and prevalent vertebral fracture status, and an additional model adjusted for aBMD. They found that lower FEA-derived vertebral strength was associated with increased risk of new or worsening VF in adjusted models for age, sex, and prevalent vertebral fracture status (odds ratio = 5.2, 95% confidence interval (CI) = [1.3-19.8]). AUC suggested that vertebral strength better predicted incident VF than aBMD (AUC = 0.804 vs. 0.715, p = 0.05), but not other CT-derived measures such as bone mineral content (AUC = 0.804 vs. 0.794), or integral volumetric bone mineral density (AUC = 0.804 vs. 0.815). While the results suggested that CT-based FEA performs as well as, or better than, other CT-based measures, the small sample size limits generalizability. Further investigations were noted as a need with stronger study designs, such as randomized controlled trials (RCTs), and larger sample sizes.<sup>78</sup>

# Service: Autologous Cellular Implant for Knee Osteoarthritis

| CPT/HCPCS Code | Code Description                                                                                                                                                                                  | Conclusion  |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0565T          | Autologous cellular implant derived from adipose tissue for the treatment of osteoarthritis of the knees; tissue harvesting and cellular implant creation                                         | Not Covered |
| 0566T          | Autologous cellular implant derived from adipose tissue for the treatment of osteoarthritis of the knees; injection of cellular implant into knee joint including ultrasound guidance, unilateral | Not Covered |

- An **autologous cellular implant derived from adipose tissue for the treatment of knee osteoarthritis** is not considered appropriate, as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Ulivi et al. (2023) conducted a randomized controlled trial (RCT) evaluating the efficacy of micro-fragmented adipose tissue (mFAT) in combination with arthroscopic debridement in 78 patients with grade 3-4 knee osteoarthritis. The group that received arthroscopic debridement and mFAT demonstrated improved functional scores at 6-month and 24-month follow-up. A lack of blinding of patients and assessors was a major limitation of the study.<sup>79</sup>

Wiggers et al. (2021) conducted a systematic review that evaluated autologous MSC therapy in knee osteoarthritis. Fourteen RCTs were included, comprising 408 patients. MSC therapy originated from adipose tissue, activated peripheral blood, or bone marrow. At 1-year follow-up, 73% of clinical outcome measures demonstrated improvement. An increase of 1.8-4.4 points was found on the VAS and 18-32 points of the Knee Osteoarthritis Outcome Score (KOOS). Despite positive findings, the authors noted that there was a high-risk of bias in 10 of the studies.<sup>80</sup>

Kraeutler et al. (2017) conducted a review of MSC implantation following partial or total meniscectomy to delay the progression of knee osteoarthritis. Studies have been conducted in animal models, and short-term results have been favorable. Data on human subjects were limited, and future research was recommended with larger sample sizes, standardized protocols, and comparisons of disease progression with MSCs and other therapies.<sup>81</sup>

## Service: Osteotomy of the Humerus, with Insertion of an Externally Controlled Intramedullary Lengthening Device

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                | Conclusion  |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0594T          | Osteotomy, humerus, with insertion of an externally controlled intramedullary lengthening device, including intraoperative imaging, initial and subsequent alignment assessments, computations of adjustment schedules, and management of the intramedullary lengthening device | Not Covered |

- **Osteotomy of the humerus, with insertion of an externally controlled intramedullary lengthening device**, is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

- Not covered service.

Lauffer et al. (2022) conducted a single-center study with 28 patients that had shortened upper extremities that limited function and have undergone humeral lengthening. At follow-up, all patients reported clinical improvement based on preoperative scores. Achievement of desired centimeters (cm) lengthening (both arms) was found in 89% of patients. Complications were noted in 50% of the patients including unplanned reoperation (39%), radial nerve palsy (39%), refracture of the regenerate (18%), and one patient (4%) ended treatment due to a discrepancy in limb length.<sup>82</sup>

In a systematic review, Lorange et al. (2022) examined the outcomes and complications of humerus lengthening with a motorized intramedullary nail. Nine articles were identified and included 20 patients for a total of 22 segments lengthened (mean gained length of 5.7 cm and duration of lengthening averaged 71.6 days). Reported complications were limited range of motion (ROM), hardware failure, and hypertrophic bone regeneration. Limitations varied across studies. The authors noted that future research should focus on outcomes related to range of motion improvement.<sup>83</sup>

The National Institute for Health and Care Excellence (NICE) (2022) published guidance on intramedullary distraction for upper limb lengthening. Quality and quantity of evidence was noted as a research need. However, due to the rarity of the condition and limited treatments, the procedure may be medically necessary in certain clinical scenarios. In addition, NICE stated that "clinical governance, consent, and audit or research" should be developed and monitored. Noted future research needs included selection of patients, device, and technique used as well as long-term outcomes (e.g., quality of life, repeat procedures, complication rates).<sup>84</sup>

## Service: Noncontact Real-Time Fluorescence Wound Imaging for Bacterial Presence

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                          | Conclusion  |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0598T          | Noncontact real-time fluorescence wound imaging, for bacterial presence, location, and load, per session; first anatomic site (eg, lower extremity)                                                                       | Not Covered |
| 0599T          | Noncontact real-time fluorescence wound imaging, for bacterial presence, location, and load, per session; each additional anatomic site (eg, upper extremity) (List separately in addition to code for primary procedure) | Not Covered |

- **Noncontact real-time fluorescence wound imaging for bacterial presence** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Badrie et al. (2025) conducted a systematic review of the clinical utility of autofluorescence imaging for detecting bacteria in wounds. Sixteen studies were included. The MolecuLight i:X device was evaluated in one study. Ten studies demonstrated a significant decrease in bacteria with autofluorescence-guided debridement, and 6 studies evaluated treatment decisions to accelerate wound healing. Outcome variability was observed across several studies, underscoring the need for larger trials to assess the technology's efficacy across various clinical settings.<sup>85</sup>

Armstrong et al. (2023) conducted a multicenter study evaluating the efficacy of point-of-care fluorescence imaging for assessing bacterial load in diabetic foot ulcers (DFUs) from 138 patients. The authors noted that high bacterial load or infection cannot be detected unless symptoms are present (e.g., in immunocompromised patients). Multiple limitations were noted. The study analyzed high bacterial load and its correlation to wound pathogenicity. The authors noted that systemic factors are missing that could delay healing of diabetic foot ulcers and increase the risk of infection.<sup>86</sup>

Rahma et al. (2022) conducted a randomized controlled trial (RCT) evaluating healing rates of DFUs using bacterial autofluorescence imaging. All 56 study participants had a DFU without suspected infection. At 12 weeks, 45% of ulcers had healed in the autofluorescence group versus the control group (22%). In the autofluorescence group, a 40% reduction in wound area was observed at 4 weeks compared with the control group (39%). At 12 weeks, the wound area reduction was 91% (autofluorescence) and 73% (control). This was a pilot study and had limited results due to not having data to compare with.<sup>87</sup>

# Service: Percutaneous Injection of Allogeneic Cellular and/or Tissue-Based Products

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                         | Conclusion  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0627T          | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; first level                                                                       | Not Covered |
| 0628T          | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; each additional level (List separately in addition to code for primary procedure) | Not Covered |
| 0629T          | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; first level                                                                                 | Not Covered |
| 0630T          | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; each additional level (List separately in addition to code for primary procedure)           | Not Covered |

- **Percutaneous injection of allogeneic cellular and/or tissue-based products in a lumbar intervertebral disc** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Lewandrowski et al. (2023) performed a small retrospective study to evaluate the safety and efficacy of allogeneic MSC injections in the lumbar intervertebral discs. Initial findings showed improved pain scores and clinical functioning. Using Pfirrmann grading, follow-up MRI scans showed improvement after 2 years. Stronger research was needed on evidence of healing and reversal of degenerative changes in current studies.<sup>88</sup>

Amirdelfan et al. (2021) performed a multicenter randomized controlled trial (RCT) at 13 clinical locations (12 in the United States, 1 in Australia) that evaluated the safety and efficacy of a single intradiscal injection of STRO-3+ adult allogeneic mesenchymal precursor cells (MPCs) combined with hyaluronic acid (HA) in patients with chronic low back pain (CLBP) and degenerative disc disease (DDD). The studies included 100 patients with a modified Pfirrmann score of 3-6. Evaluation occurred at 1, 3, 6, 12, 24, and 36 months following single injections of STRO-3+ adult allogeneic MPCs combined with HA. Improvement was noted with VAS and ODI. Adverse effects were low. The authors concluded that while MPCs appeared to be safe and possibly effective, larger blinded prospective RCTs would be necessary to confirm these findings. Results demonstrated that intradiscal injection of MPCs appears to be safe and may be an effective and durable minimally invasive therapy for subjects who have CLBP associated with moderate DDD. Further study results demonstrated that intradiscal injection of MPCs appears to be safe and may be an effective and durable minimally invasive therapy for subjects who have CLBP associated with moderate DDD. Further study in a larger blinded prospective RCT that addresses the limitations of this initial clinical trial is warranted.<sup>89</sup>

Matta et al. (2020) noted the potential of cell therapy for pain improvement. The authors stated that extensive, well-controlled studies are needed that address disability. Biological factors that may reduce efficacy also warrant investigation (e.g., reduced pH, avascular status, long-term inflammation, progressive cell death).<sup>90</sup>



## Service: Noncontact Near-Infrared Spectroscopy

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                                                                     | Conclusion  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0640T          | Noncontact near-infrared spectroscopy (eg, for measurement of deoxyhemoglobin, oxyhemoglobin, and ratio of tissue oxygenation), other than for screening for peripheral arterial disease, image acquisition, interpretation, and report; first anatomic site                                                                         | Not Covered |
| 0859T          | Noncontact near-infrared spectroscopy (e.g., for measurement of deoxyhemoglobin, oxyhemoglobin, and ratio of tissue oxygenation), other than for screening for peripheral arterial disease, image acquisition, interpretation, and report; each additional anatomic site (List separately in addition to code for primary procedure) | Not Covered |
| 93998          | Unlisted noninvasive vascular diagnostic study [when used to report contact near-infrared spectroscopy studies of wounds]                                                                                                                                                                                                            | Not Covered |

- **Noncontact near-infrared spectroscopy (NIRS) (other than for screening for peripheral arterial disease, image acquisition, interpretation, and report)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Reiter et al. (2025) conducted a single-center prospective cohort study to assess skin tear flap viability using NIRS. A significant improvement was noted in the median cross-sectional area with preserved skin flap (1.6 cm<sup>2</sup> [IQR, 0.9 cm<sup>2</sup>-2.9 cm<sup>2</sup>];  $P = .0001$  versus 9.1 cm<sup>2</sup> [IQR, 4.2 cm<sup>2</sup>-11.7 cm<sup>2</sup>]). Healing time was also less with preserved skin flap (28 days) as compared to 42 days for wounds without. Identified limitations warranted future research, such as determining a threshold value for optimal skin flap viability.<sup>91</sup>

Andersen et al. (2024) conducted a single-center feasibility study of NIRS for wound healing in adults. A total of 16 lower extremity wounds, regardless of size or etiology, underwent serial imaging. Despite positive clinical outcomes, additional research was identified as needed, including a control group, longer follow-up timeframes, and larger sample sizes.<sup>92</sup>

Lindelauf et al. (2022) conducted a systematic review comparing NIRS with hyperspectral imaging (HSI) for detecting flap failure in reconstructive surgery. A total of 3662 flap procedures using NIRS were performed in 1970 patients; 90 flap procedures were performed using HSI. Survival was 99% (95% CI: 97.8-99.7) in patients who underwent NIRS, compared with 92% (95% CI: 83.3-96.8) in patients who did not. No significant differences were noted for flaps with vascular crisis ( $p = 0.39$ ). Medical evidence shows promise for both NIRS and HSI; however, more research is needed to establish efficacy.<sup>93</sup>



## Service: Anterior Lumbar or Thoracolumbar Vertebral Body Tethering

| CPT/HCPCS Code | Code Description                                                                                                                                                     | Conclusion  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0656T          | Anterior lumbar or thoracolumbar vertebral body tethering; up to 7 vertebral segments                                                                                | Not Covered |
| 0657T          | Anterior lumbar or thoracolumbar vertebral body tethering; 8 or more vertebral segments                                                                              | Not Covered |
| 0790T          | Revision (eg, augmentation, division of tether), replacement, or removal of thoracolumbar or lumbar vertebral body tethering, including thoracoscopy, when performed | Not Covered |

- **Anterior lumbar or thoracolumbar vertebral body tethering** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

○ Not covered service.

In a recent umbrella review that included 11 relevant systematic reviews and meta-analyses, Lau et al. (2024) conducted a comprehensive and diligent analysis of the current evidence on the effectiveness and safety of VBT for the management of adolescent idiopathic scoliosis, combining results from various systematic reviews and meta-analyses. They found that VBT has shown promising results for treating adolescent idiopathic scoliosis. However, because VBT is a relatively new procedure, there was limited information on its long-term effects, and the rates of complications remain a significant concern.<sup>94</sup>

Alasadi et al. (2024) conducted a comprehensive review of VBT for adolescent idiopathic scoliosis, a non-fusion alternative to anterior or posterior spinal fusion. They reviewed the literature and reported on radiographic outcomes, complications, and anesthetic considerations. The review illustrates the potential benefits and challenges of VBT for adolescent idiopathic scoliosis. In their conclusions, they stressed the importance of skeletal maturity in relation to complications such as approach- and procedure-related pulmonary issues, device breakage, and high reoperation rates.<sup>95</sup>

Zhu et al. (2022) conducted a systematic review and a single-arm meta-analysis of VBT for scoliosis. A total of 1045 patients from 26 studies were included. Overall, the authors noted a 73.02% success rate; however, 15.8% of patients required additional surgery. Over half of the patients (52.17%) reported complications, including curve progression with tether breakage, pulmonary complications, and overcorrection.<sup>96</sup>

Shin et al. (2021) conducted a meta-analysis of 211 patients from 10 studies on the efficacy of anterior VBT versus posterior spinal fusion for the treatment of adolescent idiopathic scoliosis. The authors compared complication and reoperation rates. Patients demonstrated higher complication rates with anterior VBT. The authors noted the need for long-term, randomized, prospective studies to analyze the efficacy of VBT for the adolescent population.<sup>97</sup>

# Service: Artificial Intelligence (AI) and Computer-Based Analysis

| CPT/HCPCS Code | Code Description                                                                                                                                                                         | Conclusion  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0691T          | Automated analysis of an existing computed tomography study for vertebral fracture(s), including assessment of bone density when performed, data preparation, interpretation, and report | Not Covered |
| 0693T          | Comprehensive full body computer-based markerless 3D kinematic and kinetic motion analysis and report                                                                                    | Not Covered |

- **Artificial intelligence (AI) and computer-based analysis** are not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.
  - Not covered service.

Lin et al. (2024) conducted a multicenter study on fracture risk classification in 91 patients with metastatic hormone-sensitive prostate cancer (mHSPC). The authors stated that prospective studies are needed to evaluate patients with elevated BCT-assessed fracture risk and the efficacy of early administration of bone antiresorptive agents. It was also noted that further research should address the standardization of practice patterns at participating study centers, as they may differ and thus impact study results.<sup>98</sup>

Keaveny et al. (2020) performed a review on the efficacy and validation of biomechanical CT (BCT) for osteoporosis assessment. The study demonstrated favorable clinical outcomes compared with DXA scans for accurately assessing fracture risk and diagnosing osteoporosis. The authors noted that future clinical trials need to address long-term outcomes of non-DXA scans and algorithm-based assessments.<sup>99</sup>

Adams et al. (2018) reported on the Fracture, Osteoporosis, and CT Utilization Study (FOCUS), a retrospective case-cohort study of 3938 patients. Each patient had a routine CT (abdominal or pelvic) and a DXA scan at least 3 years after the CT. BCT demonstrated a sensitivity of 0.56 (95% CI, 0.51 to 0.60) in females and 0.45 (95% CI, 0.39 to 0.52) in males; specificity in females was 0.77 (95% CI, 0.72 to 0.81) and 0.82 (95% CI, 0.76 to 0.87) in males. Conversely, DXA demonstrated a sensitivity of 0.52 (95% CI, 0.47 to 0.56) in females and 0.43 (95% CI, 0.37 to 0.50) in males; specificity in females was 0.77 (95% CI, 0.73 to 0.81) and 0.83 (95% CI, 0.77 to 0.88) in males. The authors concluded that BCT is just as effective as DXA.<sup>100</sup>

## Service: Bone-Substitute Material Injections

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                           | Conclusion  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0707T          | Injection(s), bone-substitute material (eg, calcium phosphate) into subchondral bone defect (ie, bone marrow lesion, bone bruise, stress injury, microtrabecular fracture), including imaging guidance and arthroscopic assistance for joint visualization | Not Covered |
| 0869T          | Injection(s), bone-substitute material for bone and/or soft tissue hardware fixation augmentation, including intraoperative imaging guidance, when performed                                                                                               | Not Covered |

- **Bone-substitute material injections** are not considered appropriate as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.
  - Not covered service.

Cohen et al. (2025) conducted an observational study to evaluate the 12-month outcomes of subchondroplasty in patients with mild-to-moderate knee osteoarthritis and persistent bone marrow lesions. At the end of the 12-month follow-up, 79 patients completed the study. They found statistically significant improvements in all clinical endpoints from baseline to the 12-month follow-up. In the same period, no severe adverse events were reported. They concluded that subchondroplasty is a safe and effective treatment for symptoms associated with persistent bone marrow lesions in mild-to-moderate osteoarthritic knees. However, they noted that randomized clinical trials with rigorous radiological data collection are required to recommend subchondroplasty as a standard of care.<sup>101</sup>

Di Matteo et al. (2021) conducted a systematic review to assess the efficacy of intraosseous injections in patients with knee osteoarthritis and bone marrow lesions. Twelve studies that used various injection types were identified. A total of 459 patients were included in the study, receiving one of three injection types: calcium phosphate, platelet-rich plasma, or bone marrow concentrate. They concluded that while injections are minimally invasive and have a low complication rate, more high-quality evidence is needed to support their use.<sup>102</sup>

Nairn et al. (2021) conducted a systematic review of the literature to characterize the clinical outcomes of subchondroplasty and determine whether patients who underwent the procedure experienced improvements in pain and functional outcomes. They examined 45 unique results and 17 studies and found that subchondroplasty shows possible improvements in pain and function, with a low rate of immediate transition to total knee arthroplasty (TKA) and low complication rates. They suggested that subchondroplasty has shown promising initial results but caution that high-quality, comparative studies with long-term follow-up are needed.<sup>103</sup>

## Service: Autologous Adipose-Derived Regenerative Cell (ADRC) Therapy for Partial-Thickness Rotator Cuff Repair

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                   | Conclusion  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0717T          | Autologous adipose-derived regenerative cell (ADRC) therapy for partial thickness rotator cuff tear; adipose tissue harvesting, isolation and preparation of harvested cells, including incubation with cell dissociation enzymes, filtration, washing, and concentration of ADRCs | Not Covered |
| 0718T          | Autologous adipose-derived regenerative cell (ADRC) therapy for partial thickness rotator cuff tear; injection into supraspinatus tendon including ultrasound guidance, unilateral                                                                                                 | Not Covered |

- **Autologous adipose-derived regenerative cell (ADRC) therapy for partial-thickness rotator cuff repair** is not considered appropriate, as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

- Not covered service.

Alt et al. (2021) discussed a case study of a 66-year-old patient suffering from traumatic symptomatic partial-thickness rotator cuff tear (sPTRCT). UA-ARDCs were injected 18 days following the injury; however, a follow-up MRI 2.5 months post-treatment revealed the need for open surgery. A biopsy was taken during this procedure, and tendon regeneration was noted. The group concluded that new tendon tissue can be formed by this procedure, a finding previously attributed only to fetal tendon development. No manipulation, stimulation, or genetic reprogramming of the cells was required prior to injection, which was considered significant.<sup>104</sup>

Hurd et al. (2020) conducted a randomized controlled trial (RCT) evaluating the safety and efficacy of fresh, uncultured, unmodified autologous adipose-derived regenerative cells (UA-ARDCs) for the treatment of sPTRCTs. The 20 participants (originally 84, of whom 64 withdrew from the study) were females and males aged 30-75 years, with MRI and orthopedic specialist confirmation of sPTRCT. The pilot study was intended to obtain safety data for use in subsequent studies, with a follow-up study involving 246 subjects. No severe adverse events were reported in this trial compared with corticosteroid injection.<sup>105</sup>

The American Academy of Orthopaedic Surgeons (AAOS) published a 2025 guideline on the management of rotator cuff injuries. Regarding partial rotator cuff tears, the Academy recommends debridement or repair of high-grade partial-thickness cuff tears that have failed physical therapy to improve outcomes. No information or recommendations for ARDC injections were found.<sup>35</sup>

# Service: Posterior Vertebral Joint Replacement (Lumbar Spine)

| CPT/HCPCS Code | Code Description                                                                                                                                                      | Conclusion  |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0719T          | Posterior vertebral joint replacement, including bilateral facetectomy, laminectomy, and radical discectomy, including imaging guidance, lumbar spine, single segment | Not Covered |

- **Posterior vertebral joint replacement in the lumbar spine** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Patwardhan et al. (2025) conducted a biomechanical experiment using human lumbosacral spine specimens to evaluate the shear resistance of L5-S1 segments implanted with lumbar total joint (TJR) prostheses. These were implanted bilaterally after laminectomy, facetectomy, and complete L5-S1 discectomy. Simulated loading was induced to determine stability levels. Stability was achieved approximately 3 months postoperatively. The group acknowledged that additional in vivo studies would be required.<sup>106</sup>

Sielatycki et al. (2021) conducted a retrospective analysis of prospectively collected data comparing patients who underwent lumbar total joint replacement (LTJR, replacing disc and facet joints) or transforaminal lumbar interbody fusion (TLIF) for conditions warranting fusion (e.g., degenerative spondylolisthesis, recurrent disc herniation). The study included 156 adult TLIF patients, matched to 52 LTJR patients via propensity score matching, for a total of 208 participants. Patients received a motion-preserving lumbar reconstruction implant replacing the function of both discs and facets, implanted with a bilateral transforaminal approach including complete facetectomies. At three months, both cohorts showed significant improvement in back and leg pain and in the disability index. It was concluded that this technology may be a viable alternative to TLIF for certain degenerative conditions. Studies were stated to be ongoing.<sup>107</sup>

The MOTUS Total Joint Replacement Investigational Device Exemption Study is currently underway (ClinicalTrials.gov ID NCT05438719). It is manufacturer-sponsored to demonstrate the noninferiority of the MOTUS device compared to lumbar interbody fusion. This was a multi-center (up to 20 sites), prospective, non-blinded investigation. The MOTUS TJR device was approved by the US Food & Drug Administration (FDA) as an investigational device only for use in clinical trials.<sup>108</sup>

## Service: Remote Real-Time, Motion Capture-Based Neurorehabilitative Therapy

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                    | Conclusion  |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0733T          | Remote real-time, motion capture-based neurorehabilitative therapy ordered by a physician or other qualified health care professional; supply and technical support, per 30 days                                                                    | Not Covered |
| 0734T          | Remote real-time, motion capture-based neurorehabilitative therapy ordered by a physician or other qualified health care professional; treatment management services by a physician or other qualified health care professional, per calendar month | Not Covered |
| 0791T          | Motor-cognitive, semi-immersive virtual reality-facilitated gait training, each 15 minutes (List separately in addition to code for primary procedure)                                                                                              | Not Covered |

- **Remote real-time, motion capture-based neurorehabilitative therapy** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

- Not covered service.

El-Banna et al. (2026) conducted a systematic review of 22 studies on digital and intelligent technologies for neurorehabilitation. This included emerging therapeutic platforms as well as artificial intelligence (AI), gamification, and virtual reality. While the literature supported this type of therapy, concerns included methodological heterogeneity, short-term follow-up, and questions about AI transparency. The authors noted that standardized outcomes are needed, specifically in robust multicenter trials.<sup>109</sup>

Johnson et al. (2025) presented a review of telemedicine, telerehabilitation, and virtual care for the treatment of musculoskeletal conditions. While the demand for telehealth has grown over the last several years, additional research is needed, specifically on the design of clinical evaluation tools and virtual rehabilitation programs for remote care. The authors stressed the need for technology-friendly platforms for individuals with limited experience using computers and other devices. Disparities among minorities were also a noted challenge for study inclusion. Asian and Hispanic patients were less likely to access telehealth services versus White patients, which highlighted the necessity to remove barriers. Research was insufficient to highlight advancements in digital literacy and multilingual platforms.<sup>110</sup>

Park et al. (2024) examined the effectiveness of interactive telerehabilitation, using remote monitoring and data analysis to assess gait performance in older adults. Seventeen studies were included. After 4 weeks or more of telerehabilitation, all studies showed gait improvement in older adults with Parkinson's disease, stroke, and multiple sclerosis. Several limitations were noted, including publication and language bias, the inability to quantitatively compare the studies due to heterogeneity, and a lack of understanding of interactive telerehabilitation for other aspects (e.g., social, cognitive, and general well-being).<sup>111</sup>

## Service: Xenograft Implantation into the Articular Surface

| CPT/HCPCS Code | Code Description                                  | Conclusion  |
|----------------|---------------------------------------------------|-------------|
| 0737T          | Xenograft implantation into the articular surface | Not Covered |

- **Xenograft implantation into the articular surface** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

- Not covered service.

A systematic review and meta-analysis, conducted by Oetli et al. (2025), examined the safety and efficacy of xenograft augmentation in rotator cuff repair. The review aimed to compare the outcomes of xenograft repair with those of standard rotator cuff repair techniques. The authors found no statistically significant differences between the two approaches in strength measurements and range of motion, though xenograft augmentation was associated with slightly higher complication rates and functional scores.<sup>112</sup>

In their study of osteochondral regeneration, Rastegar et al. (2022) examined the regenerative effect of decellularized osteochondral extracellular matrix xenografts in combination with biological products in an osteochondral defect. The objective of this study was to prepare decellularized osteochondral scaffolds from sheep and implant the xenograft into a rabbit model with an osteochondral defect. Decellularization was performed using multistep methods, resulting in approximately 98% cell elimination. The authors concluded that xenograft decellularized extracellular matrix and biological factor platforms represent a promising approach to human osteochondral regeneration.<sup>113</sup>

Anderson et al. (2022) reviewed studies on NeoCart, a third-generation autologous chondrocyte implantation (ACI) therapeutic. Phased clinical trials, which began in 2003, found that the control microfracture procedure demonstrated the most pain relief and functional improvement depending on the size of the patient's lesion. The study was terminated in Phase III, and the therapy was not approved for use.<sup>114</sup>



# Service: Transcutaneous Magnetic Stimulation Using a Focused Low-Frequency Electromagnetic Pulse of a Peripheral Nerve

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                                                                                           | Conclusion  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0766T          | Transcutaneous magnetic stimulation by focused low-frequency electromagnetic pulse, peripheral nerve, with identification and marking of the treatment location, including noninvasive electroneurographic localization (nerve conduction localization), when performed; first nerve                                                                       | Not Covered |
| 0767T          | Transcutaneous magnetic stimulation by focused low-frequency electromagnetic pulse, peripheral nerve, with identification and marking of the treatment location, including noninvasive electroneurographic localization (nerve conduction localization), when performed; each additional nerve (List separately in addition to code for primary procedure) | Not Covered |

- **Transcutaneous magnetic stimulation using a focused low-frequency electromagnetic pulse to a peripheral nerve** is not considered appropriate, as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

○ Not covered service.

Park et al. (2023) conducted a systematic review and meta-analysis of the literature examining the effectiveness of peripheral magnetic stimulation (PMS), also known as transcutaneous magnetic stimulation (TMS), for acute and chronic post-surgical pain. The systematic review consisted of 18 studies. The meta-analysis revealed that those who received PMS had significantly lower mean postoperative pain scores after 7 days ( $n=6$ , mean difference [MD] = -1.64, 95% Confidence Interval [CI] = [-2.08, -1.20]), postoperative pain scores at 1 month after surgery ( $n=3$ , MD = -1.82, 95% CI = [-2.48, -1.17]), and postoperative pain scores at 2 months after surgery ( $n=3$ , MD = -1.96, 95% CI = [-3.67, -0.26]) when compared to sham or no intervention groups. There were no significant differences in pain after 6 and 12 months, after surgery, or acute postoperative consumption between those who had undergone PMS and those who had not. However, the authors noted the relatively low quality of the publications included in the analysis and the heterogeneity as limitations, and thus concluded that higher-quality evidence is needed to recommend PMS as a treatment for acute and chronic post-surgical pain.<sup>115</sup>

Rao et al. (2023) conducted a phase II randomized controlled trial (RCT) as a follow-up to a pilot study that demonstrated the utility of TMS for pain relief in patients with diabetic peripheral neuropathy (DPN). Of the 31 participants in the analysis, both the sham group and the TMS treatment group experienced a decrease in mean pain scores from baseline to the final visit. This effect was observed across the morning (AM) and afternoon (PM) pain scores and the overall pain score. However, there was no significant difference in the mean AM ( $p=0.91$  at baseline,  $p=0.65$  at final visit), PM ( $p=0.74$  at baseline,  $p=0.96$  at final visit), or overall pain scores ( $p=0.80$  at baseline,  $p=0.83$  at final visit), indicating that TMS had no treatment effect on pain. The authors concluded that, although the treatment was safe, TMS does not significantly reduce pain.<sup>116</sup>

Panathoop et al. (2023) conducted a pilot RCT examining the effects of five sessions of repetitive PMS (rPMS) compared with conventional therapy (patient education, gliding exercise, and vitamins B1-6-12) on carpal tunnel syndrome. Pain outcomes were measured using the Boston Carpal Tunnel Questionnaire (BCTQ), which included a symptom severity scale (SSS) and a functional status scale (FSS). The trial enrolled 24 participants and found that those with rPMS experienced a decrease in BQ-SSS after two weeks ( $p=0.009$ ); however, the difference in pain scores over two weeks in the rPMS group did not significantly differ from the difference in scores in the control group for BQ-SSS ( $p=0.27$ ) or BQ-FSS ( $p=0.22$ ), which indicated that the rPMS did not substantially improve pain in the patient.<sup>117</sup>



# Service: Real-Time Pressure-Sensing Epidural Guidance System

| CPT/HCPCS Code | Code Description                                                                                                | Conclusion  |
|----------------|-----------------------------------------------------------------------------------------------------------------|-------------|
| 0777T          | Real-time pressure-sensing epidural guidance system (List separately in addition to code for primary procedure) | Not Covered |

- A **real-time pressure-sensing epidural guidance system** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Vaira et al. (2019) examined the sensitivity and specificity of CompuFlo, a device for epidural placement that provides real-time pressure measurements and can differentiate between false and true loss of resistance during epidural space identification procedures. The authors enrolled 120 healthy women who requested labor epidural analgesia and received an epidural from the CompuFlo device. In these women, the authors found that CompuFlo distinguished between true and false loss-of-resistance (sensitivity = 0.83, specificity = 0.81). While the authors noted the device's capabilities, the small sample size and lack of a comparison group limit the generalizability of the study. Additional robust study designs, such as multisite randomized controlled trials (RCTs), are needed to establish the device's utility.<sup>118</sup>

Coccoluto et al. (2021) conducted a single-arm, open-label study to examine the sensitivity and specificity of the Computer Controlled Drug Delivery System (CCDDS) with continuous pressure and waveform monitoring in establishing catheter placement in parturients who received the combined spinal-epidural (CSE) technique for labor analgesia. The authors collected data from 40 patients undergoing CSE labor analgesia with successful analgesia. Ultimately, the pressure waveform analysis had high sensitivity (95%), positive predictive value (100%), and specificity (100%), but a lower negative predictive value (60%). The authors concluded that the device's high sensitivity and positive predictive value indicated success in pulsatile pressure waveform monitoring, though more studies are needed with comparison groups, randomization, and larger sample sizes.<sup>119</sup>

Capogna, Coccoluto, and Velardo (2020) conducted a simulation study that determined whether CompuFlo had a better ability to identify the epidural space than the standard technique. The simulation involved 52 expert obstetric anesthesiologists, who were randomly assigned to either the CompuFlo device or the standard technique. Participants were asked to stop the needle when resistance was deemed to be lost in both groups. The primary outcome of the study was the difference in Tuohy needle extension between those who used CompuFlo and those who used the standard technique. The authors found a significant difference in needle extension length between the two groups ( $p < 0.00001$ ), with the CompuFlo group having shorter needle extension than the standard technique group. While the results supported the CompuFlo method, the study was a simulation, and real-life patient data were identified as necessary to properly evaluate the efficacy of real-time pressure-sensing epidural guidance systems.<sup>120</sup>

## Service: Surface Mechanomyography (sMMG)

| CPT/HCPCS Code | Code Description                                                                                                                                                                          | Conclusion  |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0778T          | Surface mechanomyography (sMMG) with concurrent application of inertial measurement unit (IMU) sensors for measurement of multi-joint range of motion, posture, gait, and muscle function | Not Covered |

- **Surface mechanomyography (sMMG) with concurrent application of inertial measurement unit (IMU) sensors** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Kareem et al. (2024) conducted a cross-sectional study of 280 participants, including 140 with type 2 diabetes, to examine the utility of combining surface mechanomyography (sMMG) and electrogoniometry for quantifying tendon reflexes. Variables of interest that were collected from the sMMG were muscle velocity (MCV), muscle relaxation velocity (MRV), and mechanomyography peak amplitude (MMG Amp). The authors found that patients with type 2 diabetes had significantly lower mean MCV ( $p=0.01$ ) and MRV ( $p<0.001$ ), highlighting sMMG's ability to discriminate patellar tendon reflexes between those with type 2 diabetes and those without. However, the authors did not test sMMG in combination with inertial measurement unit (IMU) sensors, suggesting that more evidence is needed to support this combination.<sup>121</sup>

Linderman et al. (2023) evaluated 15 participants cross-sectionally to determine if sMMG detection of muscle contraction timing was similar to surface electromyography (sEMG) measures. All participants completed bilateral deep squats, and a subset of 10 participants also completed 3 trials of repeated unilateral partial squat activity. All activity was performed while simultaneously wearing an sMMG sensor and an sEMG sensor. The authors found no significant differences in sensor measurements between bilateral ( $p=0.822$ ) and partial ( $p=0.246$ ) squats. sMMG sensors had the highest reliability for quadriceps excursion magnitude during bilateral and partial squats, indicating that sMMG consistently and accurately provided key quadriceps muscle metrics. However, the sample size in this analysis was very small, and sMMG was not tested in combination with IMU sensors. Thus, the authors stated that more evidence is needed to support the combination of sMMG and IMU.<sup>122</sup>

Scarborough et al. (2023) compared sMMG and sEMG to quantify muscle contractility. The investigators examined the quadriceps, hamstrings, and gastrocnemius muscles in 15 participants. All movements were performed while simultaneously wearing an sMMG and an sEMG. Significant correlations (defined as Pearson R correlation significant at  $p<0.05$ ) between sMMG and sEMG readings of average muscle activation in the quadriceps, hamstrings, and gastrocnemius muscles were observed. Data supported sMMG's ability to measure muscle activation. However, sMMG was not evaluated in conjunction with IMU sensors, and future studies should simultaneously assess sMMG and IMU measurements of muscle to confirm clinical significance.<sup>123</sup>

## Service: Transcutaneous Auricular Neurostimulation

| CPT/HCPCS Code | Code Description                                                                                          | Conclusion  |
|----------------|-----------------------------------------------------------------------------------------------------------|-------------|
| 0783T          | Transcutaneous auricular neurostimulation, set-up, calibration, and patient education on use of equipment | Not Covered |

- **Transcutaneous auricular neurostimulation** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

- Not covered service.

Buchman et al. (2025) conducted a meta-analysis of the effect of vagus nerve stimulation, including transcutaneous auricular VNS (taVNS), on reducing pain as indicated by VAS or NRS scores. The authors included six small studies with a total of 146 patients - three randomized controlled trials (RCTs) evaluated taVNS for musculoskeletal pain secondary to systemic lupus erythematosus, knee osteoarthritis, chronic knee pain, chronic low back pain, polymyalgia rheumatica, and fibromyalgia. Clinical outcomes demonstrated effectiveness; however, studies with larger sample sizes are required to establish long-term outcomes.<sup>124</sup>

Duff et al. (2024) conducted a systematic review and meta-analysis of the efficacy of auricular vagus nerve stimulation (aVNS) for chronic and acute pain. The meta-analysis included 13 studies, which focused on chronic and postoperative pain. While aVNS was found to be an effective non-drug therapy, research was lacking on stimulation parameters and standardized treatment protocols. Longer follow-up periods were also noted as a future research need.<sup>125</sup>

Costa et al. (2024) also conducted a systematic review and meta-analysis of transcutaneous vagus nerve stimulation for both acute and chronic pain. Fifteen studies were included and focused on pain intensity as measured by numerical rating scales; six used transcutaneous auricular VNS (taVNS). Positive clinical outcomes were reported, and consistency among the studies showed support for taVNS. The authors noted a lack of RCTs to compare taVNS with a sham group. Specifically, more research is needed on the efficacy of treatments for chronic pain.<sup>126</sup>

## Service: Spinal Neurostimulator Electrode Array with an Integrated Neurostimulator

| CPT/HCPCS Code | Code Description                                                                                                                              | Conclusion  |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0784T          | Insertion or replacement of percutaneous electrode array, spinal, with integrated neurostimulator, including imaging guidance, when performed | Not Covered |
| 0785T          | Revision or removal of neurostimulator electrode array, spinal, with integrated neurostimulator                                               | Not Covered |

- A **spinal neurostimulator electrode array with an integrated neurostimulator** is not considered appropriate, as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Bolash et al. (2022) examined the effectiveness of the Freedom Spinal Cord Stimulator System (FSCSS) for the treatment of failed back surgery syndrome. The authors enrolled 39 patients who were implanted with up to 2 permanent, 8-contact neurostimulators comprising electrode arrays and separate receivers. The main outcome was defined as the percentage of patients with a greater than or equal to 50% decrease in the VAS pain intensity score from baseline to 6 months post-implantation. Out of the 39 participants, 33 experienced a greater than or equal to 50% decrease in VAS, which indicates that FSCSS decreased pain. However, the study examined only 39 patients and lacked a comparison group. Further analyses in larger randomized controlled trials (RCTs) are needed to obtain sufficient evidence for the use of a spinal neurostimulator electrode array with an integrated neurostimulator.<sup>127</sup>

Muskala and Vanquathem (2022) published a case report of 12 patients with chronic back and leg pain (CBLP). The case report examined the use of powered spinal cord stimulation for CBLP. The 12 patients were followed for 12 months after percutaneous implantation of an FSCSS system that comprised an electrode array and a separate receiver. VAS was collected as a measure of pain. The mean VAS score decreased from baseline to follow-up (6 or 12 months after baseline) from 8.94 to 2.62, which indicated that FSCSS implantation reduced pain. While the results supported the simultaneous use of electrode arrays and a separate receiver, the findings need to be replicated in stronger studies with larger sample sizes to ensure that the procedure is beneficial in larger populations.<sup>128</sup>

Medina-Pérez et al. (2023) published a case study of a 31-year-old male with a diagnosis of intractable left testicular and thigh pain associated with L2-L3 radiculopathy and post-surgical neuropathy of the genitofemoral nerve. The patient received a combination of a neurostimulator and an electrode, resulting in a 90% reduction in pain after 3 months and no adverse events. The case study supported the simultaneous use of electrodes and neurostimulation to reduce pain, though stronger evidence is required to support widespread clinical use.<sup>129</sup>

## Service: Percutaneous Injection of a Calcium-Based Biodegradable Osteoconductive Material (Proximal Femur)

| CPT/HCPCS Code | Code Description                                                                                                                       | Conclusion  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0814T          | Percutaneous injection of calcium-based biodegradable osteoconductive material, proximal femur, including imaging guidance, unilateral | Not Covered |

- **Percutaneous injection of a calcium-based biodegradable osteoconductive material (proximal femur)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

○ Not covered service.

Lun et al. (2024) analyzed the limitations of calcium sulfate for non-load-bearing bone defects. Despite the wide use of biomaterials due to their "superior biocompatibility, biodegradability, and non-toxicity," they have demonstrated a "low compressive strength and rapid degradation rate." Noted limitations include adequate mechanical strength to use calcium sulfate and biomaterials that are calcium-sulfate-based in areas that are load-bearing. Reported complications were related to the rapid absorption of calcium sulfate. The research lacked evidence on the properties of calcium sulfate, which could cause interactions or complications.<sup>130</sup>

Md Dali et al. (2023) conducted a narrative review of preclinical evidence on the osteogenic properties of calcium phosphate with synthetic materials. Calcium phosphate cement (CPC) was combined with biomimetic materials, chemical elements/compounds, or polymers. The study demonstrated increased bioactivity, biocompatibility, mechanical strength, and anti-washout properties when two or more synthetic materials were added to CPC. Additional findings demonstrated the need for research on in vitro and in vivo studies to establish the effectiveness of CPC composites.<sup>131</sup>

Amin et al. (2022) presented a case report of a 40-year-old male who underwent CPC for a cephalomedullary nail that was removed. At 3-weeks postoperative, the patient sustained a non-traumatic subcapital femoral neck fracture. The authors noted that the current literature lacks studies on the use of CPC after hardware removal.<sup>132</sup>

# Service: Ultrasound-Based Radiofrequency Echographic Multi-Spectrometry (REMS) Bone-Density Studies and Fracture-Risk Assessments

| CPT/HCPCS Code | Code Description                                                                                                                                                | Conclusion  |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0815T          | Ultrasound-based radiofrequency echographic multi-spectrometry (REMS), bone-density study and fracture-risk assessment, 1 or more sites, hips, pelvis, or spine | Not Covered |

- **Ultrasound-based radiofrequency echographic multi-spectrometry (REMS) bone-density studies and fracture-risk assessments** are not considered appropriate, as they are clinically unproven and not medically necessary. There is inconclusive evidence of their effectiveness.

○ Not covered service.

The US Preventive Services Task Force (USPSTF) published a 2025 recommendation, Screening for Osteoporosis to Prevent Fractures. Central dual-energy absorptiometry (DXA) was stated to be the established standard for osteoporosis screening. There was no discussion of ultrasound-based radiofrequency echographic multispectrometry (REMS) in the recommendation. The committee recommended additional research on the harms and benefits, as well as on different screening methods.<sup>133</sup>

Al Refaie et al. (2023) examined the current use of ultrasound-based radiofrequency echographic multi-spectrometry (REMS) in the assessment of bone status. They stated that DXA was the most commonly used method for assessing bone mineral density (BMD); however, screening modalities that do not use ionizing radiation are being studied for early diagnosis. REMS was reported to show promise for qualitative assessment of bone density. Future and ongoing research was stated to increase understanding of utility.<sup>134</sup>

In a 2025 prospective observational study, Adami et al. enrolled 1516 women aged 30 to 90 years, of whom 1370 completed the study. In the follow-up period, 14.0% of clinical fragility fractures occurred. Women who suffered a fragility fracture were older and shorter in height than other study participants. A high correlation between vertebral DXA and REMS T-score values was observed. In discussion, future demographic changes are expected to increase the incidence of osteoporotic fragility fractures, necessitating prevention and early detection. Further studies were recommended.<sup>135</sup>

# Service: Intraoperative Therapeutic Electrical Stimulation (TES)

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                     | Conclusion  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0882T          | Intraoperative therapeutic electrical stimulation of peripheral nerve to promote nerve regeneration, including lead placement and removal, upper extremity, minimum of 10 minutes; initial nerve (List separately in addition to code for primary procedure)         | Not Covered |
| 0883T          | Intraoperative therapeutic electrical stimulation of peripheral nerve to promote nerve regeneration, including lead placement and removal, upper extremity, minimum of 10 minutes; each additional nerve (List separately in addition to code for primary procedure) | Not Covered |

- **Intraoperative therapeutic electrical stimulation (TES)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Liu et al. (2024) reviewed the use of electrical stimulation for peripheral nerve regeneration. There were no studies with human subjects that have assessed the reconstruction of a nerve gap using electrical stimulation. The authors stated that the device's cost, increased operative time, and anesthesia concerns may negate any potential clinical benefits. Due to a lack of high-quality published studies, the evidence did not support TES for nerve regeneration.<sup>136</sup>

Ni et al. (2023) assessed studies on TES for peripheral nerve injury. While some positive clinical outcomes were demonstrated, the authors noted that TES could limit nerve regeneration, decrease muscle excitability, and exacerbate muscle atrophy. Research needs included electrical stimulation-induced brain activity and potential side effects of treatment, as well as neurological recovery following treatment. Larger studies were also noted as a need to demonstrate increased pain relief, muscle mass, and strength.<sup>137</sup>

EIAbd et al. (2022) reviewed the role of electrical stimulation for peripheral nerve generation. Nine studies were included - four randomized controlled trials (RCTs), three case series, and two case reports. Noted complications included bone formation, skin pigmentation, and wire remnant removal. Finally, standardization of stimulation parameters was necessary to provide therapy universally.<sup>138</sup>

## Service: Placement of a Bone Marrow Sampling Port

| CPT/HCPCS Code | Code Description                                                                  | Conclusion  |
|----------------|-----------------------------------------------------------------------------------|-------------|
| 0901T          | Placement of bone marrow sampling port, including imaging guidance when performed | Not Covered |

- **Placement of a bone marrow sampling port** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

○ Not covered service.

The Portomar TM bone marrow sampling port is currently undergoing clinical trials. No current published study results were found in a literature search.<sup>139</sup>



## Service: Orthopedic Implant Movement Analysis

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                   | Conclusion  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 0946T          | Orthopedic implant movement analysis using paired computed tomography (CT) examination of the target structure, including data acquisition, data preparation and transmission, interpretation and report (including CT scan of the joint or extremity performed with paired views) | Not Covered |

- **Orthopedic implant movement analysis** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.
  - Not covered service.

Wretenberg et al. (2021) examined the use of implant movement analysis (IMA) for diagnosing aseptic loosening in total knee arthroplasty (TKA). The observational study included 40 patients with uncertain aseptic loosening, evaluated using complementary techniques, including detection of radiolucent lines on planar radiography, IMA, and varus-valgus provocation. Results included radiolucent lines in 22 of 40 knees and loosening in 8 knees. No loosening was found in the 17 knees without radiolucent lines. The group concluded that the short-term experience with IMA is promising.<sup>140</sup>

In a 2025 retrospective review, Listopadzki et al. examined CT with implant movement analysis (CT-IMA) in the work-up of painful total hip prostheses. Eighty patients with painful hip implants received plain radiographs and CT-IMA. Results included 66 patients placed in the radiographically stable-IMA stable group (Group 1), six in the radiographically loose-IMA stable group (Group 2), and eight in the radiographically loose-IMA loose group (Group 3). Hip Disability and Osteoarthritis Outcome Score - Joint Replacement (HOOS, JR) improved in Group 1 from 49.5 to 64.2, Group 2 from 57.7 to 69.1, and 45.5 to 71.8 in Group 3. The authors concluded that CT-IMA could have value in decision-making for revision surgery.<sup>141</sup>

Van de Vusse et al. (2025) conducted a systematic review regarding the accuracy and precision of CT-based radiostereometric analysis (CT-RSA) in arthroplasty. Of the 527 studies evaluated, 23 (163 patients) met the inclusion criteria (written in English, used CT for post-arthroplasty migration analysis, etc.). CT-RSA techniques included examination of the spine, shoulder, hip, and knee. The group concluded that the evidence showed promise for CT-RSA in the evaluation of prosthetic joint migration, and recommended future research with a focus on low-dose CT protocols.<sup>142</sup>

## Service: Thumb Carpometacarpal (CMC) Arthroplasty

| CPT/HCPCS Code | Code Description                                                                                                                                              | Conclusion  |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 1003T          | Arthroplasty, first carpometacarpal joint, with distal trapezial and proximal first metacarpal prosthetic replacement (eg, first carpometacarpal total joint) | Not Covered |

- **Thumb carpometacarpal (CMC) arthroplasty** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness. This includes using paired computed tomography (CT) examination of the target structure (i.e., data acquisition, data preparation, and transmission).

○ Not covered service.

Hammarstedt et al. (2025) conducted a review of surgical treatment for CMC arthroplasty for the arthritic thumb. The authors found no superiority over various surgical options to improve pain, function, strength, and range of motion. Research was not sufficient on minimally invasive techniques and long-term outcomes. Further research was also needed on better outcome measures to adequately assess hand function.<sup>143</sup>

Simón-Pérez et al. (2024) conducted an observational cohort study with 221 patients. The authors sought to establish the association between trapezium size and failure of total trapeziometacarpal prosthesis. Prosthesis removal was required in 15 patients - this included nine patients with trapezium cup loosening and six with prosthesis dislocation. A major limitation of the study included the measurement of trapezium size (on two-dimensional radiographs versus three-dimensional computed tomography [CT]).<sup>144</sup>

Farkash et al. (2023) performed a multicenter retrospective study of two modern implant designs and the complication and failure rate of thumb CMC arthroplasty. A total of 381 patients were enrolled at six hospitals. Noted complications were infections, dislocations, fractures, nerve and tendon injuries, and complex regional pain syndrome (CRPS). Minor adverse events were reported in 25% of patients - transient irritation of the superficial radial nerve and De Quervain tendinopathy were listed as the most common events.<sup>145</sup>

## Service: Percutaneous Decompression

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                                                                          | Conclusion                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 62287          | Decompression, percutaneous, of nucleus pulposus of intervertebral disc, any method utilizing needle-based technique to remove disc material under fluoroscopic imaging or other form of indirect visualization, with discography and/or epidural injection(s) at the treated level(s), when performed, single or multiple levels, lumbar | Not Covered                                                                                  |
| 62330          | Decompression, percutaneous, with partial removal of the ligamentum flavum, including laminotomy for access, epidurography, and imaging guidance (ie, CT or fluoroscopy), bilateral; one interspace, lumbar                                                                                                                               | Commercial Not Covered; for Medicare Advantage use CMS National Coverage Determination (NCD) |
| 62331          | Decompression, percutaneous, with partial removal of the ligamentum flavum, including laminotomy for access, epidurography, and imaging guidance (ie, CT or fluoroscopy), bilateral; additional interspace(s), lumbar (List separately in addition to code for primary procedure)                                                         | Commercial Not Covered; for Medicare Advantage use CMS National Coverage Determination (NCD) |

- **Percutaneous decompression** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

- Not covered service.

Karlsson et al. (2024) conducted a randomized clinical trial to compare 5-year outcomes after decompression alone and decompression with fusion for the treatment of lumbar spinal stenosis. The 5-year ODI scores were similar across treatments, and the EuroQol five-dimension questionnaire was higher with decompression alone than with decompression and fusion. These results indicated that adding fusion to decompression surgeries may not improve patient outcomes 5 years post-surgery, findings consistent with those reported at the two-year time point. The authors concluded that decompression alone is preferred for spinal stenosis surgery.<sup>146</sup>

Wei et al. (2021) conducted a systematic review and network meta-analysis evaluating the nine most common interventions for lumbar spinal stenosis: laminectomy, laminotomy, minimally invasive decompression, endoscopic decompression, decompression plus fusion, decompression, split-decompression, interspinous process spacer device, and non-surgical. All surgical interventions, except split-decompression, were more effective at relieving pain than non-surgical interventions. Laminotomy was best for improving short- and long-term dysfunction, although differences were not statistically significant, and endoscopic decompression had the lowest complication rates and shortest hospitalization time.<sup>147</sup>

In a retrospective database study of 7315 patients, Huynh et al. (2017) reviewed spinal decompression and discectomy procedures in children. It was noted that conditions requiring such procedures, including spinal stenosis/spondylosis and disc herniation, are less often seen in children than in adults. The authors also stated that children with these conditions are often less responsive to conservative management strategies, including exercise, physical therapy, and pharmacological pain control, compared to adults. The mean patient age was 12.7 years for pediatric spondylolysis/spinal stenosis and 18 years for pediatric disc herniation. For patients with pediatric spondylolysis/spinal stenosis, complication rates were higher after decompression (18.1%) than after discectomy (5.3%) procedures. Length of hospital stay was also longer in pediatric spondylolysis/spinal stenosis patients treated with decompression compared to discectomy (5 vs. 1.7 days).<sup>148</sup>

## Service: Laminotomy (Hemilaminectomy) with Decompression of Nerve Root(s)

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                                                                                                         | Conclusion  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 63032          | Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; with repair of annular defect by implantation of bone-anchored annular closure device, including all imaging guidance, 1 interspace, lumbar (List separately in addition to code for primary procedure) | Not Covered |

- **Laminotomy (hemilaminectomy) with decompression of nerve root(s)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

○ Not covered service.

Zhao et al. (2025) conducted a retrospective analysis of 65 patients with two-level lumbar spinal stenosis (LSS) that evaluated the feasibility of bilateral synchronous unilateral biportal endoscopy followed by unilateral laminotomy and bilateral decompression (BS-UBE-ULBD). There were no postoperative complications, and all surgeries were deemed successful. Student t-tests were conducted to evaluate the VAS and ODI to compare postoperative pain and disability 1 week and 6 months after surgery, respectively. The authors found that lumbar VAS, leg VAS, and ODI at 6 months were significantly lower than at 1 week post-surgery ( $p < 0.05$ ), indicating that the procedure did improve clinical symptoms. While this is promising, a small sample size of 65 patients limits generalizability. Additionally, this procedure includes UBE in addition to unilateral laminotomy and bilateral decompression, and the sole combination of unilateral laminotomy and bilateral decompression was not evaluated. Thus, future research is needed to confirm the efficacy of this procedure.<sup>148</sup>

Wei et al. (2021) conducted a meta-analysis of randomized controlled trials (RCTs) evaluating different interventions for LSS. The main outcomes of interest were pain intensity and disability. In the analysis, 34 RCTs were included; none of the analyses included laminotomy in combination with partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc. The lack of evidence for this combination of procedures indicated that more RCTs are needed to evaluate their efficacy.<sup>147</sup>

Sidronio and Kumar (2021) published a case report of a patient with ossification of the ligamenta flava (OLF). In the case report, the patient presented with a 6-year history of an inability to walk more than a few steps due to severe chronic lumbago with neurogenic claudication. As a result, the patient underwent endoscopic intralaminar laminotomy with partial facetectomy and lateral recess decompression. The patient immediately reported improvement in radicular symptoms and was neurologically intact 9 days postoperatively. Overall, the endoscopic intralaminar laminotomy with partial facetectomy and lateral recess decompression was successful in treating OLF, though this was evaluated in a single case, and replication is needed to thoroughly assess the procedure's efficacy.<sup>149</sup>

# Service: Radiofrequency Ablation (RFA) of the Sacroiliac Joint

| CPT/HCPCS Code | Code Description                                                                                                               | Conclusion  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------|-------------|
| 64624          | Destruction by neurolytic agent, genicular nerve branches including imaging guidance, when performed                           | Not Covered |
| 64625          | Radiofrequency ablation, nerves innervating the sacroiliac joint, with image guidance (ie, fluoroscopy or computed tomography) | Not Covered |

- **Radiofrequency ablation (RFA) of the sacroiliac joint** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

- Not covered service.

Loh et al. (2022) conducted an observational study evaluating changes in sacroiliac joint pain (SJP) following ultrasound-guided RFA. In 31 participants, the authors found statistically significant differences in mean measures of the numeric rating scale (NRS) component of The Pain, Disability, Quality of Life Questionnaire-Spine (PDQQ-S) scale ( $p = 0.0005$ ) when comparing baseline to 9-month follow-up, such that there was a lower mean NRS component 9 months after RAF. While these preliminary findings were promising, they did not use fluoroscopy or CT as the imaging guidance modality, and the sample size was very small. Thus, replication was deemed necessary to support the use of fluoroscopy or CT and to increase the generalizability of the results.<sup>150</sup>

Chou et al. (2021) conducted a cohort study to examine differences in RAF treatment for lower back pain (LBP), defined as either facet joint pain or SJP, between Technetium Tc99m methylene diphosphonate single photon emission tomography/CT-identified and modified Fortin finger test (FFT)-identified LBP. The VAS was used to determine the patient's pain level. The authors used generalized estimating equations to estimate changes in VAS over time, adjusting for age, gender, and body mass index. Of the 40 patients, those with imaging-diagnosed pain had significantly lower mean pain scores at 1 week, 1 month, 3 months, and 6 months post-treatment than those with FFT-diagnosed pain, suggesting that Technetium Tc99m methylene diphosphonate single photon emission tomography/CT improved RAF treatment. However, the small sample size reduced the robustness of the results, and the inclusion of patients with facet joint pain limited generalizability to patients with only SJP. Replicated analyses in larger cohorts are warranted.<sup>151</sup>

Lowe et al. (2022) conducted a systematic review of a randomized controlled trial (RCT) that examined both the use of RFA for SJP and the quality of the research. Of the 16 trials reviewed, 15 supported RFA. The one trial that did not support its use contained the largest sample size; however, it also had the highest risk of bias due to missing information, no single- or double-blinding, and differential dropout rates. The authors also noted that a definitive, large-scale RCT has not been conducted and that evidence supporting the use of RFA beyond 1 year is lacking, underscoring the need for larger-scale RCTs with longer follow-up.<sup>152</sup>

## Service: Percutaneous Implantation of a Neurostimulator Electrode Array (Sacral Nerve)

| CPT/HCPCS Code | Code Description                                                                                                                             | Conclusion  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 64561          | Percutaneous implantation of neurostimulator electrode array; sacral nerve (transforaminal placement) including image guidance, if performed | Not Covered |

- **Percutaneous implantation of a neurostimulator electrode array (sacral nerve)** is not considered appropriate as it is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

○ Not covered service.

Pikov et al. (2023) conducted a systematic review that evaluated vagus nerve stimulation (VNS) and sacral nerve stimulation (SNS) with either implantable or transcutaneous electrodes in patients with inflammatory bowel disease (IBD). The authors, interested in efficacy, potential mechanisms, and safety, identified two studies evaluating SNS and only one that used percutaneous SNS electrodes. In the study, 26 adult patients were evaluated, and the authors found that, in the SNS arm, inflammatory blood biomarkers and ulcerative colitis disease activity were significantly reduced compared with those without SNS stimulation, suggesting a potential utility of SNS in reducing IBD symptoms. However, the authors found only one study that evaluated this, which included only 26 participants; further evidence is necessary to support this claim.<sup>153</sup>

Wang et al. (2025) conducted a systematic review to evaluate the effectiveness of current electrical neuromodulation techniques for IBS. In this review, the authors selected 18 articles that met the review criteria, 5 of which examined invasive SNS. The 5 studies had sample sizes ranging from 6 to 21 and consisted of randomized controlled trials (RCTs), descriptive follow-up, and uncontrolled study designs. Overall, the study results were mixed, with some showing that SNS resulted in positive effects on IBS symptoms and others showing no effect. This review highlighted the heterogeneity in the literature regarding the effectiveness of SNS and the need for larger RCTs and meta-analyses examining the use of percutaneous sacral nerve neurostimulation.<sup>154</sup>

Fagundes et al. (2026) published a case report of a 27-year old female with chronic urinary symptoms ranging in frequency and severity. The patient had undergone prior unsuccessful treatments, so the care team implanted two percutaneous electrodes to stimulate the sacral nerve. The implantation was deemed successful, as it resulted in reduced average voiding residue, UTIs, and bladder catheterizations, and improved the patient's quality of life. Overall, the case report highlighted the potential utility of percutaneously implanted electrode neurostimulators in the sacral nerve; however, higher-quality studies are needed to demonstrate their widespread utility.<sup>155</sup>



## Service: Unlisted Codes

| CPT/HCPCS Code | Code Description                                    | Conclusion                                                                                                                                                                                                                                                                                                                                                                   |
|----------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20999          | Unlisted procedure, musculoskeletal system, general | See Cervical Spinal Fusion, Lumbar Spinal Fusion, or Sacroiliac Joint Fusion for covered indications. Not covered for all other indications.                                                                                                                                                                                                                                 |
| 22899          | Unlisted procedure, spine                           | See Cervical Spinal Fusion, Lumbar Spinal Fusion, Facet Joint Allograft Implants, Facet Joint Radiofrequency Ablation (RFA), Kyphectomy, Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy), Pediatric Vertebral Body Tethering, Vertebral Body Tethering, or Vertebral Corpectomy for covered indications. Not covered for all other indications. |
| 23929          | Unlisted procedure, shoulder                        | See Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder), Shoulder Arthroplasty, or Shoulder Arthroscopy for covered indications. Not covered for all other indications.                                                                                                                                                                                                   |
| 27299          | Unlisted procedure, pelvis or hip joint             | See Hip Arthroscopy, Hip Core Decompression with or without Bone Grafting, Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder), or Periacetabular Osteotomy/Surgical Dislocation for covered indications. Not covered for all other indications.                                                                                                                          |
| 27599          | Unlisted procedure, femur or knee                   | See Knee Arthroplasty, Knee Arthroscopy, or Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder) for covered indications. Not covered for all other indications.                                                                                                                                                                                                           |
| 28899          | Unlisted procedure of foot and toes                 | See Hammertoe, Claw Toe, or Mallet Toe Surgical Treatment with or without Fusion for covered indications. Not covered for all other indications.                                                                                                                                                                                                                             |
| 29999          | Unlisted procedure, arthroscopy                     | See Hip Arthroscopy, Knee Arthroscopy, Knee Arthroscopy, or Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder) for covered indications. Not covered for all other indications.                                                                                                                                                                                           |
| 64999          | Unlisted procedure, nervous system                  | See Carpal Tunnel Release, Epidural Steroid Injections (ESI), Facet Joint Injections, or Facet Joint Radiofrequency Ablation (RFA) for covered indications. Not covered for all other indications.                                                                                                                                                                           |

|       |                                                                  |                                                                                                       |
|-------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| 97039 | Unlisted modality (specify type and time if constant attendance) | See Physical and Occupational Therapy for covered indications. Not covered for all other indications. |
| 97139 | Unlisted therapeutic procedure (specify)                         | See Physical and Occupational Therapy for covered indications. Not covered for all other indications. |
| 97799 | Unlisted physical medicine/rehabilitation service or procedure   | See Physical and Occupational Therapy for covered indications. Not covered for all other indications. |

- Unlisted code use outside of covered policies listed above is considered not covered due to **ANY** of the following:
  - A more specific code exists; **OR**
  - Insufficient documentation; **OR**
  - The procedure is considered experimental and investigational; **OR**
  - A code has been improperly bundled.

Childers et al. (2024) conducted a systematic review of six studies with 123 patients with rotator cuff injuries treated with tuberopecty. The range of active forward flexion and abduction postoperatively was 131° to 165°, and 123° to 160°, respectively. Acromiohumeral distance changed from -1 mm to -0.6 mm. The authors noted that reoperation rates ranged from 0% to 19%. Future suggested research should include larger study sizes and comparison groups to better determine safety and efficacy.<sup>156</sup>

Seo et al. (2023) analyzed 18 cases of simultaneous arthroscopic biologic tuberopecty and bursal acromial reconstruction. Improvement was demonstrated in VAS and ASES scores, as well as the range of motion. Radiographic imaging showed an improved acromiohumeral distance ( $4.3 \pm 4.1$  mm preoperative to  $9.2 \pm 1.9$  mm one year postoperative [ $p < 0.001$ ]). Study limitations included small size, bias, and generalizability of results. The authors noted that future studies with longer-term follow-up would establish safety and efficacy.<sup>157</sup>

The AAOS (2019) guideline for the management of rotator cuff injuries did not specifically mention tuberopecty.<sup>35</sup>

Wei et al. (2023) conducted a retrospective cohort study for hip core decompression with Association Research Circulation Osseous (ARCO) stage I-II osteonecrosis of the femoral head (ONFH). A total of 1537 hips were included in the study. The core decompression failure rate was 52%. A scoring system was developed to assist surgeons with clinical decisions. Seven indicators of failure included male sex, etiology (idiopathic or steroid-induced), seated occupation, hemoglobin level, disease duration, and combined necrosis angle. Limitations included surgeon-specific bias (single-center study) and the risk of patient recall bias of their history of ONFH. Further, the authors stated that a prospective cohort is needed to validate model accuracy.<sup>158</sup>



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# Policy Revision History/Information

| Clinical Policy Version | Date       | Review History |
|-------------------------|------------|----------------|
| Version 1               | 04/09/2026 | New Policy.    |



## **Cohere Medical Policy – Open Meniscus Repair**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 2  
**Revision Date:** February 20, 2025

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy – Open Meniscus Repair

**Date of last literature review:** 2/18/2025

**Document last updated:** 2/18/2025

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)

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# Medical Necessity Criteria

## ***Service: Open Meniscus Repair***

### **Recommended Clinical Approach**

Open meniscus repair is a surgical procedure in which an incision is made behind the collateral ligaments of the knee to repair a peripheral or nearly peripheral tear. The procedure is not recommended for tears more than 1-2 mm beyond the meniscosynovial junction, as such lesions are better suited to arthroscopic repair. While open meniscus repair has almost entirely been replaced by arthroscopic meniscus repair, open repair may still be useful when a complex posterior horn tear is difficult to access otherwise.<sup>1-4</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ **Open meniscus repair** is considered appropriate if **ANY** of the following is **TRUE**<sup>5-7</sup>:

- ◆ Meniscus tear in young, active patient<sup>8</sup>; **OR**
- ◆ **ALL** of the following is **TRUE**:
  - The patient has **ANY** of the following:
    - Mechanical symptoms following an acute tear; **OR**
    - A chronic tear, and **ALL** of the following:
      - ◆ Persistent mechanical symptoms; **AND**
      - ◆ Documented failure (including detailed evidence of the measures taken) of conservative management (e.g., rest, analgesics, physical therapy, home exercise program, oral or injectable corticosteroids); **OR**
  - The tear is a recurrent tear or failed repair demonstrated on advanced imaging;<sup>1</sup> **AND**
  - Limited activities of daily living (ADLs) due to pain and mechanical symptoms; **AND**
  - The patient has **ANY** of the following advanced imaging findings:<sup>1</sup>
    - Meniscus tear in a young, active patient<sup>8</sup>; **OR**
    - Unstable tears, such as bucket handle and double longitudinal tears; **OR**

- Isolated simple-pattern meniscus tears in stable knees; **OR**
- Posteromedial and posterolateral root tears; **OR**
- Longitudinal tears greater than 10 millimeters (mm); **OR**
- Tears primarily in the vascular zones of the meniscus; **OR**
- Acute traumatic meniscal tear<sup>1</sup>

### Non-Indications

→ **Open meniscus repair** is not considered appropriate if **ANY** of the following is **TRUE**:<sup>9</sup>

- ◆ Degenerative tears; **OR**
- ◆ Isolated meniscus repair in an unstable knee<sup>10-12</sup>; **OR**
- ◆ Osteoarthritis of the knee (moderate, severe, or KL grade III or IV).<sup>13,14</sup>

### Level of Care Criteria

Inpatient or Outpatient

### Procedure Codes (HCPCS/CPT)

| HCPCS/CPT Code | Code Description                      |
|----------------|---------------------------------------|
| 27403          | Arthrotomy with meniscus repair, knee |

## Medical Evidence

Kopf et al. (2020) examined management of traumatic meniscus tears through an expert consensus process, and determined that preservation of the meniscus should be the first line of treatment when possible. Clinical and radiological long-term outcomes are worse after partial meniscectomy as opposed to meniscus preservation. They also concluded that meniscus repair types that were previously considered irreparable (older tears, tears in obese patients, long tears, etc.) should be repaired.<sup>1</sup>

Maffulli et al. (2010) concluded that in meniscal tears, meniscal tissue should be preserved whenever possible. When repair is not possible, partial meniscal resection would be indicated, as well as consideration of meniscal transplantation.<sup>2</sup>

Carreau et al. (2017) systematically evaluated the literature regarding sub-acute root tears with medial meniscal extrusion in middle-aged patients. Previously, repair was recommended in younger, more active patient populations, though such injuries are more common in the middle-aged. These patients typically present with co-existing arthritis and treatment should be based on the severity. When there is early or minimal arthritis, root repair can ideally restore meniscal function and improve symptoms.<sup>12</sup>

A systematic review conducted by Peterson et al. (2022) examined the long-term results of meniscus repair. The authors reviewed 12 retrospective case series that included either open or arthroscopic meniscus repair and at least 7 years of follow-up data. No statistical difference was found between the failure rates of open repair, arthroscopic inside-out with posterior incisions, or arthroscopic all-inside repair with flexible non-resorbable implants. However, the authors noted that the failure rate of meniscal repair in studies with children and adolescents was significantly higher than in studies that included only adults.<sup>15</sup>



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# Clinical Guideline Revision History/Information

Original Date: December 29, 2023

## Review History

|           |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version 2 | 2/20/2025 | <ul style="list-style-type: none"> <li>• Annual Review</li> <li>• Replaced General Guidelines section with Recommended Clinical Approach.</li> <li>• Updated conservative care language to reflect standard MSK policy language.</li> <li>• In the indication, "Limited activities of daily living (ADLs) due to pain and instability," "instability" has been replaced by "mechanical symptoms."</li> <li>• Deleted "Tight medial compartment and posterior open approach is indicated" indication, as tight medial compartment pathology is now typically addressed with an arthroscopic "pie-crusting" technique of the MCL.</li> <li>• The conservative care language in the indications has been replaced with "Failure of conservative management (e.g., rest, analgesics, physical therapy, home exercise program, oral or injectable corticosteroids)."</li> <li>• Added a recent systematic review (Peterson et al. 2022) to the Medical Evidence section.</li> <li>• Included indication for meniscus tear in young, active patient.</li> <li>• Added references 2, 3, and 13.</li> </ul> |
|-----------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## **Cohere Medical Policy - Open Shoulder Surgical Procedures**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 3  
**Revision Date:** May 22, 2025

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy – Open Shoulder Surgical Procedures

**Date of last literature review:** 5/12/2025

**Document last updated:** 5/19/2025

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## **Service: Open Shoulder Surgical Procedures**

### **Description**

Open shoulder surgical procedures involve one or more procedures, including rotator cuff repair with or without allograft augmentation, distal clavicle resection, subacromial decompression, open Bankart repair, capsular shift, or coracoid transfers. To access the shoulder joint, an incision of approximately 5 centimeters is made; this is in contrast to arthroscopic shoulder procedures, wherein multiple smaller incisions are used alongside arthroscopic tools to access the shoulder. Open shoulder surgical procedures are used to treat various problems with the shoulder, such as tendon and ligament injuries, shoulder instability, and bone damage, as well as when there are numerous coexisting shoulder pathologies, and when there is a high likelihood that arthroscopic surgery will fail or provide incomplete visualization.<sup>1</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ **Open shoulder surgical procedures** are considered appropriate if **ANY** of the following is **TRUE**:

◆ **Open rotator cuff repair with or without allograft augmentation** is considered appropriate if **ANY** of the following is **TRUE**<sup>2</sup>:

- Acute rotator cuff tear with **ALL** of the following after an inciting event or injury:
  - **ANY** of the following positive exam findings<sup>3-4</sup>:
    - ◆ Documentation of Subscapularis injury (internal rotator [IR] weakness, Belly-press test, Bear hug test); **OR**
    - ◆ Documentation of Superspinatus and/or External rotation injury (Jobe/empty cast test, Drop arm test, Hornblower's sign); **AND**
  - Significantly impacted activities of daily living (ADLs); **AND**
  - Advanced imaging (e.g., magnetic resonance imaging [MRI], computed tomography [CT]) with

image report demonstrates a full-thickness rotator cuff tear (Cofield classification); **OR**

- Chronic rotator cuff tear with **ALL** of the following:
  - **AT LEAST TWO** positive findings from the following<sup>5</sup>:
    - ◆ Pain with overhead activities (lateral deltoid pain with activity); **OR**
    - ◆ Pain (lateral deltoid pain with sleep and sleep disruption); **OR**
    - ◆ Shoulder weakness (e.g., abduction, external rotation, internal rotation); **AND**
  - **ANY** of the following positive exam findings<sup>3-4</sup>:
    - ◆ Documentation of Subscapularis injury (internal rotator [IR] weakness, Belly-press test, Bear hug test); **OR**
    - ◆ Documentation of Superspinatus and/or External rotation injury (Jobe/empty cast test, Drop arm test, Hornblower's sign); **AND**
  - Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - ◆ Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - ◆ Physical therapy; **AND**
    - ◆ **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Corticosteroid injection is contraindicated; **AND**
  - Advanced imaging (e.g., MRI, CT) demonstrates evidence of **ANY** of the following:
    - ◆ High-grade partial-thickness rotator cuff tear; **OR**
    - ◆ Full-thickness rotator cuff tear (Cofield classification); **OR**
- ◆ **Open revision of a previous rotator cuff repair** is considered appropriate if **ANY** of the following is **TRUE**<sup>6</sup>:
  - Advanced imaging (e.g., MRI, CT) demonstrates evidence of a recurrent rotator cuff tear; **OR**



- Suspected postsurgical complication; **OR**
- ◆ **Open clavicle resection** is considered appropriate if **ANY** of the following are **TRUE**:
  - Tumor or malignancy requiring claviculectomy for surgical exposure<sup>7,8</sup>; **OR**
  - Intervention of the subclavian artery (e.g., subclavian artery aneurysm) requiring claviculectomy for surgical exposure<sup>9</sup>; **OR**
  - Central venous stenosis that persists after balloon angioplasty, requiring claviculectomy as an alternative to first rib resection for adequate venolysis<sup>10</sup>; **OR**
  - Osteomyelitis or osteitis<sup>11,12</sup>; **OR**
  - **ALL** of the following:
    - The patient has significant pain and/or functional impairment that impacts ADLs<sup>13</sup>; **AND**
    - Localized tenderness to palpation of the acromioclavicular (AC) joint<sup>14</sup>; **AND**
    - **ANY** of the following positive orthopedic tests on physical examination when compared to the non-involved side<sup>14</sup>:
      - Cross-body adduction test; **OR**
      - Resisted AC joint extension test; **AND**
  - Failure of conservative management for greater than 3 months including **ALL** of the following<sup>13,14,15</sup>:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy; **AND**
    - **ANY** of the following:
      - ◆ Corticosteroid injection if medically appropriate; **OR**
      - ◆ Corticosteroid injection is contraindicated; **AND**
  - Plain radiographs demonstrate **ANY** of the following findings consistent with pathology in the subacromial space or at the AC joint<sup>7</sup>:
    - Cystic formation in the distal clavicle; **OR**
    - Presence of osteophytes; **OR**

- Moderate to severe degenerative changes in the AC joint; **OR**

◆ **Subacromial decompression** is considered appropriate if **ANY** of the following is **TRUE**<sup>16</sup>:

- The procedure coincides with the indicated repair of a rotator cuff injury; **OR**
- The patient has history and exam consistent with subacromial impingement syndrome, including **ALL** of the following<sup>17</sup>:
  - Significant pain and/or functional impairment that impacts activities of daily living; **AND**
  - The patient demonstrates **ANY** of the following positive orthopedic tests on physical examination when compared to the non-involved side:
    - ◆ Neer impingement sign/test; **OR**
    - ◆ Hawkins-Kennedy impingement sign/test; **AND**
  - Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - ◆ Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - ◆ Physical therapy; **AND**
    - ◆ **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Corticosteroid injection is contraindicated; **AND**
  - Plain radiographs demonstrate **ANY** of the following findings consistent with pathology in the subacromial space:
    - ◆ Subacromial spurs/osteophytes; **OR**
    - ◆ Type III (hooked) acromion; **OR**
    - ◆ Acromioclavicular osteoarthritis with inferior osteophyte formation; **OR**

◆ **Arthrotomy with or without biopsy** is considered appropriate if **ANY** of the following is **TRUE**:

- Septic arthritis<sup>18-23</sup>; **OR**

- Pre-revision tissue biopsy prior to revision shoulder arthroplasty to evaluate for periprosthetic joint infection in the setting of a painful shoulder arthroplasty without clear evidence of infection<sup>24,25</sup>; **OR**
- Biopsy of lesion that is suspicious for tumor/neoplasm.<sup>26,27</sup>

## Non-Indications

→ **Open shoulder surgical procedures** are not considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Debridement, rotator cuff repair, and/or removal of intra-articular loose body is not considered to be indicated in the presence of Kellgren-Lawrence grade 3 or 4 osteoarthritis<sup>14</sup>; **OR**
- ◆ Use of subacromial balloon spacer to treat irreparable rotator cuff tear<sup>28</sup>; **OR**
- ◆ Presence of active infection<sup>29</sup>; **OR**
- ◆ Rotator cuff arthropathy.<sup>30</sup>

## Level of Care Criteria

Outpatient

## Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                              |
|----------------|-----------------------------------------------------------------------------------------------|
| 23100          | Arthrotomy, glenohumeral joint, including biopsy                                              |
| 23120          | Claviculectomy; partial                                                                       |
| 23125          | Claviculectomy; total                                                                         |
| 23130          | Acromioplasty or acromionectomy, partial, with or without coracoacromial ligament release     |
| 23410          | Repair of ruptured musculotendinous cuff (eg, rotator cuff) open; acute                       |
| 23412          | Repair of ruptured musculotendinous cuff (eg, rotator cuff) open; chronic                     |
| 23420          | Reconstruction of complete shoulder (rotator) cuff avulsion, chronic (includes acromioplasty) |

# Medical Evidence

The American Academy of Orthopaedic Surgeons (AAOS) published a 2019 guideline for the management of rotator cuff injuries. Regarding open vs. arthroscopic repair, a strong recommendation is given regarding supportive evidence for no difference in long-term (greater than one year) patient-reported outcomes or cuff healing rates. They state that the arthroscopic-only technique is associated with better short-term improvement in postoperative recovery of motion and function.<sup>14</sup>

In a 2017 prospective study, Jain et al. examined the diagnostic accuracy of special tests for rotator cuff tears. 208 participants, 45 years of age or older with shoulder pain of at least 4 weeks duration, were included in the study. Special tests that were performed included lift-off test, passive lift-off test, belly-press test, belly-off sign, bear hug, external rotation lag sign at 0°, external rotation lag sign at 90°, Hornblower's sign, full can test, drop arm test, Jobe's test, Neer's sign, Hawkins's sign, bicipital groove tenderness, and Speed's test. The tests were not always performed in the same order. Blind evaluations of MRI results were completed. In conclusion, it was determined that these tests are highly sensitive in diagnosing rotator cuff tears and may reduce reliance on expensive imaging in these cases.<sup>3</sup>

Barber et al. (2012) performed a prospective, randomized evaluation of acellular human dermal matrix augmentation for arthroscopic rotator cuff repair. Twenty-two patients in Group 1 and 20 patients in Group 2 were included. The mean age was 56 years. Group 1 underwent augmentation while Group 2 did not. Large tears greater than 3 cm were measured. The American Shoulder and Elbow Surgeons (ASES) scores in Group 1 were statistically better than Group 2, with intact repairs demonstrated in 85% of Group 1 and 40% in Group 2.<sup>31</sup>

Park et al. (2005) evaluated the diagnostic accuracy of clinical tests for the different degrees of subacromial impingement syndrome. Eight physical examination tests were used including "the Neer impingement sign, Hawkins-Kennedy impingement sign, painful arc sign, supraspinatus muscle strength test, Speed test, cross-body adduction test, drop-arm sign, and infraspinatus muscle strength test". The authors concluded that most tests for

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# Clinical Guideline Revision

## History/Information

| Original Date: December 29, 2023 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Version 2                        | 2/20/2025 | <ul style="list-style-type: none"> <li>• Annual review.</li> <li>• Updated conservative care language to match standardized MSK conservative care requirements, specifically changing "oral steroids or anti-inflammatory medication" to "anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated".</li> <li>• Literature review, 6 references added to the Indications section: Fares et al. (2023), Cobb et al. (2022), Coghlan et al. (2019), Läderrmann et al. (2016), Karjalainen et al. (2019), and Salunkhe et al. (2024).</li> </ul> |
| Version 3                        | 5/22/2025 | <p>Added total claviclectomy code, as well as four additional indications to address this code (malignancy, subclavian access, central venous stenosis, osteomyelitis) and the corresponding references</p> <p>Removed redundant indication for subacromial decompression</p> <p>Removed impingement tests from open claviclectomy indication as not relevant to testing for AC joint pain</p> <p>Added arthrotomy/biopsy code, as well as three indications to address this code (septic arthritis, pre-revision biopsy, tumor biopsy)</p> <p>Simplified positive exam criteria for rotator cuff injury to improve ease of policy use</p>                   |



# **Cohere Medical Policy – Outpatient Speech Therapy**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 2  
**Revision Date:** May 1, 2025

# Important Notices

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## Policy Information:

**Specialty Area:** Speech Language Pathology

**Policy Name:** Cohere Medical Policy - Outpatient Speech Therapy

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Outpatient Speech Therapy***

### **Description**

Treatment requires the judgment, knowledge, and skills of a licensed and certified speech-language pathologist who meets generally accepted standards of practice and is targeted and effective in treating the individual's diagnosed impairment or condition. Treatment is expected to produce clinically significant and measurable improvement in the member's level of functioning within a medically reasonable period of time; alternatively, the treatment is part of a medically necessary program to prevent significant functional regression.

### **Medical Necessity Criteria**

#### **Indications**

**Outpatient speech therapy** is considered appropriate if **ALL** of the following are **TRUE**:

- Speech therapy services are provided by a licensed and appropriately credentialed speech/language professional acting within the applicable scope of practice for the jurisdiction where services are provided, allowing for care rendered under the direct supervision of an ancillary speech/language pathologist as permitted under state law(s);  
**AND**
- Symptoms with **ANY** of the following:
  - Changes following a period of chronic or stable symptoms; **OR**
  - Recent diagnosis; **AND**
- **ANY** of the following:
  - Treatment is for **ANY** of the following:
    - Aphasia<sup>1-6</sup>; **OR**
    - Acquired apraxia<sup>7</sup>; **OR**
    - Cognitive-communication disorders; **OR**
    - Developmental language or speech disorders\* as evidenced by **ANY** of the following<sup>8,9</sup>:

- A speech disorder with impairment of **ANY** of the following:
  - Articulation of speech sounds; **OR**
  - Fluency; **OR**
  - Voice; **OR**
- A language disorder with impaired comprehension and/or use of spoken, written and/or other symbol systems (e.g., the form of language [phonology, morphology, syntax], the content of language [semantics], and/or the function of language in communication [pragmatics] in any combination); **OR**
- Dysarthria<sup>10</sup>; **OR**
- Dysphagia<sup>11</sup>; **OR**
- Voice disorders including **ANY** of the following<sup>12</sup>:
  - Physiological voice disorders that result from alterations in respiratory, laryngeal, or vocal tract mechanisms; **OR**
  - Organic voice disorders that result from **ANY** of the following:
    - Physical changes in the vocal mechanism, such as alterations in vocal fold tissues (e.g., edema or vocal nodules) and/or structural changes in the larynx due to aging; **OR**
    - Problems with the central or peripheral nervous system innervation to the larynx that affect the functioning of the vocal mechanism (e.g., vocal tremor, spasmodic dysphonia, or vocal fold paralysis); **OR**
  - Voice disorders that result from inefficient use of the vocal mechanism when the physical structure is normal (e.g., vocal fatigue, muscle tension dysphonia or aphonia, diplophonia, or ventricular phonation); **OR**
- **ANY** of the following services:
  - Screening of **ANY** of the following<sup>13</sup>:
    - Speech; **OR**
    - Language; **OR**
    - Dysphagia; **OR**

- Re-evaluation with **ALL** of the following:
  - Progress is expected if therapy resumes; **AND**
  - Documentation supports the need for further tests and measurements after the initial evaluation; **AND**
  - Indications for a re-evaluation include **ANY** of the following new clinical findings:
    - A significant change in the patient's condition; **OR**
    - Failure to respond to the therapeutic interventions outlined in the plan of care; **OR**
    - The patient is being discharged for **ANY** of the following:
      - To determine whether goals have been met; **OR**
      - For the use of the physician or the treatment setting at which treatment will be continued; **OR**
- Continued coverage when the patient meets **ALL** of the following:
  - Compliant and active in therapy; **AND**
  - Demonstrates significant improvement that will benefit long-term therapy goals; **AND**
  - Functional progress is demonstrated; **AND**
  - Skills are being utilized in the patient's natural environment; **AND**
  - Re-evaluation is completed annually (every 12 months) to confirm progress and level of function to necessitate continuation of therapy; **AND**
  - Deficiencies are identified by comparing results from previous evaluations with more recent results; **AND**
  - Therapy goals are unmet and additional therapy is medically necessary; **OR**
- Therapeutic services related to the use of a non-speech generating device (SGD) for **ANY** of the following:
  - Programming of a device; **OR**
  - Modification of a device; **OR**
  - Services for a patient who is non-verbal or does not have the capacity for verbal communication; **OR**



- Development of operational competence in using an SGD or aids (e.g., customizing features of the device to meet specific communication needs); **OR**
- Auditory rehabilitation following cochlear implant (including hearing and therapeutic services with or without speech processor programming performed by an audiologist) with **ANY** of the following:
  - Extensive auditory rehabilitation therapy that focuses on audition, cognition, language, and speech skills (including suprasegmental aspects) to improve the patient's ability to discriminate and exhibit improvements in speech (e.g., manner, place, and voicing); **OR**
  - Family member or caregiver training for auditory-verbal techniques.

## Non-Indications

**Outpatient speech therapy** is not considered appropriate if **ANY** of the following is **TRUE**:

- State-specific criteria do not allow coverage.

## Level of Care Criteria

Outpatient

## Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                       |
|----------------|------------------------------------------------------------------------------------------------------------------------|
| 92507          | Treatment of speech, language, voice, communication, and/or auditory processing disorder; individual                   |
| 92508          | Treatment of speech, language, voice, communication, and/or auditory processing disorder; group, 2 or more individuals |
| 92520          | Laryngeal function studies (i.e., aerodynamic testing and acoustic testing)                                            |
| 92526          | Treatment of swallowing dysfunction and/or oral                                                                        |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | function for feeding                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 92606 | Therapeutic service(s) for the use of non-speech-generating device, including programming and modification                                                                                                                                                                                                                                                                                                                                            |
| 92609 | Therapeutic services for the use of speech-generating device, including programming and modification                                                                                                                                                                                                                                                                                                                                                  |
| 92630 | Auditory rehabilitation; prelingual hearing loss                                                                                                                                                                                                                                                                                                                                                                                                      |
| 92633 | Auditory rehabilitation; postlingual hearing loss                                                                                                                                                                                                                                                                                                                                                                                                     |
| 97039 | Unlisted modality (specify type and time if constant attendance)                                                                                                                                                                                                                                                                                                                                                                                      |
| 97129 | Therapeutic interventions that focus on cognitive function (e.g., attention, memory, reasoning, executive function, problem-solving, and/or pragmatic functioning) and compensatory strategies to manage the performance of an activity (e.g., managing time or schedules, initiating, organizing, and sequencing tasks), direct (one-on-one) patient contact; initial 15 minutes                                                                     |
| 97130 | Therapeutic interventions that focus on cognitive function (e.g., attention, memory, reasoning, executive function, problem-solving, and/or pragmatic functioning) and compensatory strategies to manage the performance of an activity (e.g., managing time or schedules, initiating, organizing, and sequencing tasks), direct (one-on-one) patient contact; each additional 15 minutes (List separately in addition to code for primary procedure) |
| 97139 | Unlisted therapeutic procedure (specify)                                                                                                                                                                                                                                                                                                                                                                                                              |
| 97150 | Therapeutic procedure(s), group (2 or more individuals)                                                                                                                                                                                                                                                                                                                                                                                               |

|       |                               |
|-------|-------------------------------|
| S9152 | Speech therapy, re-evaluation |
| V5362 | Speech screening              |
| V5363 | Language screening            |
| V5364 | Dysphagia screening           |

### **Definitions**

Restorative/Rehabilitative therapy – Skilled therapy must be reasonably expected to improve the patient’s functional capacity or adaptation to impairments in order to be covered.

Maintenance Therapy – Even if no improvement is expected, under the skilled nursing facility (SNF), home health (HH), and outpatient (OPT) coverage standards, skilled therapy services are covered when an individualized assessment of the patient’s condition demonstrates that skilled care is necessary for the performance of a safe and effective maintenance program to maintain the patient’s current condition or prevent or slow further deterioration. Skilled maintenance therapy may be covered when the particular patient’s special medical complications or the complexity of the therapy procedures require skilled care.

Maintenance Program – Coverage of therapy services, including speech-language pathology services, for a maintenance program based on the patient's need for skilled care.

Re-evaluation – A re-evaluation would be considered reasonable and necessary for the indications described above.

## Medical Evidence

Mormer et al. (2024) analyzed racial disparities and the utilization of speech therapy by individuals diagnosed with oropharyngeal dysphagia. Of 56,198 identified individuals, 60.7% (n = 34,112) received speech therapy (61.5% White, 15.6% Black, 13.1% Other, and 9.8% Hispanic). Racial disparities were noted, particularly among those who were admitted to the hospital with acute stroke or pneumonia. A significant difference was not identified among patients with bacterial pneumonia or sepsis. The study is one of the few that addresses racial disparities – future research is needed with respect to the patient’s primary diagnosis, duration of therapy, and location of therapy.<sup>14</sup>

Osman et al. (2023) performed a systematic review on the role of early initiation of speech therapy for autism spectrum disorder (ASD). A total of 501 participants were included (78% male, 22% female). The review demonstrated the benefits of early initiation – these include an increase in self-esteem, social skills, cognitive ability, and effective communication. Anxiety also decreased among the individual and those with whom they interact in daily life (e.g., family, caregivers, teachers). The research also highlights the necessity of educating parents and caregivers on how to identify red flags and effectively overcome challenges.<sup>15</sup>

Sand et al. (2022) conducted a systematic review and meta-analysis of the benefits of speech therapy for individuals born with a cleft palate. Despite reconstructive surgery as a child, 50% of children continue to have speech difficulties that require additional surgery and speech therapy. Of the 34 studies that met the criteria for inclusion, 19 yielded data on 343 individuals. The studies analyzed language ability, speech production measurements, and self-reported outcomes. Overall, the results demonstrate a significant improvement in speech production following speech therapy, especially among younger children.<sup>16</sup>

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# Clinical Guideline Revision History/Information

Original Date: September 19, 2024

## Review History

|           |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version 2 | 05/01/2025 | <ul style="list-style-type: none"><li>• Restructured policy to align with the Medicare policy. Condensed sub-bullets for symptoms and services.</li><li>• Expanded indication for provider licensing requirements: "Speech therapy services are provided by a licensed and appropriately credentialed speech/language professional acting within the applicable scope of practice for the jurisdiction where services are provided, allowing for care rendered under the direct supervision of an ancillary speech/language pathologist as permitted under state law(s)."</li><li>• Added indications for:<ul style="list-style-type: none"><li>○ Therapeutic services related to the use of a non-speech-generating device</li><li>○ Auditory rehabilitation following a cochlear implant</li></ul></li><li>• Added "definitions" section (restorative/rehabilitative therapy, maintenance therapy, maintenance program, and re-evaluation).</li></ul> |
|-----------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## **Cohere Medical Policy – Patellofemoral Reconstruction/Realignment**

*Clinical Policy for Medical Necessity Review*

**Version: 2**

**Cohere Health UMC Approval Date: July 24, 2025**

Last Annual Review: July 24, 2025

Revision: Not Applicable

Next Annual Review: July 24, 2026



# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Patellofemoral Reconstruction/Realignment

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Patellofemoral Reconstruction/Realignment***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the

patient's primary symptoms can be adequately assessed with a single study or procedure.

### **Description**

Patellofemoral reconstruction, often called medial patellofemoral ligament (MPFL) reconstruction, is a knee surgery in which a damaged or torn MPFL is reconstructed. The damaged ligament, located on the inside of the knee, is replaced with a tendon graft, which is attached to the patella and femur.<sup>1</sup> Surgical technique may vary in graft choice, points of attachment, fixation method, and graft tension.<sup>2</sup> The goal of the procedure is to restore normal patellar tracking and improve medial stabilization to prevent excessive lateral movement of the kneecap. In patellofemoral realignment procedures, abnormal patellar tracking is surgically corrected using techniques such as tibial tubercle osteotomy and trochleoplasty.<sup>3,4</sup> These procedures involve reshaping or repositioning structures of the knee, including the patellar tendon, the tibial tubercle, and the trochlea, to improve alignment and stability.

### **Medical Necessity Criteria**

#### **Indications**

**Patellofemoral Reconstruction/Realignment** is considered appropriate if **ALL** of the following are **TRUE**:

- The patient has **ANY** of the following:
  - Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>5-8</sup>:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy, or physician-directed exercise program, including a home exercise program<sup>10</sup>; **OR**
  - The patient is experiencing a subsequent dislocation, or the first dislocation is associated with an osteochondral or chondral injury<sup>7,9-14</sup>; **OR**
  - There are patellar subluxation episodes after 6 months of conservative care<sup>8</sup>; **OR**
  - The patient has a loose body<sup>14,15</sup>; **OR**

- Abnormal patellar tracking as part of or after a total knee arthroplasty<sup>16</sup>; **AND**
- Imaging with radiology report shows **ANY** of the following<sup>14,17-20</sup>:
  - The procedure is a patellofemoral realignment and the patient has abnormal patellar tracking as indicated by **ANY** of the following<sup>31</sup>:
    - Insall-Salvati index greater than 1.2; **OR**
    - Caton-Deschamps index greater than 1.2; **OR**
    - Patellar tilt angle greater than 15°; **OR**
    - Trochlear depth less than 3mm; **OR**
    - Trochlear sulcus angle greater than 145°; **OR**
    - TT-TG distance greater than 20mm; **OR**
  - The procedure is a patellofemoral reconstruction and **ANY** of the following:
    - Disruption or attenuation of the medial patellofemoral ligament; **OR**
    - Loose body; **OR**
    - Osteochondral or articular cartilage injury; **AND**
- Positive exam findings, including but not limited to **ANY** of the following<sup>21-26</sup>:
  - Patellar tracking with a J-sign; **OR**
  - Lateral glide of 3 quadrants of the patellar width accompanied by apprehension and asymmetry compared with the contralateral side; **OR**
  - Moving patellar apprehension test.

## Non-Indications

**Patellofemoral Reconstruction/Realignment** is not considered appropriate if **ANY** of the following is **TRUE**<sup>15,17</sup>:

- Severe patellofemoral arthritis; **OR**
- Active joint infection.

## Level of Care Criteria

Outpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                              |
|----------------|-----------------------------------------------------------------------------------------------|
| 27418          | Anterior tibial tubercleplasty (eg, Maquet type procedure)                                    |
| 27420          | Reconstruction of dislocating patella                                                         |
| 27422          | Repair, Revision, and/or Reconstruction Procedures on the Femur (Thigh Region) and Knee Joint |
| 27424          | Reconstruction for dislocating Patella with patellectomy                                      |
| 27427          | Ligamentous reconstruction (augmentation), knee; extra-articular                              |
| 27524          | Open treatment of patellar fracture with insertion of hardware and/or removal of patella      |
| 27566          | Open treatment of patellar dislocation, with or without partial or total patellectomy         |

## Medical Evidence

In a 2024 systematic review of 7 studies involving 411 patients, Tedeschi et al. (2024) compared outcomes of surgical and nonsurgical treatments for first-time patellar dislocation.<sup>27</sup> The authors reported that surgically treated patients had lower redislocation rates compared to conservatively treated patients in all 7 studies. Knee function was less influenced by treatment type, with 3 studies favoring surgical treatment, 2 studies favoring conservative treatment, and 2 studies reporting no significant differences. Similarly, there were no consistent differences in quality of life, with 2 studies favoring surgical treatment, 2 favoring conservative treatment, and 3 showing no differences. The authors concluded that while surgical treatment appears to reduce redislocation rate, conservative management remains a viable treatment option for some patients and may be preferred for patients with low demand needs or when complication risks are high.

Yoo et al. (2023) performed a meta-analysis to compare the effectiveness of multiple treatments for primary patellar dislocation, including medial patellofemoral ligament (MPFL) reconstruction, MPFL repair, combined proximal realignment (CPR), and conservative management. The systematic literature review and meta-analysis focused on randomized controlled trials (RCTs) and prospective studies involving 626 patients. While significant differences related to functional outcomes among the treatments, MPFL reconstruction demonstrated significantly better re-dislocation rates than MPFL repair, CPR, and conservative management. The analysis suggested a lower probability of re-dislocation with MPFL reconstruction than MPFL repair. Overall, MPFL repair and reconstruction are more effective options for preventing re-dislocation in primary patellar dislocation cases.<sup>28</sup>

Migliorini et al. (2022) conducted a study to assess the role of allografts versus autografts in MPFL reconstruction for patients with patellofemoral instability. Twelve studies involving 474 procedures were analyzed, with a mean follow-up of 42.2 months. While autografts showed slightly better Tegner, Kujala, and Lysholm scores, autografts and allografts had similar rates of persistent instability sensation and revision. However, the allograft

group demonstrated a lower rate of re-dislocations. The findings suggest that allografts could be a viable option for MPFL reconstruction in selected patients, offering comparable patient-reported outcome measures and revision rates, with a tendency toward lower re-dislocation rates than autografts.<sup>29</sup>

Dall'Oca et al. (2020) performed a study that focused on the MPFL and its significance in lateral patellar dislocation injuries, which account for 3% of knee injuries. While MPFL reconstruction is a reliable procedure with varying rates of recurrent instability, the authors aimed to identify proper indications for MPFL reconstruction and highlight the critical aspects of the procedure. The research indicates that a history of multiple patellar dislocations is a significant indication for ligament reconstruction, particularly following unsuccessful conservative treatments and in cases of persistent patellofemoral instability. However, there has yet to be a clear consensus on the gold standard technique for MPFL reconstruction. The authors conclude that because there is limited literature comparing outcomes, it is challenging to determine the most appropriate technique as surgical procedures evolve.<sup>15</sup>

In 2018, the American Orthopedic Society for Sports Medicine (AOSSM), along with the Patellofemoral Foundation (PFF), held a workshop on patellofemoral instability, which resulted in a consensus statement that included treatment recommendations.<sup>30</sup> Surgical treatment was recommended after failure of nonoperative treatment, when patient history and clinical examination findings are consistent with the diagnosis, and when examination under anesthesia reveals pathologic laxity in full extension and 30° flexion.

The Pediatric Orthopaedic Society of North America (POSNA) study guide on acute patellar dislocation recommends plain radiographs (standing anterior-posterior, standing 45° flexion weight bearing, 30° lateral, and patellar Merchant views) as part of the initial evaluation after a dislocation.<sup>14</sup> Advanced imaging, including ultrasound and MRI, is recommended for detection of osteochondral injury, loose bodies, medial retinacular injury, or bony avulsion injuries. The society notes that MRI is the preferred imaging tool due to its superior ability to detect osteochondral injury, loose bodies, and soft tissue injury, with diagnostic sensitivity for MPFL injuries reported to be



85%-92%. Initial treatment for patellar instability should be nonsurgical and may include immobilization, rehabilitation, and in some cases, aspiration. POSNA notes that while a 3-6 week period of immobilization has traditionally been used to permit soft tissue recovery, earlier mobilization is often advocated. Currently, no published studies compare the efficacy of immobilization versus early movement, and the efficacy of stabilizing braces remains unclear. While over 80% of pediatric acute patellar dislocations may be successfully treated nonsurgically, POSNA states that surgical treatment is indicated when loose bodies are present, for fixation of osteochondral fractures, and in recurrent instability.

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# Policy Revision History/Information

| Original Date: May 10, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Version 2                   | 07/24/2025 | <p>Annual review.</p> <p>Added CPT codes 27418, 27427, and 27566,</p> <p>Added criteria for positive exam findings.</p> <p>Clarified imaging criteria (findings that support realignment versus reconstruction).</p> <p>Added imaging indications.</p> <p>Removed criteria for bracing.</p> <p>Added indication for continued subluxation episodes after 6 months of conservative care.</p> <p>Literature review – Medical Evidence section updated (including references).</p> |



## **Cohere Medical Policy – Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder)**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 1  
**Effective Date:** August 5, 2024

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy – Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder)

**Date of last literature review:** 7/31/2024

**Document last updated:** 8/5/2024

**Type:** ☐ Adult (18+ yo) | ☒ Pediatric (0-17yo)



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# Medical Necessity Criteria

## **Service: Pediatric Arthroscopy Procedures**

### Recommended Clinical Approach

Pediatric arthroscopy is typically indicated for traumatic injuries to the large joints—knee, hip, and shoulder. Special considerations are necessary around surgical timing and the remaining skeletal growth as patients may have open physis. Therefore, there is a need for a separate pediatric policy.

### Medical Necessity Criteria

#### Indications

→ **Pediatric arthroscopy procedures** are considered appropriate if **ANY** of the following is **TRUE**:

- ◆ The procedure is pediatric knee arthroscopy, and **ANY** of the following is **TRUE**:
  - The patient has an anterior cruciate ligament (ACL) tear, and **ALL** of the following are **TRUE**<sup>1-3</sup>:
    - Plain radiographs (AP, lateral, and intercondylar tunnel radiographs) are negative for fracture unless this is associated with ACL injury, such as tibial eminence, Segond, or femoral condyle and posterior tibial plateau fracture due to pivot impaction; **AND**
    - Advanced imaging shows an acute anterior cruciate ligament (ACL) tear; **OR**
  - The patient has juvenile osteochondritis dissecans (OCD) lesions, and **ALL** of the following are **TRUE**<sup>4-8</sup>:
    - Advanced imaging shows an OCD lesion with breached or fissured articular cartilage, increased T2 signal indicating an unstable lesion, osteochondral fragments, loose bodies, or subchondral cysts; **AND**
    - The patient is symptomatic with **ANY** of the following:
      - ◆ Knee effusion; **OR**
      - ◆ Decreased knee extension; **OR**
      - ◆ Antalgic gait; **OR**
  - The patient requires meniscus surgery (debridement or repair) when **ANY** of the following is **TRUE**<sup>9-13</sup>:

- Discoid meniscus when **ALL** of the following are **TRUE**:
  - ◆ Advanced imaging shows discoid meniscus; **AND**
  - ◆ The patient is symptomatic from the discoid meniscus with knee pain, popping, or lack of knee extension; **OR**
- Advanced imaging shows partial or complete meniscus tear, acute or chronic; **OR**
- ◆ The procedure is hip arthroscopy, and **ALL** of the following are **TRUE**<sup>14-16</sup>:
  - Documented imaging findings, including **ANY** of the following:
    - Routine radiographs for bony pathology (fracture)
    - Advanced Imaging (eg, computerized tomography [CT] scan and/or MRI) for soft tissue pathology (eg, meniscus tear, ACL tear, rotator cuff tear) with radiology report; **AND**
  - **ANY** of the following:
    - Failure of conservative management for greater than 3 months, including **ALL** of the following:
      - ◆ Oral steroids, anti-inflammatory medications, or analgesics; **AND**
      - ◆ Physical therapy with home exercise program; **AND**
      - ◆ Ambulatory assistive device if medically appropriate; **AND**
      - ◆ Modification of pain-inducing activities; **OR**
    - Conservative treatment is not required if the patient has **ANY** of the following:
      - ◆ Active infection or acute trauma with functional loss (effusion, focal tenderness, inability to bear weight, symptoms explained by radiographic findings (e.g., fracture, soft tissue injury); **OR**
      - ◆ A visual deformity (e.g., dislocation, loose body); **AND**
  - The patient requires evaluation or treatment of **ANY** of the following:
    - Articular surface or osteochondral disorders; **OR**
    - Acute trauma (e.g., dislocation); **OR**
    - Intra-articular loose body; **OR**

- Labral reconstruction with an allograft or autograft; **OR**
- Labral tears; **OR**
- Lavage for intra-articular infections; **OR**
- Ligamentum teres injury; **OR**
- Pathological synovial disease (e.g., synovectomy); **OR**
- Extra-articular trauma, such as proximal hamstring tear, partial or full thickness; **OR**
- Femoroacetabular impingement (FAI) syndrome along with associated cartilage and/or labral injury, and **ALL** of the following:
  - ◆ Absence of advanced osteoarthritis (Tonnis grade 2 or 3); **AND**
  - ◆ Moderate to severe persistent hip or groin pain that limits activity and is worsened by flexion activities (eg, squatting or prolonged sitting); **AND**
  - ◆ Positive impingement sign with pain while the hip is flexed to 90 degrees, adducted, and internally rotated; **AND**
  - ◆ Radiographic confirmation (CT, MRI, or X-rays) of FAI with evidence of cam impingement (alpha angle greater than 50 degrees), pincer impingement (coxa profunda or acetabular retroversion), or both; **OR**
- ◆ The procedure is shoulder arthroscopy, and **ANY** of the following is **TRUE**<sup>17-20</sup>:
  - Advanced imaging shows **ANY** of the following is **TRUE**:
    - Labral tear, acute or chronic; **OR**
    - Rotator cuff tear, acute or chronic; **OR**
  - Capsulorrhaphy/labral repair for shoulder instability is considered appropriate if **ALL** of the following are **TRUE**:
    - Documented history of traumatic or atraumatic shoulder instability/laxity (e.g. dislocation, subluxation); **AND**
    - Advanced diagnostic imaging (e.g., MRI, CT) demonstrates **ANY** of the following findings that are consistent with instability:
      - ◆ ALPSA lesion; **OR**

- ◆ Bankart lesion; **OR**
- ◆ Capsular tear; **OR**
- ◆ GLAD lesion; **OR**
- ◆ HAGL lesion; **OR**
- ◆ Patulous/redundant capsule; **OR**
- ◆ Reverse Bankart lesion; **OR**
- ◆ Hill Sachs lesion; **OR**
- ◆ Reverse Hill Sachs lesion; **OR**
- ◆ Glenoid fracture.

### Non-Indications

→ **Pediatric arthroscopy procedures** are not considered appropriate if **ANY** of the following is **TRUE**:

- ◆ None.

### Level of Care Criteria

Inpatient or Outpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                |
|----------------|-----------------------------------------------------------------|
| 23929          | Unlisted procedure, shoulder                                    |
| 27299          | Unlisted procedure, pelvis or hip joint                         |
| 27412          | Autologous chondrocyte implantation, knee                       |
| 27599          | Unlisted procedure, femur or knee                               |
| 29805          | Diagnostic examination of shoulder using an endoscope           |
| 29806          | Arthroscopy, shoulder, surgical; capsulorrhaphy                 |
| 29807          | Surgical arthroscopy of shoulder with repair of SLAP lesion     |
| 29819          | Removal of loose or foreign body of shoulder using an endoscope |
| 29820          | Arthroscopy, shoulder, surgical; synovectomy, partial           |

|       |                                                                                                                                                                                                                             |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 29821 | Arthroscopy, shoulder, surgical; synovectomy, complete                                                                                                                                                                      |
| 29822 | Surgical arthroscopy of shoulder with debridement<br>Surgical arthroscopy of shoulder with limited debridement                                                                                                              |
| 29823 | Surgical arthroscopy of shoulder with debridement<br>Surgical arthroscopy of shoulder with extensive debridement                                                                                                            |
| 29824 | Surgical arthroscopy of shoulder with distal claviclectomy                                                                                                                                                                  |
| 29825 | Surgical arthroscopy of shoulder with lysis and resection of adhesions<br>Surgical arthroscopy of shoulder with lysis and resection of adhesions with manipulation                                                          |
| 29826 | Arthroscopy, shoulder, surgical; decompression of subacromial space with partial acromioplasty, with coracoacromial ligament (ie, arch) release, when performed (List separately in addition to code for primary procedure) |
| 29827 | Surgical arthroscopy of shoulder with repair of rotator cuff                                                                                                                                                                |
| 29828 | Surgical arthroscopy of shoulder with biceps tenodesis                                                                                                                                                                      |
| 29850 | Arthroscopically aided treatment of intercondylar spine(s) and/or tuberosity fracture(s) of the knee, with or without manipulation; without internal or external fixation (includes arthroscopy)                            |
| 29851 | Arthroscopically aided treatment of intercondylar spine(s) and/or tuberosity fracture(s) of the knee, with or without manipulation; with internal or external fixation (includes arthroscopy)                               |
| 29855 | Arthroscopically aided treatment of tibial fracture, proximal (plateau); unicondylar, includes internal fixation, when performed (includes arthroscopy)                                                                     |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 29856 | Arthroscopically aided treatment of tibial fracture, proximal (plateau); bicondylar, includes internal fixation, when performed (includes arthroscopy)                                                                                                                                                                                                                                                             |
| 29860 | Diagnostic arthroscopy of hip joint; Diagnostic arthroscopy of hip joint with synovial biopsy                                                                                                                                                                                                                                                                                                                      |
| 29861 | Surgical arthroscopy of hip with removal of foreign body; Surgical arthroscopy of hip with removal of loose body                                                                                                                                                                                                                                                                                                   |
| 29862 | Surgical arthroscopy of hip with debridement of articular cartilage;<br>Surgical arthroscopy of hip with debridement of articular cartilage, abrasion arthroplasty, and resection of labrum;<br>Surgical arthroscopy of hip with debridement of articular cartilage, and abrasion arthroplasty;<br>Surgical arthroscopy of hip with shaving of articular cartilage, abrasion arthroplasty, and resection of labrum |
| 29863 | Surgical arthroscopy of hip with synovectomy                                                                                                                                                                                                                                                                                                                                                                       |
| 29866 | Arthroscopy, knee, surgical; osteochondral autograft(s) (e.g., mosaicplasty) (includes harvesting of autograft[s])                                                                                                                                                                                                                                                                                                 |
| 29867 | Arthroscopy, knee, surgical; osteochondral allograft (e.g., mosaicplasty)                                                                                                                                                                                                                                                                                                                                          |
| 29868 | Arthroscopy, knee, surgical; meniscal transplantation (includes arthrotomy for meniscal insertion), medial or lateral                                                                                                                                                                                                                                                                                              |
| 29870 | Arthroscopy, knee, diagnostic, with or without synovial biopsy (separate procedure)                                                                                                                                                                                                                                                                                                                                |
| 29871 | Arthroscopy, knee, surgical; for infection, lavage and drainage                                                                                                                                                                                                                                                                                                                                                    |
| 29873 | Arthroscopy, knee, surgical; with lateral release                                                                                                                                                                                                                                                                                                                                                                  |
| 29874 | Arthroscopy, knee, surgical; for removal of loose                                                                                                                                                                                                                                                                                                                                                                  |

|       |                                                                                                                                                                                                                           |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | body or foreign body (e.g., osteochondritis dissecans fragmentation, chondral fragmentation)                                                                                                                              |
| 29875 | Arthroscopy, knee, surgical; synovectomy, limited (e.g., plica or shelf resection) (separate procedure)                                                                                                                   |
| 29876 | Arthroscopy, knee, surgical; synovectomy, major, 2 or more compartments (e.g., medial or lateral)                                                                                                                         |
| 29877 | Arthroscopy, knee, surgical; debridement/shaving of articular cartilage (chondroplasty)                                                                                                                                   |
| 29879 | Arthroscopy, knee, surgical; abrasion arthroplasty (includes chondroplasty where necessary) or multiple drilling or microfracture                                                                                         |
| 29880 | Arthroscopy, knee, surgical; with meniscectomy (medial AND lateral, including any meniscal shaving) including debridement/shaving of articular cartilage (chondroplasty), same or separate compartment(s), when performed |
| 29881 | Arthroscopy, knee, surgical; with meniscectomy (medial OR lateral, including any meniscal shaving) including debridement/shaving of articular cartilage (chondroplasty), same or separate compartment(s), when performed  |
| 29882 | Arthroscopy, knee, surgical; with meniscus repair (medial OR lateral)                                                                                                                                                     |
| 29883 | Arthroscopy, knee, surgical; with meniscus repair (medial AND lateral)                                                                                                                                                    |
| 29884 | Arthroscopy, knee, surgical; with lysis of adhesions, with or without manipulation (separate procedure)                                                                                                                   |
| 29885 | Arthroscopy, knee, surgical; drilling for osteochondritis dissecans with bone grafting, with or without internal fixation (including debridement of base of lesion)                                                       |
| 29886 | Arthroscopy, knee, surgical; drilling for intact osteochondritis dissecans lesion                                                                                                                                         |
| 29887 | Arthroscopy, knee, surgical; drilling for intact osteochondritis dissecans lesion with internal                                                                                                                           |



|       |                                                                                                                                                                                                                            |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | fixation                                                                                                                                                                                                                   |
| 29888 | Arthroscopically aided anterior cruciate ligament repair/augmentation or reconstruction                                                                                                                                    |
| 29889 | Arthroscopically aided posterior cruciate ligament repair/augmentation or reconstruction                                                                                                                                   |
| 29914 | Surgical arthroscopy of hip with femoroplasty;<br>Surgical arthroscopy of hip with femoroplasty for cam lesion                                                                                                             |
| 29915 | Surgical arthroscopy of hip with acetabuloplasty;<br>Surgical arthroscopy of hip with acetabuloplasty for pincer lesion                                                                                                    |
| 29916 | Surgical arthroscopy of hip with labral repair                                                                                                                                                                             |
| 29999 | Unlisted arthroscopic procedure                                                                                                                                                                                            |
| C9781 | Arthroscopy, shoulder, surgical; with implantation of subacromial spacer (e.g., balloon), includes debridement (e.g., limited or extensive), subacromial decompression, acromioplasty, and biceps tenodesis when performed |
| J7330 | Cultured chondrocytes implant                                                                                                                                                                                              |
| S2112 | Knee arthroscopy harvest                                                                                                                                                                                                   |
| S2300 | Arthroscopy, shoulder, surgical; with thermally-induced Not Covered capsulorrhaphy                                                                                                                                         |

# Medical Evidence

Cancino et al. (2022) discuss treatment for anterior cruciate ligament (ACL) injuries in skeletally immature patients. Knee injuries are common in high school athletes, approximately 25% of them are ACL injuries. The overall rate of injury of 6.5 injuries per 100,000 athletes in the United States. Conservative treatment is not recommended in most cases as several studies report that delayed surgical stabilization of the knee can result in additional meniscus injury and articular damage. Early stabilization reduces laxity/instability and allows return to activity/sports.

Kocher et al. (2017) discuss management of discoid meniscus in children. Discoid menisci are a congenital variant and are prone to tearing and instability. Patients usually present with symptoms of knee pain, popping, clunking and lack of full knee extension. MRI is important for both diagnosis as well as understanding the morphology. Symptomatic discoid menisci should be managed with arthroscopic saucerization.

Nanmour et al. (2024) reported on evidence-based treatment for Osteochondritis Desiccans (OCD) lesions of the knee. Juvenile OCD prevalence is approximately 15 per 100,000, most commonly occurring between 12 to 16 years of age. The most common location is the medial femoral condyle. Stable OCD lesions can present with aching knee pain, while unstable OCD lesions present with a knee effusion and antalgic gait. Arthroscopic surgical management is the preferred treatment for unstable lesions.

Awad et al. (2019) evaluated literature to identify the indications for pediatric hip arthroscopy. They determined that arthroscopy has favorable outcomes with the following indications: femoracetabular impingement, labral tear, cartilage lesions due to developmental hip dysplasia, septic arthritis, traumatic hip dislocation and loose bodies.

Imam et al. (2023) determined that pediatric shoulder arthroscopy is effective for treatment of shoulder instability, obstetric brachial plexus palsy, and partial traumatic rotator cuff tears. These procedures resulted in good outcomes with limited complications.

Hughes et al. (2018) performed a retrospective clinical review on adolescents with shoulder instability who underwent a remplissage procedure. Remplissage may be superior to Bankart repair for adolescents with anterior shoulder instability due to a Hill-Sachs deformity.

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# Clinical Guideline Revision History/Information

|                               |  |  |
|-------------------------------|--|--|
| Original Date: August 5, 2024 |  |  |
| Review History                |  |  |
|                               |  |  |
|                               |  |  |
|                               |  |  |



# **Cohere Medical Policy – Pediatric Vertebral Body Tethering (VBT) and Vertical Expandable Prosthetic Titanium Rib (VEPTR)**

*Clinical Policy for Medical Necessity Review*

**Version: 2**

**Cohere Health UMC Approval Date: August 14, 2025**

Last Annual Review: August 14, 2025

Revision: Not Applicable

Next Annual Review: August 14, 2026



# Important Notices

## Notices & Disclaimers:

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Pediatric Vertebral Body Tethering

**Type:** ☐ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Pediatric Vertebral Body Tethering (VBT) and Vertical Expandable Prosthetic Titanium Rib (VEPTR)***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the

patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Vertebral body tethering (VBT) uses hardware such as screws and cords that are implanted near the curved area of a spine with scoliosis. The procedure requires only small incisions and devices.<sup>1-5</sup> The Pediatric Orthopaedic Society of North America (POSNA) notes that most patients are treated with VBT under the United States Food and Drug Administration (FDA) Humanitarian Device Exemption (HDE) program, which allows off-label use for anterior VBT.<sup>4</sup> The vertical expandable prosthetic titanium rib (VEPTR) is an FDA-approved device that allows the ribcage to expand to straighten the spine and support normal respiration or lung growth. The curved metal rod is attached to the ribs, spine, or pelvis and is expandable to accommodate growth.

## **Medical Necessity Criteria**

### **Indications**

**Pediatric vertebral body tethering (VBT) and vertical expandable prosthetic titanium rib (VEPTR)** are considered appropriate if **ANY** of the following is **TRUE**:

- Vertebral body tethering (VBT) is considered appropriate with **ALL** of the following:
  - Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>6</sup>:
    - Physical therapy or a physician-directed home exercise program;  
**AND**
    - Bracing<sup>7</sup>; **AND**
  - Spinal curve flexibility greater than 30%; **AND**
  - Radiographs demonstrating a Cobb angle of 40 to 60 degrees<sup>14</sup>; **AND**
  - Skeletal immaturity with **ANY** of the following:
    - Risser grade 0 or 1; **OR**
    - Sanders Maturity Scale less than or equal to 4; **AND**
  - The procedure is performed at a Center of Excellence (COE) specialized in anterior spinal surgery<sup>8</sup>; **OR**

- Vertical expandable prosthetic titanium rib (VEPTR) is considered appropriate with **ALL** of the following:
  - Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>6</sup>:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy, including a physician-directed home exercise program; **AND**
    - **ANY** of the following:
      - Corticosteroid injection if medically appropriate<sup>9</sup>; **OR**
      - Documentation that corticosteroid injection is contraindicated; **AND**
  - The patient has **ANY** of the following:
    - Progressive thoracic insufficiency syndrome<sup>10,11</sup>; **OR**
    - Scoliosis (e.g., congenital, neuromuscular, idiopathic, syndromic)<sup>10,11</sup>; **OR**
    - Complex spinal deformities; **OR**
    - Chest wall defects; **AND**
  - The patient is skeletally immature, between 6 months of age and skeletal maturity, with **ANY** of the following<sup>10,11</sup>:
    - Risser grade 0 or 1<sup>12</sup>; **OR**
    - Sanders Maturity Scale less than or equal to 4<sup>13</sup>; **AND**
  - The procedure is performed at a Center of Excellence (COE) specialized in anterior spinal surgery<sup>8</sup>; **AND**
  - Preoperative evaluation has been done with the evaluation of **ALL** of the following:
    - Appropriate nutrition status as indicated by **ANY** of the following<sup>14</sup>:
      - Albumin less than 3.5 g/dL; **OR**
      - Total lymphocyte count less than 1,500 cells/mm<sup>3</sup>; **OR**
      - Transferrin level less than 200 mg/dL; **AND**
    - Cardiac status; **AND**
    - Pulmonary function.

## Non-Indications

**Pediatric vertebral body tethering (VBT) and vertical expandable prosthetic titanium rib (VEPTR)** are not considered appropriate if **ANY** of the following is **TRUE**:

- **ANY** of the following for VBT:
  - The patient is skeletally mature<sup>4</sup>; **OR**
  - The patient is non-ambulatory<sup>4</sup>; **OR**
  - Growing rods are being used (FDA device recall); **OR**
  - Active or chronic infection (e.g., systemic, local)<sup>2,5,10,11</sup>; **OR**
  - Known allergy to titanium alloys or magnetic resonance contrast agents<sup>2,5,10,11</sup>; **OR**
  - The patient has **ANY** of the following conditions:
    - Axial back pain only, with no leg, buttock, or groin pain<sup>2,5</sup>; **OR**
    - Back or leg pain, unknown etiology<sup>2,5</sup>; **OR**
    - Morbid obesity body mass index (BMI) greater than 40<sup>2,5</sup>; **OR**
    - Vertebral malformations<sup>4</sup>; **OR**
    - Chest malformations<sup>4</sup>; **OR**
    - Altered muscle function or control<sup>4</sup>; **OR**
    - Severe facet hypertrophy that requires extensive bone removal, which would cause instability<sup>2,5</sup>; **OR**
    - Grade II or greater spondylolisthesis<sup>2,5</sup>; **OR**
    - Isthmic spondylolisthesis or spondylolysis (pars fracture)<sup>2,5</sup>; **OR**
    - Degenerative lumbar scoliosis (Cobb angle greater than 25° lumbar segmental)<sup>2,5</sup>; **OR**
    - Osteopenia<sup>2,5</sup>; **OR**
    - Osteoporosis<sup>2,5</sup>; **OR**
    - Metabolic bone disease (e.g., Paget disease, osteomalacia)<sup>5</sup>; **OR**
    - Rheumatoid arthritis or an autoimmune disease that requires chronic steroid use<sup>5</sup>; **OR**
    - Cauda equina syndrome<sup>2,5</sup>; **OR**
    - Active malignancy of an invasive malignancy (excluding nonmelanoma skin cancer, primary bony tumor), unless the patient has had no clinical signs or symptoms of the malignancy for at least 5 years with treatment that has curative intent<sup>5</sup>; **OR**
  - More than 2 vertebral levels require surgical decompression<sup>5</sup>; **OR**
  - Previous surgical procedure resulted in gross translatory instability of the lumbar spine<sup>5</sup>; **OR**

- Previous fusion of **ANY** of the following<sup>2,5</sup>:
  - Implantation of a total disc replacement; **OR**
  - Complete laminectomy at index level; **OR**
- Radiographically compromised vertebral bodies at any lumbar level(s) caused by current or past trauma, tumor, or infection<sup>2,5</sup>; **OR**
- Radiographs demonstrate gross angular or translatory instability of the spine at index or adjacent levels with sagittal plane translation greater than 4.0 mm as spondylolisthesis or retrolithesis<sup>5</sup>; **OR**
- **ANY** of the following for VEPTR<sup>10,11</sup>:
  - Bone strength of the ribs or the spine cannot support where the VEPTR would be attached; **OR**
  - Missing ribs nearest and furthest away from where the VEPTR device needs to be placed and attached; **OR**
  - The diaphragm cannot work properly; **OR**
  - Lack of soft tissue for coverage of VEPTR; **OR**
  - Active or chronic infection (e.g., systemic, local); **OR**
  - Known allergy to titanium alloys or magnetic resonance contrast agents; **OR**
  - The patient is skeletally mature (about age 14 for girls and age 16 for boys) with problems other than chest wall instability; **OR**
  - The patient is younger than 6 months of age.

## **Definitions**

**Center of Excellence (COE):** A facility specialized to provide an “exceptionally high concentration of expertise and related resources centered on particular medical areas and delivered in a comprehensive, interdisciplinary fashion.”<sup>8</sup>

**Moderate stenosis:** A reduction of more than 25% of the anteroposterior dimension versus the next normal, adjacent level. This includes a comparison of nerve root crowding and a patient’s normal level as demonstrated by imaging (e.g., CT, MRI).<sup>5</sup>

**Instability:** White and Panjabi’s classification for stability specifies a “sagittal plane translation greater than 4.0 mm or 15% or local sagittal plane rotation greater than 15° at L1–2, L2–3, and L3–4; greater than 20° at L4–5 based on standing flexion–extension radiographs).”<sup>5</sup>

**Skeletal maturity:** The Scoliosis Research Society defines skeletally immature as patients “Risser 2 and under OR Sanders 5 and less, as under current understanding, growth modulation depends on meaningful remaining skeletal growth.”<sup>4</sup>

### **Level of Care Criteria**

Inpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0656T                 | Anterior lumbar or thoracolumbar vertebral body tethering; up to 7 vertebral segments                                                                                  |
| 0657T                 | Anterior lumbar or thoracolumbar vertebral body tethering; 8 or more vertebral segments                                                                                |
| 0790T                 | Revision (e.g., augmentation, division of tether), replacement, or removal of thoracolumbar or lumbar vertebral body tethering, including thoracoscopy, when performed |
| 22836                 | Anterior thoracic vertebral body tethering, including thoracoscopy, when performed; up to 7 vertebral segments                                                         |
| 22837                 | Anterior thoracic vertebral body tethering, including thoracoscopy, when performed; 8 or more vertebral segments                                                       |
| 22838                 | Revision (e.g., augmentation, division of tether), replacement, or removal of thoracic vertebral body tethering, including thoracoscopy, when performed                |
| 22899                 | Unlisted procedure, spine                                                                                                                                              |



## Medical Evidence

According to Trobisch et al. (2024), vertebral body tethering is being used as a motion-preserving technique. In a retrospective review of 25 patients, thoracic curve correction averaged 55.4% and 71.7% for TL/L curves. Some patients did have breakage of the tether, but none required a posterior spinal fusion.<sup>15</sup>

Roser et al. (2023) performed a systematic review and meta-analysis of 16 studies of cases that used a tethering system. Vertebral body tethering resulted in a statistically significant reduction in Cobb angle, with an average reduction of 25 degrees. The most common complication was tether breakage; however, the consequence of this complication is unknown.<sup>16</sup>

Baroncini et al. (2022) conducted a study of 105 patients to analyze risk factors of tether breakage following VBT. Most patients are asymptomatic following a breakage and do not require additional procedures. However, when breakage occurs within 1 year, the loss of correction is higher. The authors analyzed “the influence of patient demographic, pre- and postoperative radiographic parameters, and intraoperative correction technique on the risk of early tether breakage in patients who underwent VBT.” A significant indicator is the presence of large, rigid curves on the spine; of the 58 curves that demonstrated breakage, 71% were lumbar, and 29% were thoracic. A total of 95 curves were observed that did not have breakage (71% thoracic, 29% lumbar). Overall, the patient's skeletal maturity and age did not demonstrate a correlation to breakage.<sup>17</sup>

Zhu et al. (2022) performed a systematic review and a single-arm meta-analysis of VBT to treat scoliosis. A total of 1045 patients from 26 studies were included. Overall, the authors note a 73.02% success rate; however, 15.8% of patients required additional surgery. Over half of the patients (52.17%) reported complications, including curve progression with tether breakage, pulmonary complications, and overcorrection.<sup>18</sup>

Shin et al. (2021) performed a meta-analysis that included 211 patients from 10 studies on the efficacy of anterior VBT vs posterior spinal fusion to treat adolescent idiopathic scoliosis. The authors compared complication and

reoperation rates. Patients demonstrated higher complication rates with anterior VBT. The authors note the need for long-term, randomized, prospective studies to analyze the efficacy of VBT for the adolescent population.<sup>19</sup>

Bednar et al. (2021) compared magnetically controlled growing rods with other distraction techniques through a systematic review and meta-analysis. A review of 18 studies showed that magnetically controlled growing rods were as clinically effective as other technologies. A lower complication rate was also noted, as well as greater serum titanium levels in patients with magnetically controlled growing rods, but the clinical impact is unclear.<sup>20</sup>

### *United States Food and Drug Administration (FDA)*

In 2023, the United States Food & Drug Administration (FDA) (2023) approved the Tether Vertebral Body Tethering System for skeletally immature patients with progressive idiopathic scoliosis who have failed or not tolerated brace wear.<sup>1</sup> The FDA approved OrthoPedicatrics (eLLi) Growing Rod System for scoliosis in 2024.

In 2019, the United States Food and Drug Administration (FDA) approved the first device for use in idiopathic adolescent scoliosis surgeries. The Tether™ – Vertebral Body Tethering System received Humanitarian Use Device (HUD) designation on March 28, 2019. The humanitarian device exemption (HDE) was approved on August 16, 2019, by the Center for Devices and Radiological Health (CDRH) of the Food and Drug Administration (H190005).<sup>1-5</sup>

The Indication for Use statement was modified to grant permission for the HUD designation. The HUD designation was for “use in the treatment of juvenile and adolescent idiopathic scoliosis in patients, age 5 to 19 years, who are skeletally immature and have a Risser Score of less than 5, that require surgical treatment or have failed non-surgical treatments to obtain and maintain correction of severe, progressive spinal deformities with a Cobb angle of greater than or equal to 30°.” Modifications for approval included<sup>1</sup>:

- Removed age ranges.
- Removed “juvenile and adolescent,” as chronological age and skeletal maturity vary among populations.

- Specified that the patient should have dimensionally adequate osseous structures representative of the age range and diagnosis.
- Removed reference to a specific skeletal maturity scoring system, as there are different existing methods, and the HUD analysis was not closely linked to a specific method.
- Identified a Cobb angle range to better reflect the study population.

In 2017, the FDA approved the MAGEC (MAGnetic Expansion Control) Spinal Bracing and Distraction System for treating children with early onset scoliosis (EOS). The MAGEC system is a non-invasive treatment that uses adjustable growing rods controlled by magnets and an external remote control to help straighten a child's spine. The rods are implanted during surgery and then lengthened every 3 to 6 months as the child grows, which usually requires another surgery. The goal is to control the spinal deformity until the child has enough spinal and thoracic development, at which point they can consider definitive spinal fusion.<sup>[21](#)</sup>

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# Policy Revision History/Information

| Original Date: August 8, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Version 2                     | 08/14/2025 | <p>Annual review.</p> <p>Updated title for clarity – from “Pediatric Vertebral Body Tethering” to “Pediatric Vertebral Body Tethering (VBT) and Vertical Expandable Prosthetic Titanium Rib (VEPTR)”.</p> <p>For VBT, added “bracing” to the indications for failure of conservative management. Removed indications for anti-inflammatory medications, non-opioid analgesics, prescription medications, and corticosteroids.</p> <p>For VBT and VEPTR, added the indication “the procedure is performed at a Center of Excellence (COE) specialized in anterior spinal surgery.”</p> <p>Added indication for VEPTR in cases of progressive thoracic insufficiency syndrome, scoliosis, complex spinal deformities, or chest wall defects.</p> <p>For VEPTR, revised the nutrition status under preoperative evaluation.</p> <p>Expanded non-indications section for both vertebral body tethering and vertical expandable prosthetic titanium ribs.</p> |

|  |  |                                                              |
|--|--|--------------------------------------------------------------|
|  |  | Expanded the Medical Evidence section;<br>added 3 citations. |
|--|--|--------------------------------------------------------------|





# **Cohere Medical Policy – Pediatric Vertebral Body Tethering**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 1  
**Effective Date:** August 8, 2024

# Important Notices

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## Guideline Information:

**Specialty Area:** Diseases & Disorders of the Musculoskeletal System (M00-M99)

**Guideline Name:** Cohere Medical Policy - Pediatric Vertebral Body Tethering

**Literature review current through:** 8/2/2024

**Document last updated:** 8/7/2024

**Type:** ☐ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## **Service: Pediatric Vertebral Body Tethering**

### **Recommended Clinical Approach**

Vertebral body tethering uses hardware such as screws and cords that are implanted near the curved area of a spine with scoliosis. The cords are tightened, thereby purported to straighten the spine. The procedure requires only small incisions.<sup>1-5</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ **Pediatric vertebral body tethering** is considered appropriate if **ANY** of the following is **TRUE**<sup>1-18</sup>:

- ◆ Vertebral body tethering is considered appropriate if **ALL** of the following are **TRUE**:
  - Spinal curve progression following conservative management, which can include observation, exercise therapy, or bracing; **AND**
  - Radiographs demonstrating a Cobb angle of 40 to 60 degrees; **AND**
  - Spinal curve flexibility greater than 30%; **AND**
  - Skeletal immaturity if **ANY** of the following is **TRUE**:
    - Risser grade 0 or 1; **OR**
    - Sanders Maturity Scale less than or equal to 4; **OR**
- ◆ Vertical expandable prosthetic titanium rib is considered appropriate if **ALL** of the following are **TRUE**:
  - The patient is skeletally immature, between 6 months and skeletal maturity if **ANY** of the following are **TRUE**:
    - Risser grade 0 or 1; **OR**
    - Sanders Maturity Scale less than or equal to 4; **AND**
  - Treat progressive thoracic insufficiency due to rib and/or chest wall defects; **AND**
  - Implantation of the device should be done in specialized centers given the complexity of these procedures; **AND**

- Preoperative evaluation has been done with the evaluation of **ALL** of the following:
  - Nutrition status; **AND**
  - Cardiac status; **AND**
  - Pulmonary function.

### Non-Indications

→ **Pediatric vertebral body tethering** is not considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Growing rods are being used (FDA device recall).

### Level of Care Criteria

Inpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                                                                       |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0656T          | Vertebral body tethering, anterior; up to 7 vertebral segments                                                                                                         |
| 0657T          | Vertebral body tethering, anterior; 8 or more vertebral segments                                                                                                       |
| 0790T          | Revision (e.g., augmentation, division of tether), replacement, or removal of thoracolumbar or lumbar vertebral body tethering, including thoracoscopy, when performed |
| 22836          | Anterior thoracic vertebral body tethering, including thoracoscopy, when performed; up to 7 vertebral segments                                                         |
| 22837          | Anterior thoracic vertebral body tethering, including thoracoscopy, when performed; 8 or more vertebral segments                                                       |
| 22838          | Revision (e.g., augmentation, division of tether), replacement, or removal of thoracic vertebral body tethering, including thoracoscopy, when performed                |
| 22899          | Unlisted procedure, spine                                                                                                                                              |

## Medical Evidence

The United States Food and Drug Administration (FDA) (2023) has approved the Tether Vertebral Body Tethering System for skeletally immature patients with progressive idiopathic scoliosis who have failed or not tolerated brace wear.<sup>1</sup> The FDA approved OrthoPediatrics (eLLi) Growing Rod System for scoliosis in 2024.

The Pediatric Orthopaedic Society of North America (POSNA) and the Scoliosis Research Society (SRS) (2020) jointly recommended the use of vertebral body tethering in skeletally immature patients only for the management of idiopathic scoliosis as part of shared decision-making.<sup>5</sup>

In 2017, the FDA approved the MAGEC (MAGnetic Expansion Control) Spinal Bracing and Distraction System for treating children with early onset scoliosis (EOS). The MAGEC system is a non-invasive treatment that uses adjustable growing rods controlled by magnets and an external remote control to help straighten a child's spine. The rods are implanted during surgery and then lengthened every 3 to 6 months as the child grows, which usually requires another surgery. The goal is to control the spinal deformity until the child has enough spinal and thoracic development, at which point they can consider definitive spinal fusion.<sup>6</sup>

According to Trobisch et al. (2024), vertebral body tethering is being used as a motion-preserving technique. In a retrospective review of 25 patients, thoracic curve correction averaged 55.4% and 71.7% for TL/L curves. Some patients did have breakage of the tether, but none required a posterior spinal fusion.<sup>7</sup>

Roser et al. (2023) performed a systematic review of cases using a tethering system and performed a meta-analysis of 16 studies. Vertebral body tethering resulted in a statistically significant reduction in Cobb angle, with an average reduction of 25 degrees. The most common complication was tether breakage; however, the consequence of this complication is unknown.<sup>10</sup>

Bednar et al. (2021) compared magnetically controlled growing rods with other distraction techniques through a systemic review and meta-analysis. In a review of 18 studies, they concluded that magnetically controlled growing

rods were as clinically effective as other technologies and noted a lower complication rate. They note that serum titanium levels were greater in patients with magnetically controlled growing rods, but the clinical impact is unclear.<sup>16</sup>

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# Clinical Guideline Revision History/Information

|                               |  |  |
|-------------------------------|--|--|
| Original Date: August 8, 2024 |  |  |
| Review History                |  |  |
|                               |  |  |
|                               |  |  |
|                               |  |  |



## **Cohere Medical Policy – Periacetabular Osteotomy/Surgical Dislocation**

*Clinical Policy for Medical Necessity Review*

**Version: 2**

**Cohere Health UMC Approval Date: July 31, 2025**

Last Annual Review: July 31, 2025

Revision: Not Applicable

Next Annual Review: July 31, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Periacetabular Osteotomy/Surgical Dislocation

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Periacetabular Osteotomy/Surgical Dislocation***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

A periacetabular osteotomy (PAO) is an orthopedic procedure to correct developmental hip deformities. During a PAO, the acetabulum is reoriented in the pelvis and then reattached to the nearby bone with screws. Anterior arthrotomy may also be performed during a PAO to evaluate the acetabular labrum to determine the necessity of an osteochondroplasty of the anterolateral femoral head-neck junction.<sup>1</sup>

## **Medical Necessity Criteria**

### **Indications**

**Periacetabular osteotomy/surgical dislocation** is considered appropriate if **ALL** of the following are **TRUE**:

- Advanced imaging demonstrates **ANY** of the following:
  - Femoroacetabular impingement (FAI) with evidence of cam impingement, with **ANY** of the following:
    - Alpha angle greater than 50 degrees; **OR**
    - Lateral center edge angle (LCEA) greater than 39 degrees; **OR**
    - Cross-over sign; **OR**
    - Pistol grip deformity; **OR**
  - Developmental dysplasia of the hip (DDH) with evidence of a LCEA less than 15 degrees<sup>2</sup>; **AND**
- The patient has **ANY** of the following<sup>1</sup>:
  - Bony morphology that prevents arthroscopic treatment; **OR**
  - Surgical dislocation of the hip is required to treat intra-articular and bony pathology; **AND**
- The patient has **ANY** of the following clinical symptoms:
  - Pain in hip, groin, buttocks, or thigh<sup>3-5</sup>; **OR**
  - Clicking, locking, catching, or giving way<sup>5</sup>; **OR**
  - Hip instability<sup>3</sup>; **OR**
  - Hip discomfort or pain that worsens with activities (e.g., prolonged sitting, prolonged standing, walking, climbing stairs, or running)<sup>4</sup>; **OR**
  - Stiffness in hip<sup>6</sup>; **OR**
  - Limping<sup>6</sup>; **AND**
- The patient has **ANY** of the following physical examination findings:
  - Positive impingement test; **OR**
  - FADIR test produces hip pain; **OR**
  - FABER test produces hip pain; **OR**

- Limited hip flexion and hip abduction; **OR**
- Limited internal rotation with the hip at 90° of flexion; **AND**
- Failure of conservative management for greater than 3 months, including **ALL** of the following:
  - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
  - Physical therapy or a physician-directed home exercise program; **AND**
  - **ANY** of the following:
    - Corticosteroid injection if medically appropriate<sup>7</sup>; **OR**
    - Documentation that corticosteroid injection is contraindicated.

## Non-Indications

**Periacetabular osteotomy/surgical dislocation** is not considered appropriate if **ANY** of the following is **TRUE**<sup>8</sup>:

- Severe osteoarthritis (Tönnis Grade 2 or 3, see below for the Tönnis Grading Scale of Hip Osteoarthritis); **OR**
- Subluxation resulting in a femoral head within a neo-acetabulum; **OR**
- A mismatch between a smaller acetabular radius and femoral head; **OR**
- Severe restriction in range of motion; **OR**
- Not skeletally mature.<sup>9</sup>

## Definitions

**FADIR (flexion, adduction, and internal rotation) Test:** The test begins with a supine patient. The examiner raises the patient's leg with their hip flexed to 90° and knee flexed to 90°. The examiner then adducts and internally rotates the hip. A positive result occurs when the patient reports groin pain.<sup>10</sup>

**FABER (flexion, abduction, and external rotation) Test:** A test to assess a suspected labral tear. The examination begins with a supine patient. The examiner places the patient in a figure-4 position with their hip flexed and abducted, with the lateral ankle resting on the contralateral thigh proximal to the knee. The examiner then applies a gentle downward force against the knee of the abducted leg. A positive result occurs when the patient reports groin pain on the affected side.<sup>10</sup>



### Tönnis Grading Scale of Hip Osteoarthritis<sup>11</sup>

| Grade | Radiographic Features                                                                                                                                                                                   |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0     | <ul style="list-style-type: none"><li>- No signs of osteoarthritis</li></ul>                                                                                                                            |
| 1     | <ul style="list-style-type: none"><li>- Slight narrowing of joint space</li><li>- Slight lipping at the joint margin</li><li>- Slight sclerosis of the femoral head or acetabulum</li></ul>             |
| 2     | <ul style="list-style-type: none"><li>- Small cysts in the femoral head or acetabulum</li><li>- Increasing narrowing of joint space</li><li>- Moderate loss of sphericity of the femoral head</li></ul> |
| 3     | <ul style="list-style-type: none"><li>- Large cysts</li><li>- Severe narrowing or obliteration of joint space</li><li>- Severe deformity of the femoral head</li><li>- Avascular necrosis</li></ul>     |

### Level of Care Criteria

Inpatient or Outpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                |
|----------------|-------------------------------------------------|
| 27146          | Osteotomy, iliac, acetabular or innominate bone |
| 27299          | Unlisted procedure, pelvis or hip joint         |

# Medical Evidence

Curley et al. (2023) conducted a systematic review to evaluate the return to sports (RTS) for patients with symptomatic hip dysplasia who underwent a periacetabular osteotomy (PAO). Six studies included 341 patients who participated in various sports. Two studies reported a RTS rate of 82% and 80%; rates among competitive athletes were lower (78% and 73%). A study of dancers demonstrated a 63% RTS rate. Additional studies reported rates of RTS for sports. Athletes participating in low, moderate, and high-impact sports reported a significant increase postoperatively.<sup>12</sup>

Tan et al. (2021) performed a systematic review and meta-analysis on PAO for acetabular retroversion. The objectives of the review included identifying indications and possible concomitant procedures, as well as predicted clinical outcomes and potential complications. Seven studies were analyzed that included a total of 225 hips. The rate of complications was 31.6% (low-grade) and 12.0% (high-grade). Overall, 7.1% required additional procedures due to symptoms of impingement or osteoarthritis progression.<sup>4</sup>

Kamath (2016) described Bernese PAO for hip dysplasia. Though technically demanding, the procedure has demonstrated success in mid- and long-term clinical studies over the past 30 years. The literature stated that pelvic osteotomy is a preferred alternative to arthroplasty in young, active patients with correctable structural hip deformities. The authors also noted that the procedure has long-term survivorship with preserved cartilage and physical rehabilitation.<sup>8</sup>

Coobs et al. (2015) reviewed PAO for hip dysplasia in the young adult hip patient. In recent years, obesity has been found to contribute significantly to the risk of major complications with PAO surgery. Obese patients demonstrated a 22.3% risk of major postoperative complications compared with 3.1% of non-obese patients. A systematic review of 13 studies involving 626 hips with 2-5 year follow-ups yielded reliable deformity correction with PAO and significant improvements in hip function.<sup>13</sup>

Zebala et al. (2007) completed a systematic review regarding anterior femoroacetabular impingement (FAI). The usage of the PAO is discussed as a reconstructive option for the management of acetabular dysplasia, and the group stated that severe acetabular retroversion is the main indication for a PAO in the treatment of impingement. The authors cited a study where 26 of 29 patients with symptomatic FAI from acetabular retroversion reported excellent outcomes post-osteotomy. The procedure is generally combined with an anterior arthrotomy and osteochondroplasty as necessary.<sup>1</sup>

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# Policy Revision History/Information

| Original Date: May 28, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Version 2                   | 07/31/2025 | <p>Annual review.</p> <p>Rearranged bullets for improved usability and organization.</p> <p>Updated indication for femoroacetabular impingement (FAI) with evidence of cam impingement with ANY of the following:</p> <ul style="list-style-type: none"> <li>• Alpha angle greater than 50 degrees; OR</li> <li>• Lateral center edge angle (LCEA) greater than 39 degrees; OR</li> <li>• Cross-over sign; OR</li> <li>• Pistol grip deformity; OR</li> </ul> <p>Updated the indication for "developmental dysplasia of the hip (DDH)" to include "with evidence of a LCEA less than 15 degrees."</p> <p>Under the indications for required "clinical symptoms", added "hip" to now read "hip discomfort or pain that worsens with activities (e.g., prolonged sitting, prolonged standing, walking, climbing stairs, or running)." Also, added "in hip" to the indication for "stiffness."</p> <p>Under the indications for required "physical examination findings", deleted "flexed knee gait while walking."</p> |

|  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>Standard failure of conservative management language was updated per the Style Guide. Revised the indication from “oral steroids, anti-inflammatory medications, or analgesics” to “anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated.” Also added to the indication for “physical therapy” to state “or a physician-directed home exercise program.” Added reference (Foster et al., 2015) for corticosteroid indication.</p> <p>Added non-indication for "not skeletally mature" (Millis et al., 2018).</p> <p>Removed indication for “no evidence of advanced degenerative osteoarthritis (Tönnis Grade 2 to 3)” as it is included in the non-indication section.</p> <p>Literature review – Medical Evidence section updated (Curley et al., 2023; Tan et al., 2021).</p> |
|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



# **Cohere Medical Policy - Physical and Occupational Therapy (PT/OT)**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 4  
**Effective Date:** September 26, 2024



# Important Notices

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## Guideline Information:

**Specialty Area:** Diseases & Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy – Physical and Occupational Therapy (PT/OT)

**Literature review current through:** 9/18/2024

**Document last updated:** 9/26/2024

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

**Service: Physical and Occupational Therapy (PT/OT)**

## Recommended Clinical Approach

Treatment should be ordered by a physician or licensed healthcare practitioner (unless in a state with direct access). Treatment requires the judgment, knowledge, and skills of a licensed and certified physical or occupational therapist and cannot be reasonably learned and implemented by non-professional or lay caregivers. Care delivered by a PT Assistant must be under the plan of care of a Physical Therapist with appropriate oversight as defined by the local jurisdiction. Care delivered by a certified OT Assistant must be under the plan of care (POC) of an Occupational Therapist with appropriate oversight as defined by the local jurisdiction. Treatment meets generally accepted standards of practice and is targeted and effective in treating the patient's diagnosed impairment or condition. Treatment is expected to produce clinically significant and measurable improvement in the patient's level of functioning within a reasonable and medically predictable period of time; alternatively, the treatment is part of a medically necessary program to prevent significant functional regression.

## Medical Necessity Criteria

### Indications

→ **Physical therapy (PT) and occupational therapy (OT)** are considered appropriate if **ALL** of the following are **TRUE**<sup>1-15</sup>:

- ◆ Therapy services are provided or supervised by a qualified physical or occupational therapist; **AND**
- ◆ The number of visits requested is appropriate for the diagnosis;  
**AND**
- ◆ **ANY** of the following is **TRUE**:
  - The therapy is outpatient; **OR**
  - The therapy is inpatient due to **ALL** of the following:
    - Treatment is required from a multidisciplinary team to include **TWO** of the following:
      - ◆ Physical therapy; **OR**

- ◆ Occupational therapy; **OR**
- ◆ Speech therapy; **AND**
- **ANY** of the following medical complications:
  - ◆ Occurring immediately following amputation; **OR**
  - ◆ Major multiple trauma; **OR**
  - ◆ Post-acute stroke; **OR**
  - ◆ Severe burn injury; **AND**
- Documentation in the medical record must include **ALL** of the following:
  - ◆ Clinical rationale for rehabilitation in an inpatient facility; **AND**
  - ◆ Relevant medical history to this inpatient stay, rehabilitation potential, prior level of function; **AND**
  - ◆ Plan of care must include current functional status with specific and measurable goals, and the progress towards those goals; **AND**
- ◆ **ANY** of the following:
  - Initial PT and/or OT treatment are considered appropriate if **ANY** of the following is **TRUE**:
    - The patient exhibits signs and symptoms of a functional or physical impairment as evidenced by **ANY** of the following:
      - ◆ The inability to perform basic activities of daily living (ADLs) (e.g., functional mobility, feeding, dressing, bathing, or toileting); **OR**
      - ◆ Instrumental activities of daily living (IADLs) (e.g., making a bed); **OR**
      - ◆ Usual daily activities; **OR**
    - The patient exhibits signs and symptoms of physical deterioration or impairment in **ANY** of the following areas:
      - ◆ Sensory and/or motor ability (e.g., problems with sensory integration, cranial and peripheral nerve integrity, ergonomics and body mechanics, joint integrity and mobility, motor function, muscle performance, neuromotor

- development, posture, range of motion, or sensory integrity); **OR**
  - ◆ Skin and circulation (e.g., integumentary integrity or circulation); **OR**
- Continued PT and/or OT treatment are considered appropriate if **ALL** of the following are **TRUE**:
  - Intermittent progress notes should demonstrate that the patient is making functional progress related to the treatment goals and that they are expected to continue to improve to reflect that continued services are medically necessary – progress reports must include **ALL** of the following:
    - ◆ Start of care date, date of treatment, and time period covered by the report; **AND**
    - ◆ The patient's function at the beginning of the progress report period; **AND**
    - ◆ The patient's current status as compared to evaluation baseline data and the prior progress reports, including objective measures of patient performance in functional terms that relate to the treatment goals; **AND**
    - ◆ All progress toward the goals in objective, measurable terms using consistent and comparable methods; **AND**
    - ◆ If the patient is not making progress expected, describe any changes in prognosis, plan of care (POC), and goals and why; **AND**
    - ◆ Consultations with other professionals or coordination of services, if applicable; **OR**
- Re-evaluation for occupational therapy and/or physical therapy treatment is considered appropriate if **ALL** of the following are **TRUE**:
  - Re-evaluations for patients who are already receiving therapy and develop a new condition or significant change in functional status that was not anticipated and requires additional evaluation; **AND**
  - Re-evaluations should include current standardized assessment scores, age equivalents, percentage of functional delay, criterion-referenced scores, or other

objective information as appropriate for the patient's condition or impairment; **AND**

- The therapy re-evaluation report should include **ALL** of the following:
  - ◆ Date of last therapy evaluation or re-evaluation; **AND**
  - ◆ Number of therapy visits authorized, and number of therapy visits attended; **AND**
  - ◆ Adherence to home program; **AND**
  - ◆ Description of the patient's current deficits and their severity level documented using objective data; **AND**
  - ◆ Objective demonstration of the patient's progress toward each treatment goal, including **ANY** of the following:
    - Using consistent and comparable methods to report progress on long- and short-term treatment goals established; **OR**
    - For all unmet goals, baseline and current function should be used to measure the patient's progress toward goals; **AND**
  - ◆ An updated statement of the prescribed treatment modalities and their recommended frequency/duration; **AND**
  - ◆ A brief prognosis with clearly established discharge criteria; **AND**
  - ◆ An updated or revised, individualized POC must include updated measurable, functional and time-based goals, including **ALL** of the following:
    - The updated POC summary should not be older than 90 days; **AND**
    - If the majority of the long and short-term goals were not achieved, the plan of care should include a description of the barriers or an explanation of why the goal(s) needed to be modified or discontinued; **AND**

- The notation of the percentage accuracy towards the patient's goals must be in combination with the other indications.

## Non-Indications

→ **Physical therapy (PT) and occupational therapy (OT) evaluation and treatment services** are not considered appropriate if **ANY** of the following is **TRUE**<sup>1-15</sup>:

- ◆ Unattended electrical stimulation when used for peripheral neuropathy; **OR**
- ◆ Work hardening and conditioning; **OR**
- ◆ Maintenance therapy, including services that involve non-diagnostic, non-therapeutic, routine, or repetitive procedures to maintain general welfare and do not require the skilled assistance of a licensed physical or occupational therapist (the establishment of a maintenance program, and the training of the patient, patient's family, or other persons to carry it out is reimbursed as part of a regular treatment visit, not as a separate service); **OR**
- ◆ Assistive and mobility devices to assist with functional abilities and activities of daily living; **OR**
- ◆ Low-level laser therapy (e.g., nonthermal and non-ablative) for post-operative pain reduction; **OR**
- ◆ Therapy intended to restore or improve function after a temporary functional or physical impairment that could be reasonably expected to improve without such therapy when the patient resumes activities; **OR**
- ◆ Therapy that duplicates services that are provided concurrently by any other type of therapy, such as PT and speech and language therapy, which should provide different treatment goals, plans, and therapeutic modalities; **OR**
- ◆ Therapy for which there is no clinical documentation or POC to support the need for PT or OT services or continuing therapy.

## Level of Care Criteria

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description/Definition</b>                                                                                                                                                                                                        |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0733T                 | Remote body and limb kinematic measurement-based therapy ordered by a physician or other qualified health care professional; supply and technical support, per 30 days                                                                    |
| 0734T                 | Remote body and limb kinematic measurement-based therapy ordered by a physician or other qualified health care professional; treatment management services by a physician or other qualified health care professional, per calendar month |
| 97010                 | Any physical agent applied to produce therapeutic changes to biologic tissue; includes but not limited to thermal, acoustic, light, mechanical, or electric energy                                                                        |
| 97012                 | Application of modality to one or more areas; traction, mechanical                                                                                                                                                                        |
| 97014                 | Application of a modality to 1 or more areas; electrical stimulation (unattended)                                                                                                                                                         |
| 97016                 | Application of a modality to 1 or more areas; vasopneumatic devices                                                                                                                                                                       |
| 97018                 | Application of a modality to 1 or more areas; paraffin bath                                                                                                                                                                               |
| 97022                 | Application of a modality to 1 or more areas; whirlpool                                                                                                                                                                                   |
| 97024                 | Application of a modality to 1 or more areas; diathermy (e.g., microwave)                                                                                                                                                                 |
| 97026                 | Application of a modality to 1 or more areas; infrared                                                                                                                                                                                    |
| 97028                 | Application of a modality to 1 or more areas; ultraviolet                                                                                                                                                                                 |
| 97032                 | Application of a modality to 1 or more areas; electrical stimulation (manual), each 15 minutes                                                                                                                                            |



|       |                                                                                                                                                                                                                 |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 97033 | Application of a modality to 1 or more areas; iontophoresis, each 15 minutes                                                                                                                                    |
| 97034 | Application of a modality to 1 or more areas; contrast baths, each 15 minutes                                                                                                                                   |
| 97035 | Application of a modality to 1 or more areas; ultrasound, each 15 minutes                                                                                                                                       |
| 97036 | Application of a modality to 1 or more areas; hubbard tank, each 15 minutes                                                                                                                                     |
| 97037 | Application of a modality to 1 or more areas; low-level laser therapy (i.e., nonthermal and non-ablative) for post-operative pain reduction                                                                     |
| 97039 | Unlisted modality (specify type and time if constant attendance)                                                                                                                                                |
| 97110 | Therapeutic procedure, 1 or more areas, each 15 minutes; therapeutic exercises to develop strength and endurance, range of motion and flexibility                                                               |
| 97112 | Therapeutic procedure, 1 or more areas, each 15 minutes; neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture, and/or proprioception for sitting and/or standing activities |
| 97113 | Therapeutic procedure, 1 or more areas, each 15 minutes; aquatic therapy with therapeutic exercises                                                                                                             |
| 97116 | Therapeutic procedure, 1 or more areas, each 15 minutes; gait training (includes stair climbing)                                                                                                                |
| 97124 | Therapeutic procedure, 1 or more areas, each 15 minutes; massage, including effleurage, petrissage, and/or tapotement (stroking, compression, percussion)                                                       |
| 97129 | Therapeutic interventions that focus on cognitive function (e.g., attention, memory, reasoning, executive function, problem solving and/or pragmatic                                                            |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | functioning) and compensatory strategies to manage the performance of an activity (e.g., managing time or schedules, initiating, organizing and sequencing tasks), direct (one-on-one) patient contact; initial 15 minutes                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 97130 | Therapeutic interventions that focus on cognitive function (e.g., attention, memory, reasoning, executive function, problem solving and/or pragmatic functioning) and compensatory strategies to manage the performance of an activity (e.g., managing time or schedules, initiating, organizing and sequencing tasks), direct (one-on-one) patient contact; each additional 15 minutes (List separately in addition to code for primary procedure)                                                                                                                                                                                                                                         |
| 97139 | Unlisted therapeutic procedure (specify)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 97140 | Manual therapy techniques (e.g., mobilization/manipulation, manual lymphatic drainage, manual traction), 1 or more regions, each 15 minutes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 97150 | Therapeutic procedure(s), group (2 or more individuals)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 97161 | Physical therapy evaluation: low complexity, requiring these components: A history with no personal factors and/or comorbidities that impact the plan of care; An examination of body system(s) using standardized tests and measures addressing 1-2 elements from any of the following: body structures and functions, activity limitations, and/or participation restrictions; A clinical presentation with stable and/or uncomplicated characteristics; and Clinical decision making of low complexity using standardized patient assessment instrument and/or measurable assessment of functional outcome. Typically, 20 minutes are spent face-to-face with the patient and/or family. |
| 97162 | Physical therapy evaluation: moderate complexity, requiring these components: A history of present problem with 1-2 personal factors and/or comorbidities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|       | <p>that impact the plan of care; An examination of body systems using standardized tests and measures in addressing a total of 3 or more elements from any of the following: body structures and functions, activity limitations, and/or participation restrictions; An evolving clinical presentation with changing characteristics; and Clinical decision making of moderate complexity using standardized patient assessment instrument and/or measurable assessment of functional outcome. Typically, 30 minutes are spent face-to-face with the patient and/or family.</p>                                                                                                                                                              |
| 97163 | <p>Physical therapy evaluation: high complexity, requiring these components: A history of present problem with 3 or more personal factors and/or comorbidities that impact the plan of care; An examination of body systems using standardized tests and measures addressing a total of 4 or more elements from any of the following: body structures and functions, activity limitations, and/or participation restrictions; A clinical presentation with unstable and unpredictable characteristics; and Clinical decision making of high complexity using standardized patient assessment instrument and/or measurable assessment of functional outcome. Typically, 45 minutes are spent face-to-face with the patient and/or family.</p> |
| 97164 | <p>Re-evaluation of physical therapy established plan of care, requiring these components: An examination including a review of history and use of standardized tests and measures is required; and Revised plan of care using a standardized patient assessment instrument and/or measurable assessment of functional outcome Typically, 20 minutes are spent face-to-face with the patient and/or family.</p>                                                                                                                                                                                                                                                                                                                              |
| 97165 | <p>Occupational therapy evaluation, low complexity, requiring these components: An occupational profile and medical and therapy history, which includes a brief</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|       | <p>history including review of medical and/or therapy records relating to the presenting problem; An assessment(s) that identifies 1-3 performance deficits (ie, relating to physical, cognitive, or psychosocial skills) that result in activity limitations and/or participation restrictions; and Clinical decision making of low complexity, which includes an analysis of the occupational profile, analysis of data from problem-focused assessment(s), and consideration of a limited number of treatment options. Patient presents with no comorbidities that affect occupational performance. Modification of tasks or assistance (eg, physical or verbal) with assessment(s) is not necessary to enable completion of evaluation component. Typically, 30 minutes are spent face-to-face with the patient and/or family.</p>                                                                                                                                                                                                                                                   |
| 97166 | <p>Occupational therapy evaluation, moderate complexity, requiring these components: An occupational profile and medical and therapy history, which includes an expanded review of medical and/or therapy records and additional review of physical, cognitive, or psychosocial history related to current functional performance; An assessment(s) that identifies 3-5 performance deficits (ie, relating to physical, cognitive, or psychosocial skills) that result in activity limitations and/or participation restrictions; and Clinical decision making of moderate analytic complexity, which includes an analysis of the occupational profile, analysis of data from detailed assessment(s), and consideration of several treatment options. Patient may present with comorbidities that affect occupational performance. Minimal to moderate modification of tasks or assistance (eg, physical or verbal) with assessment(s) is necessary to enable patient to complete evaluation component. Typically, 45 minutes are spent face-to-face with the patient and/or family.</p> |
| 97167 | <p>Occupational therapy evaluation, high complexity,</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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|       | <p>requiring these components: An occupational profile and medical and therapy history, which includes review of medical and/or therapy records and extensive additional review of physical, cognitive, or psychosocial history related to current functional performance; An assessment(s) that identifies 5 or more performance deficits (ie, relating to physical, cognitive, or psychosocial skills) that result in activity limitations and/or participation restrictions; and Clinical decision making of high analytic complexity, which includes an analysis of the patient profile, analysis of data from comprehensive assessment(s), and consideration of multiple treatment options. Patient presents with comorbidities that affect occupational performance. Significant modification of tasks or assistance (eg, physical or verbal) with assessment(s) is necessary to enable patient to complete evaluation component. Typically, 60 minutes are spent face-to-face with the patient and/or family.</p> |
| 97168 | <p>Re-evaluation of occupational therapy established plan of care, requiring these components: An assessment of changes in patient functional or medical status with revised plan of care; An update to the initial occupational profile to reflect changes in condition or environment that affect future interventions and/or goals; and A revised plan of care. A formal reevaluation is performed when there is a documented change in functional status or a significant change to the plan of care is required. Typically, 30 minutes are spent face-to-face with the patient and/or family.</p>                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 97530 | <p>Therapeutic activities, direct (one-on-one) patient contact (use of dynamic activities to improve functional performance), each 15 minutes</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 97533 | <p>Sensory integrative techniques to enhance sensory processing and promote adaptive responses to</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|       | environmental demands, direct (one-on-one) patient contact, each 15 minutes                                                                                                                                                                                                           |
| 97535 | Self-care/home management training (e.g., activities of daily living (ADL) and compensatory training, meal preparation, safety procedures, and instructions in use of assistive technology devices/adaptive equipment) direct one-on-one contact, each 15 minutes                     |
| 97537 | Community/work reintegration training (e.g., shopping, transportation, money management, avocational activities and/or work environment/modification analysis, work task analysis, use of assistive technology device/adaptive equipment), direct one-on-one contact, each 15 minutes |
| 97542 | Wheelchair management (e.g., assessment, fitting, training), each 15 minutes                                                                                                                                                                                                          |
| 97545 | Work hardening/conditioning; initial 2 hours                                                                                                                                                                                                                                          |
| 97546 | Add-on code for work conditioning                                                                                                                                                                                                                                                     |
| 97750 | Physical performance test or measurement (e.g., musculoskeletal, functional capacity), with written report, each 15 minutes                                                                                                                                                           |
| 97755 | Assistive technology assessment (e.g., to restore, augment or compensate for existing function, optimize functional tasks and/or maximize environmental accessibility), direct one-on-one contact, with written report, each 15 minutes                                               |
| 97760 | Orthotic(s) management and training (including assessment and fitting when not otherwise reported), upper extremity(ies), lower extremity(ies) and/or trunk, initial orthotic(s) encounter, each 15 minutes                                                                           |
| 97761 | Prosthetic(s) training, upper and/or lower extremity(ies), initial prosthetic(s) encounter, each 15 minutes                                                                                                                                                                           |

|       |                                                                                                                                                                                                     |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 97763 | Orthotic(s)/prosthetic(s) management and/or training, upper extremity(ies), lower extremity(ies), and/or trunk, subsequent orthotic(s)/prosthetic(s) encounter, each 15 minutes                     |
| 97799 | Unlisted physical medicine/rehabilitation service or procedure                                                                                                                                      |
| G0129 | Occupational therapy services requiring the skills of a qualified occupational therapist, furnished as a component of a partial hospitalization treatment program, per session (45 minutes or more) |
| G0283 | Electrical stimulation (unattended), to one or more areas for indication(s) other than wound care, as part of a therapy plan of care                                                                |

## Medical Evidence

Proud et al. (2024) systematically reviewed exercises to improve hand dexterity in patients with Parkinson's disease (PD). The review included 18 randomized control trials (RCTs) with 704 patients. Activities included dexterity exercises, functional task training, and constraint-induced movement therapy. Patient dexterity was evaluated using a number of assessments (e.g., 9-Hole Peg Test, Purdue Pegboard Test, Box and Block Test, Jebsen-Taylor Hand Function Test, Coin Rotation Task, Action Research Arm Test, and Soda Pop Test). Hand function was self-reported (e.g., Manual Ability Measure, Dexterity Questionnaire, and Duruoz Hand Index). Tablet-based or customized paper/pen tests measured the speed and amplitude of patient handwriting. The quality of evidence was moderate and demonstrated a small positive effect on within-hand dexterity (SMD=0.26; 95% CI 0.07, 0.44). Evidence supports the use of physical therapy (PT), including hand-specific exercises for patients with PD.<sup>16</sup>

Peng et al. (2022) conducted a 3-month, single-blind RCT to determine the long-term outcomes of therapeutic aquatic exercise for individuals with low back pain. Each individual was randomized to a group - the aquatic exercise group (n = 56) received aquatic therapy alone, while the PT group (n = 57) received therapy with transcutaneous electrical nerve stimulation and infrared ray thermal therapy. Sessions were conducted for 60 minutes twice a week during the 3-month trial; follow-up was 12 months (n = 98). The aquatic exercise group demonstrated "greater alleviation of disability" - adjusted mean group differences were -1.77 following therapeutic aquatic exercise, -2.42 at the 6-month follow-up, and -3.61 at the 12-month follow-up.<sup>17</sup>

Forsythe et al. (2021) performed a systematic review and network meta-analysis on interventions for treating adhesive capsulitis. A total of 66 studies (4042 shoulders) were included. Cohorts were organized by treatment type, including physical therapy (PT), pain injection, and arthroscopic surgical capsular release. The authors found that PT with medical or ultrasound therapy demonstrated a high level of efficacy for pain relief. PT was also effective in improving functional status and range of motion. Overall, the results show that one treatment is not superior - manipulation under anesthesia (MUA), surgical procedures, and injections without PT also demonstrate high patient outcomes.<sup>18</sup>



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# Clinical Guideline Revision History/Information

|                                  |            |                                            |
|----------------------------------|------------|--------------------------------------------|
| Original Date: November 20, 2020 |            |                                            |
| Review History                   |            |                                            |
| Version 2                        | 6/30/2023  |                                            |
| Version 3                        | 12/29/2023 |                                            |
| Version 4                        | 9/19/2024  | Annual review and indications restructure. |



# **Cohere Medical Policy – Physical and Occupational Therapy (PT/OT)**

*Clinical Policy for Medical Necessity Review*

**Version: 5**

**Cohere Health UMC Approval Date: October 16, 2025**

Last Annual Review: October 16, 2025

Revision: Not Applicable

Next Annual Review: October 16, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Physical and Occupational Therapy (PT/OT)

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Physical and Occupational Therapy (PT/OT)***

Cohere Health takes an evidence-based approach to reviewing therapy procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. For initial requests, documentation must include:

- A medical history, including relevant clinical background and events leading to initiation of therapy
- Severity of the patient's functional impairment based on objective measures or patient-reported outcome measures (PROMs)
- Objective physical measures related to onset or change in symptoms
- Relevant functional outcome measure(s)
- A plan of care with therapeutic goals

For subsequent requests beyond the initial request, the following additional information is required:

- The patient's response to skilled care and treatment
- The patient's progress toward established goals or revision/addition of goals
- Clinical rationale supporting the need for continued skilled therapy

When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.



## **Description**

Broadly, physical therapy is the diagnosis and management of movement deficits or disorders through examination, evaluation, referral, consultation, and intervention. This can include restoring, maintaining, or promoting bodily function and purposeful action appropriate to the patient's age and development.<sup>1,2</sup> Physical therapy (PT) treatment consists of a prescribed program to relieve symptoms, improve function, and prevent decline or disability. Procedural interventions are selected based on the needs and goals of the individual, and the clinical reasoning and decision-making of the physical therapist or the clinical problem-solving of the physical therapist assistant under the direction and supervision of a physical therapist. Physical therapy includes education and a biopsychosocial approach to care utilizing a broad range of modalities, procedures, and digital interventions. Throughout therapy, progress toward treatment goals is monitored through data collection and reassessment, and treatment strategies are adjusted as needed.

Occupational therapy involves evaluation, diagnosis, treatment planning, and interventions to support developing, recovering, or maintaining the skills required for age-appropriate self-care, work, education, and community participation.<sup>3</sup> Occupational therapy interventions include task-specific training, education, environmental modifications, and adaptive technologies. Throughout therapy, progress toward treatment goals is monitored through data collection and reassessment, and treatment strategies are adjusted as needed.

Treatment requires the judgment, knowledge, and skills of a licensed and certified physical or occupational therapist and cannot be reasonably learned and implemented by non-professional or lay caregivers. When delivered by a PT assistant (PTA) or OT assistant (OTA), care must be under the plan of care of a therapist with appropriate oversight as defined by the local jurisdiction. Treatment must meet generally accepted standards of practice and be targeted and effective in addressing the patient's diagnosed impairment or condition. Treatment is expected to produce clinically significant and/or presenting condition measurable improvement in the patient's level of functioning within a reasonable and medically predictable period of time; alternatively, the treatment is part of a medically necessary program intended to prevent significant functional decline. In such cases,

documentation is expected to demonstrate that the patient will experience significant regression in the absence of skilled intervention.

## **Medical Necessity Criteria**

### **Indications**

**Physical therapy (PT) and occupational therapy (OT)** are considered appropriate if **ALL** of the following are **TRUE**:

- Therapy services are provided or supervised by a qualified physical or occupational therapist<sup>4-8</sup>; **AND**
- **ANY** of the following:
  - The therapy occurs in an outpatient setting; **OR**
  - The therapy occurs in an inpatient setting with **ALL** of the following:
    - Treatment is required from a multidisciplinary team including **AT LEAST TWO** of the following<sup>9-11</sup>:
      - Physical therapy; **OR**
      - Occupational therapy; **OR**
      - Speech therapy; **AND**
    - **ANY** of the following:
      - Amputation<sup>12,13</sup>; **OR**
      - Major multiple trauma<sup>14</sup>; **OR**
      - Severe burn injury<sup>15</sup>; **OR**
      - Stroke<sup>16</sup>; **OR**
      - Spinal cord injury<sup>17,18</sup>; **AND**
    - Documentation in the medical record includes **ALL** of the following<sup>19</sup>:
      - Clinical rationale for rehabilitation in an inpatient facility; **AND**
      - Medical history relevant to this inpatient stay, rehabilitation potential, prior level of function; **AND**
      - Plan of care must include current functional status with specific and measurable goals, and progress toward those goals; **AND**
- The plan of care demonstrates medical necessity as indicated by **ALL** of the following<sup>19-21</sup>:
  - Documentation of functional or physical impairment, including **ANY** of the following:
    - Relevant objective measures of impairment severity or extent of deficit<sup>8,22-24</sup>; **OR**
    - Patient-reported outcome measures (PROMs)<sup>8,22-24</sup>; **AND**
  - Objective measures used to quantify progress or support continued treatment<sup>8,22-24</sup>; **AND**

- Long- and short-term goals of treatment that are specific and quantifiable (measurable)<sup>8,22-24</sup>; **AND**
- The amount, frequency, and duration of treatments are appropriate for the patient and diagnosis<sup>8,25,26</sup>; **AND**
- **ANY** of the following:
  - Reasonable expectation of recovery or improvement in function to support onset or continuation of treatment; **OR**
  - For re-evaluation: the patient is already receiving therapy and **ALL** of the following:
    - The patient develops a new condition or unanticipated significant change in functional status; **AND**
    - Documented justification that the patient requires additional evaluation; **AND**
    - Documentation of any changes to the interventions; **OR**
  - The patient requires skilled maintenance care with **ALL** of the following<sup>27</sup>:
    - Documentation that the patient requires skilled care<sup>A</sup> due to **ANY** of the following:
      - Maintenance of function is not possible without skilled care; **OR**
      - The skilled intervention is expected to prevent or delay further deterioration; **OR**
      - The patient is at imminent risk of an adverse event in the absence of a specific skilled intervention; **AND**
    - The plan of care, including number and frequency of visits, is consistent with the patient's condition and prognosis.

**Removal of devitalized tissue from wounds or non-selective debridement** is considered appropriate if **ALL** of the following are **TRUE**<sup>28</sup>:

- Documentation that medically skilled debridement is required including the type of technique used (e.g., wet-to-moist, enzymatic, abrasion); **AND**
- Documentation of objective wound assessment including drainage, color, texture, temperature, vascularity, condition of surrounding tissue, and size of area requiring debridement.

**Other unlisted PT/OT service** (CPT 97139) is considered appropriate when **ALL** of the following are **TRUE**:

- The service being requested does not have a specific CPT code; **AND**
- There is clear documentation demonstrating medical necessity.

## Non-Indications

**Physical therapy (PT) and occupational therapy (OT)** are not considered appropriate if **ANY** of the following is **TRUE**:

- Continuation of care for a patient not showing progress toward treatment goals without explanation, justification, or support for continued treatment; **OR**
- Unattended electrical stimulation when used for peripheral neuropathy; **OR**
- Work hardening and conditioning; **OR**
- Dry needling; **OR**
- Any service that does not require the skills of a licensed physical or occupational therapist<sup>A</sup> (the establishment of a home or self-management program, and the training of the patient, patient's family, or other persons to carry it out is reimbursed as part of a regular treatment visit, not as a separate service); **OR**
- Low-level laser therapy (e.g., nonthermal and non-ablative) for post-operative pain reduction; **OR**
- Extracorporeal shock wave therapy (ESWT); **OR**
- The physical or functional deficit is reasonably expected to improve without therapy; **OR**
- Therapy that duplicates services that are provided concurrently by any other type of therapy. Each discipline should identify unique goals and intent of intervention; **OR**
- Therapy for which there is no clinical documentation or plan of care to support the need for therapy services and/or continuing therapy; **OR**
- Use of more than one hydrotherapy modality in a single day; **OR**
- Hydrotherapy with no specific therapeutic purpose; **OR**
- The service being ordered is unclear and lacks appropriate documentation (e.g., unlisted code submitted without description of service requested).

## **Definitions**

**<sup>A</sup>Skilled care:** Care requiring the specific expertise, technical skills, or clinical judgement of a licensed physical or occupational therapist. The therapy, intervention, or treatment cannot be safely or effectively performed by the patient, a caregiver, or any other personnel (including a nurse, teacher, or other professional). Skilled care includes the supervision, clinical oversight, and management of physical therapy assistants, occupational therapy assistants, aides, or other support personnel and must be provided by a fully licensed therapist. Skilled care may be required due to the inherent complexity of an intervention or the patient's medical, physical, or functional condition.

**<sup>B</sup>Objective measures:** Reproducible, quantifiable physical assessments to assess physical or functional impairments or deficits. Examples include, but are not limited to, range of motion (ROM), muscle strength, functional tests (e.g., sit-to-stand), and balance tests (e.g., single-leg stance test).

**<sup>C</sup>Patient-reported outcome measures (PROMs):** Standardized questionnaires that assess the patient's experience of pain, function, activity limitations, and overall health and well-being. Examples include, but are not limited to the Victoria Institute of Sport Assessment – Achilles (VISA-A) and the international hip outcome tool- 12 (iHOT-12).

## **Level of Care Criteria**

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                        |
|-----------------------|------------------------------------------------------------------------------------------------|
| 20560                 | Needle insertion(s) without injection(s); 1 or 2 muscle(s)                                     |
| 20561                 | Needle insertion(s) without injection(s); 3 or more muscles                                    |
| 97010                 | Application of a modality to 1 or more areas; hot or cold packs                                |
| 97012                 | Application of modality to one or more areas; traction, mechanical                             |
| 97014                 | Application of a modality to 1 or more areas; electrical stimulation (unattended)              |
| 97016                 | Application of a modality to 1 or more areas; vasopneumatic devices                            |
| 97018                 | Application of a modality to 1 or more areas; paraffin bath                                    |
| 97022                 | Application of a modality to 1 or more areas; whirlpool                                        |
| 97024                 | Application of a modality to 1 or more areas; diathermy (e.g., microwave)                      |
| 97026                 | Application of a modality to 1 or more areas; infrared                                         |
| 97028                 | Application of a modality to 1 or more areas; ultraviolet                                      |
| 97032                 | Application of a modality to 1 or more areas; electrical stimulation (manual), each 15 minutes |
| 97033                 | Application of a modality to 1 or more areas; iontophoresis, each 15 minutes                   |
| 97034                 | Application of a modality to 1 or more areas; contrast baths, each 15 minutes                  |

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| 97035 | Application of a modality to 1 or more areas; ultrasound, each 15 minutes                                                                                                                                       |
| 97036 | Application of a modality to 1 or more areas; Hubbard tank, each 15 minutes                                                                                                                                     |
| 97037 | Application of a modality to 1 or more areas; low-level laser therapy (i.e., nonthermal and non-ablative) for post-operative pain reduction                                                                     |
| 97039 | Unlisted modality (specify type and time if constant attendance)                                                                                                                                                |
| 97110 | Therapeutic procedure, 1 or more areas, each 15 minutes; therapeutic exercises to develop strength and endurance, range of motion and flexibility                                                               |
| 97112 | Therapeutic procedure, 1 or more areas, each 15 minutes; neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture, and/or proprioception for sitting and/or standing activities |
| 97113 | Therapeutic procedure, 1 or more areas, each 15 minutes; aquatic therapy with therapeutic exercises                                                                                                             |
| 97116 | Therapeutic procedure, 1 or more areas, each 15 minutes; gait training (includes stair climbing)                                                                                                                |
| 97124 | Therapeutic procedure, 1 or more areas, each 15 minutes; massage, including effleurage, petrissage, and/or tapotement (stroking, compression, percussion)                                                       |
| 97129 | Therapeutic interventions that focus on cognitive function (e.g., attention, memory, reasoning, executive function, problem solving and/or pragmatic functioning) and compensatory                              |

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|       | strategies to manage the performance of an activity (e.g., managing time or schedules, initiating, organizing and sequencing tasks), direct (one-on-one) patient contact; initial 15 minutes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 97130 | Therapeutic interventions that focus on cognitive function (e.g., attention, memory, reasoning, executive function, problem solving and/or pragmatic functioning) and compensatory strategies to manage the performance of an activity (e.g., managing time or schedules, initiating, organizing and sequencing tasks), direct (one-on-one) patient contact; each additional 15 minutes (List separately in addition to code for primary procedure)                                                                                                                                                                                                                                         |
| 97139 | Unlisted therapeutic procedure (specify)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 97140 | Manual therapy techniques (e.g., mobilization/manipulation, manual lymphatic drainage, manual traction), 1 or more regions, each 15 minutes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 97150 | Therapeutic procedure(s), group (2 or more individuals)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 97161 | Physical therapy evaluation: low complexity, requiring these components: A history with no personal factors and/or comorbidities that impact the plan of care; An examination of body system(s) using standardized tests and measures addressing 1-2 elements from any of the following: body structures and functions, activity limitations, and/or participation restrictions; A clinical presentation with stable and/or uncomplicated characteristics; and Clinical decision making of low complexity using standardized patient assessment instrument and/or measurable assessment of functional outcome. Typically, 20 minutes are spent face-to-face with the patient and/or family. |
| 97162 | Physical therapy evaluation: moderate complexity,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |



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|       | <p>requiring these components: A history of present problem with 1-2 personal factors and/or comorbidities that impact the plan of care; An examination of body systems using standardized tests and measures in addressing a total of 3 or more elements from any of the following: body structures and functions, activity limitations, and/or participation restrictions; An evolving clinical presentation with changing characteristics; and Clinical decision making of moderate complexity using standardized patient assessment instrument and/or measurable assessment of functional outcome. Typically, 30 minutes are spent face-to-face with the patient and/or family.</p>                                                      |
| 97163 | <p>Physical therapy evaluation: high complexity, requiring these components: A history of present problem with 3 or more personal factors and/or comorbidities that impact the plan of care; An examination of body systems using standardized tests and measures addressing a total of 4 or more elements from any of the following: body structures and functions, activity limitations, and/or participation restrictions; A clinical presentation with unstable and unpredictable characteristics; and Clinical decision making of high complexity using standardized patient assessment instrument and/or measurable assessment of functional outcome. Typically, 45 minutes are spent face-to-face with the patient and/or family.</p> |
| 97164 | <p>Re-evaluation of physical therapy established plan of care, requiring these components: An examination including a review of history and use of standardized tests and measures is required; and Revised plan of care using a standardized patient assessment instrument and/or measurable assessment of functional outcome Typically, 20 minutes are spent face-to-face with the patient</p>                                                                                                                                                                                                                                                                                                                                             |

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|       | and/or family.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 97165 | Occupational therapy evaluation, low complexity, requiring these components: An occupational profile and medical and therapy history, which includes a brief history including review of medical and/or therapy records relating to the presenting problem; An assessment(s) that identifies 1-3 performance deficits (ie, relating to physical, cognitive, or psychosocial skills) that result in activity limitations and/or participation restrictions; and Clinical decision making of low complexity, which includes an analysis of the occupational profile, analysis of data from problem-focused assessment(s), and consideration of a limited number of treatment options. Patient presents with no comorbidities that affect occupational performance. Modification of tasks or assistance (eg, physical or verbal) with assessment(s) is not necessary to enable completion of evaluation component. Typically, 30 minutes are spent face-to-face with the patient and/or family. |
| 97166 | Occupational therapy evaluation, moderate complexity, requiring these components: An occupational profile and medical and therapy history, which includes an expanded review of medical and/or therapy records and additional review of physical, cognitive, or psychosocial history related to current functional performance; An assessment(s) that identifies 3-5 performance deficits (ie, relating to physical, cognitive, or psychosocial skills) that result in activity limitations and/or participation restrictions; and Clinical decision making of moderate analytic complexity, which includes an analysis of the occupational profile, analysis of data from detailed assessment(s), and consideration of several                                                                                                                                                                                                                                                              |

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|       | <p>treatment options. Patient may present with comorbidities that affect occupational performance. Minimal to moderate modification of tasks or assistance (eg, physical or verbal) with assessment(s) is necessary to enable patient to complete evaluation component. Typically, 45 minutes are spent face-to-face with the patient and/or family.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 97167 | <p>Occupational therapy evaluation, high complexity, requiring these components: An occupational profile and medical and therapy history, which includes review of medical and/or therapy records and extensive additional review of physical, cognitive, or psychosocial history related to current functional performance; An assessment(s) that identifies 5 or more performance deficits (ie, relating to physical, cognitive, or psychosocial skills) that result in activity limitations and/or participation restrictions; and Clinical decision making of high analytic complexity, which includes an analysis of the patient profile, analysis of data from comprehensive assessment(s), and consideration of multiple treatment options. Patient presents with comorbidities that affect occupational performance. Significant modification of tasks or assistance (eg, physical or verbal) with assessment(s) is necessary to enable patient to complete evaluation component. Typically, 60 minutes are spent face-to-face with the patient and/or family.</p> |
| 97168 | <p>Re-evaluation of occupational therapy established plan of care, requiring these components: An assessment of changes in patient functional or medical status with revised plan of care; An update to the initial occupational profile to reflect changes in condition or environment that affect future interventions and/or goals; and A revised plan of care. A formal reevaluation is performed when there is a documented change in functional status or a significant change to the plan of care is required. Typically, 30 minutes are spent face-to-face with the patient and/or family.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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| 97530 | Therapeutic activities, direct (one-on-one) patient contact (use of dynamic activities to improve functional performance), each 15 minutes                                                                                                                                            |
| 97533 | Sensory integrative techniques to enhance sensory processing and promote adaptive responses to environmental demands, direct (one-on-one) patient contact, each 15 minutes                                                                                                            |
| 97535 | Self-care/home management training (e.g., activities of daily living (ADL) and compensatory training, meal preparation, safety procedures, and instructions in use of assistive technology devices/adaptive equipment) direct one-on-one contact, each 15 minutes                     |
| 97537 | Community/work reintegration training (e.g., shopping, transportation, money management, avocational activities and/or work environment/modification analysis, work task analysis, use of assistive technology device/adaptive equipment), direct one-on-one contact, each 15 minutes |
| 97542 | Wheelchair management (e.g., assessment, fitting, training), each 15 minutes                                                                                                                                                                                                          |
| 97545 | Work hardening/conditioning; initial 2 hours                                                                                                                                                                                                                                          |
| 97546 | Work hardening/conditioning; each additional hour (List separately in addition to code for primary procedure)                                                                                                                                                                         |
| 97602 | Removal of devitalized tissue from wound(s), non-selective debridement, without anesthesia (eg, wet-to-moist dressings, enzymatic, abrasion, larval therapy), including topical application(s), wound assessment, and instruction(s) for ongoing care, per session                    |
| 97750 | Physical performance test or measurement (eg, musculoskeletal, functional capacity), with written report, each 15 minutes                                                                                                                                                             |

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| 97755 | Assistive technology assessment (e.g., to restore, augment or compensate for existing function, optimize functional tasks and/or maximize environmental accessibility), direct one-on-one contact, with written report, each 15 minutes |
| 97760 | Orthotic(s) management and training (including assessment and fitting when not otherwise reported), upper extremity(ies), lower extremity(ies) and/or trunk, initial orthotic(s) encounter, each 15 minutes                             |
| 97761 | Prosthetic(s) training, upper and/or lower extremity(ies), initial prosthetic(s) encounter, each 15 minutes                                                                                                                             |
| 97763 | Orthotic(s)/prosthetic(s) management and/or training, upper extremity(ies), lower extremity(ies), and/or trunk, subsequent orthotic(s)/prosthetic(s) encounter, each 15 minutes                                                         |
| 97799 | Unlisted physical medicine/rehabilitation service or procedure                                                                                                                                                                          |
| G0129 | Occupational therapy services requiring the skills of a qualified occupational therapist, furnished as a component of a partial hospitalization treatment program, per session (45 minutes or more)                                     |
| G0283 | Electrical stimulation (unattended), to one or more areas for indication(s) other than wound care, as part of a therapy plan of care                                                                                                    |

## Medical Evidence

Proud et al. (2024) systematically reviewed exercises to improve hand dexterity in patients with Parkinson's disease (PD). The review included 18 randomized control trials (RCTs) with 704 patients. Activities included dexterity exercises, functional task training, and constraint-induced movement therapy. Patient dexterity was evaluated using a number of assessments (e.g., 9-Hole Peg Test, Purdue Pegboard Test, Box and Block Test, Jebsen-Taylor Hand Function Test, Coin Rotation Task, Action Research Arm Test, and Soda Pop Test). Hand function was self-reported (e.g., Manual Ability Measure, Dexterity Questionnaire, and Duruoz Hand Index). Tablet-based or customized paper/pen tests measured the speed and amplitude of patient handwriting. Moderate-quality evidence demonstrated a small positive effect on within-hand dexterity (SMD=0.26; 95% CI 0.07, 0.44), supporting the use of physical therapy (PT), including hand-specific exercises, for patients with PD.<sup>29</sup>

Peng et al. (2022) conducted a 3-month, single-blind RCT to determine the long-term outcomes of therapeutic aquatic exercise for patients with low back pain. Each patient was randomized to a group – the aquatic exercise group (n = 56) received aquatic therapy alone, while the PT group (n = 57) received therapy with transcutaneous electrical nerve stimulation and infrared ray thermal therapy. Sessions were conducted for 60 minutes twice a week during the 3-month trial; follow-up was 12 months (n = 98). The aquatic exercise group demonstrated “greater alleviation of disability” – adjusted mean group differences were -1.77 following therapeutic aquatic exercise, -2.42 at the 6-month follow-up, and -3.61 at the 12-month follow-up.<sup>30</sup>

Forsythe et al. (2021) performed a systematic review and network meta-analysis on interventions for treating adhesive capsulitis. A total of 66 studies (4042 shoulders) were included. Cohorts were organized by treatment type, including physical therapy (PT), pain injection, and arthroscopic surgical capsular release. The authors found that PT with medical or ultrasound therapy demonstrated a high level of efficacy for pain relief. PT was also effective in improving functional status and range of motion. Overall, the results showed that manipulation under anesthesia (MUA), surgical procedures, and injections without PT were all effective, with high patient outcomes across intervention type.<sup>31</sup>

In an update from the Department of Defense and Department of Veterans Affairs, Webster et al. (2019) outlined recommendations for rehabilitation after lower limb amputation, including a recommendation that postsurgical treatment take place in an acute inpatient rehabilitation facility. The authors note that amputation patients who receive care in inpatient care facilities have improved quality of life, mobility, ambulation, and increased use of prostheses.<sup>12</sup>

The American Physical Therapy Association (APTA) has developed several clinical practice guidelines addressing the prevention, management, and rehabilitation of injuries, pain, and physical deficits that limit movement and adversely impact daily living. These guidelines recommend the use of both patient-reported outcome measures (PROMs) and objective measures of pain, function, mobility, strength, and response to treatment. Generally, selection of the most appropriate functional measure(s) is guided by the clinician's judgement and the patient's specific needs, with the guidelines typically recommending that measures be taken at baseline to assess pre-treatment functioning, and again at one or more other timepoints to assess response to treatment. The guidelines also recommend therapeutic activities and exercises to address the patient's specific deficits and limitations.

- The 2023 revision of the clinical guideline on hip pain and movement dysfunction associated with nonarthritic hip joint pain contains recommendations for diagnosis, examination, and interventions.<sup>24</sup> Recommended PROMs include the international hip outcome tool (iHOT), the Copenhagen hip and groin outcome score (HAGOS), the hip outcome score - activities of daily living (HOS-ADL), and the hip outcome score - sports-related activities subscale (HOS-SRA). Recommended objective measures include range of motion (ROM) and strength for hip internal and external rotation, flexion, extension, abduction, and adduction. Specific recommended measures of function and postural control, include the single leg stance test (SLST), star excursion balance test (SEBT), hop distance, single-leg sit to stand, and timed measures of function.
- The 2023 revision of the clinical guideline on heel pain - plantar fasciitis recommends the foot and ankle ability measure (FAAM), foot health status questionnaire (FHSQ), foot function index (FFI), and the lower extremity functional scale (LEFS), along with measures of pain, and active and

passive ankle dorsiflexion ROM.<sup>32</sup> Treatment may include joint and soft tissue mobilization, plantar fascia-specific and gastrocnemius/soleus stretching, antipronation taping, and night splints.

- The 2024 midportion achilles tendinopathy revision of the clinical guideline on achilles pain, stiffness, and muscle power deficits recommends the hop and heel-raise endurance test as well as a core outcome set for achilles tendinopathy which includes the Victoria Institute of Sport assessment – achilles questionnaire (VISA-A), the single-leg heel rise endurance test, and the movement-evoked pain with tendon loading activities. Recommended interventions include tendon loading exercises, ankle plantar flexor stretching, neuromuscular exercises, and manual therapy to address identified physical deficits.<sup>33</sup>
- The 2024 clinical guideline on distal radius fracture rehabilitation recommends joint-specific self-report measures of the patient's pain experience and functional disability.<sup>8</sup> Specific recommended tests include the disability of the arm, shoulder, and hand, and the Michigan hand questionnaire. Specific recommended objective measures include wrist and forearm range of motion assessments, and grip assessments (if not contraindicated). Recommended interventions include active range of motion exercises, progressive strengthening, manual therapy, therapeutic exercises, and graded motor imagery. The guidelines also note that physical or occupational therapists should be the primary instructors of independent home exercise programs.
- The 2025 clinical practice guideline on rotator cuff tendinopathy diagnosis, nonsurgical medical care, and rehabilitation contains recommendations for managing rotator cuff pathologies including tendinopathy both with and without calcifications, and full- and partial- thickness tears.<sup>23</sup> The guidelines recommended use of an inclinometer or goniometer to obtain objective passive and active ROM measurements, use of a hand-held dynamometer to obtain objective measurements of isometric muscle strength of the shoulder complex, and use of validated, reliable, and responsive PROMs to measure the patient's experience of pain and disability. Specific tests to confirm or rule out rotator cuff tendinopathy include the painful arc and Hawkins-Kennedy tests.
- The 2023 clinical practice guideline on physical therapist management of glenohumeral joint osteoarthritis recommends use of a sling and progressive exercises for ROM and strengthening.<sup>2</sup>



- The 2021 clinical practice guideline on physical therapy management of older adults with hip fracture recommends measuring knee extension and strength, patient-rated pain, gait speed test in patients that can walk without human assistance, the timed up-and-go (TUG) test to measure mobility and fall risk, the cumulated ambulation score (CAS) to measure basic mobility and independence, and the use of academy of geriatric physical therapy guidelines to assess fall risk.<sup>10</sup> Specific recommendations for interventions include use of progressive high intensity resistive strength, balance, weight-bearing, and functional mobility training in the immediate post-fracture period and beyond. Additional therapies may take the form of a home-exercise program, outpatient care, or community exercise programs, notably those recommended by the US Centers for Disease Control and Prevention and the National Council on Aging.
- The 2021 revision of the clinical practice guideline on interventions for the management of acute and chronic low back pain recommends trunk coordination, strengthening, and endurance exercises to reduce low back pain and disability, treatment to promote centralization, repeated exercises in a specific direction determined by treatment response, trunk muscle strengthening, endurance, multimodal exercise interventions, specific trunk muscle activation, as well as aerobic, aquatic, and general exercise.<sup>34</sup> The guidelines also recommended that patients with chronic low back pain and movement control impairments be treated with specific trunk muscle activation and movement control exercise. Specific manual therapies recommended included thrust and nonthrust joint mobilization procedures to improve mobility and reduce pain and disability.
- The 2022 clinical practice guideline on exercise-based knee and anterior cruciate ligament injury prevention provided several age, sex, and sport-specific recommendations to prevent injury, particularly in youth and female athletes.<sup>35</sup>

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# Policy Revision History/Information

| Original Date: November 20, 2020 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| Review History                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Version 2                        | 06/30/2023 | Policy criteria reviewed and updated per medical literature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Version 3                        | 12/29/2023 | Policy criteria reviewed and updated per medical literature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Version 4                        | 09/19/2024 | Policy criteria reviewed and updated per medical literature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Version 5                        | 10/16/2025 | <p>Annual review.</p> <p>Added description.</p> <p>Modified indications for clarity and usability. Major changes included: removal of distinct requirements for initial visit, simplification of requirements for continued care and re-evaluation, addition of criteria for maintenance care, addition of specific documentation criteria in the plan of care, addition of wound care criteria, addition of criteria for unlisted PT/OT service (CPT 97139), non-indications for dry needling, hydrotherapy with no specific purpose.</p> <p>Added definitions for skilled care, objective measures, PROMs.</p> <p>New CPT Codes: 20560, 20561, 97602</p> <p>Expanded medical evidence – 9 guidelines from the American Physical Therapy Association.</p> |



# **Cohere Medical Policy - Physical and Occupational Therapy (PT/OT)**

*Clinical Policy for Medical Necessity Review*

**Version: 5**

**Cohere Health UMC Approval Date: October 02, 2025**

Last Annual Review: October 02, 2025

Revision: Not Applicable

Next Annual Review: October 02, 2026



# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Physical and Occupational Therapy (PT/OT)

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Physical and Occupational Therapy (PT/OT)***

Cohere Health takes an evidence-based approach to reviewing therapy procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include:

- A recent and detailed medical history
- Severity of the patient's functional impairment
- The patient's response to skilled care and treatment
- Objective physical measures related to onset or change in symptoms
- Relevant functional outcome measures
- A plan of care with therapeutic goals and the patient's progress toward those goals
- In addition to the above, requests for additional visits or treatments must include a clinical rationale supporting the continued need for skilled intervention, as well as discharge planning where appropriate.

When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.

### **Description**

Broadly, physical therapy is the diagnosis and management of movement deficits or disorders. This can include restoring, maintaining, or promoting bodily function and purposeful action appropriate to the patient's age and development.<sup>1</sup> Similarly, occupational therapy involves evaluation, diagnosis, treatment planning, and interventions to support developing, recovering, or maintaining the skills required for age-appropriate self-care, work, education, and community participation.<sup>2</sup> Physical and occupational therapists are involved in all stages of care, from evaluation and diagnosis of

movement-related and functional impairments through to final discharge. Physical therapy interventions include therapeutic exercises, manual therapy, education, and assistive technologies. Occupational therapy interventions include strengthening exercises, task-specific training, education, environmental modifications, and adaptive technologies. Throughout therapy, progress toward treatment goals is monitored through data collection and reassessment, and treatment strategies are adjusted as needed.

Treatment requires the judgment, knowledge, and skills of a licensed and certified physical or occupational therapist and cannot be reasonably learned and implemented by non-professional or lay caregivers. When delivered by a PT assistant (PTA) or OT assistant (OTA), care must be under the plan of care of a therapist with appropriate oversight as defined by the local jurisdiction. Treatment must meet generally accepted standards of practice and be targeted and effective in addressing the patient's diagnosed impairment or condition. Treatment is expected to produce clinically significant and measurable improvement in the patient's level of functioning within a reasonable and medically predictable period of time; alternatively, the treatment is part of a medically necessary program intended to prevent significant functional decline. In such cases, documentation is expected to demonstrate that the patient will experience significant regression in the absence of skilled intervention.

## Medical Necessity Criteria

### Indications

**Physical therapy (PT) and occupational therapy (OT)** are considered appropriate if **ALL** of the following are **TRUE**:

- Therapy services are provided or supervised by a qualified physical or occupational therapist<sup>3-6</sup>; **AND**
- **ANY** of the following:
  - The therapy occurs in an outpatient setting; **OR**
  - The therapy occurs in an inpatient setting due to **ALL** of the following:
    - Treatment is required from a multidisciplinary team to include **AT LEAST TWO** of the following<sup>7-9</sup>:
      - Physical therapy; **OR**
      - Occupational therapy; **OR**
      - Speech therapy; **AND**
    - **ANY** of the following:
      - Amputation<sup>10,11</sup>; **OR**
      - Major multiple trauma<sup>12</sup>; **OR**
      - Severe burn injury<sup>13</sup>; **OR**
      - Stroke<sup>14</sup>; **OR**
      - Spinal cord injury<sup>15,16</sup>; **AND**
    - Documentation in the medical record includes **ALL** of the following<sup>15</sup>:
      - Clinical rationale for rehabilitation in an inpatient facility; **AND**
      - Medical history relevant to this inpatient stay, rehabilitation potential, prior level of function; **AND**
      - Plan of care must include current functional status with specific and measurable goals, and progress toward those goals; **AND**
- The plan of care demonstrates medical necessity as indicated by **ALL** of the following<sup>17-19</sup>:
  - Documentation of functional or physical impairment; **AND**
  - Objective measures used to quantify progress and support continued treatment; **AND**
  - Long- and short-term goals that are specific, quantifiable (measurable), and objective; **AND**
  - The amount, frequency, and duration of treatments are appropriate for the patient and diagnosis<sup>20,21</sup>; **AND**
  - Home recommendations, as applicable; **AND**
  - **ANY** of the following:

- Reasonable expectation of recovery or improvement in function to support onset or continuation of treatment; **OR**
- The patient is already receiving therapy, requires re-evaluation, and **ALL** of the following:
  - The patient develops a new condition or unanticipated significant change in functional status; **AND**
  - Documented justification that the patient requires additional evaluation; **AND**
  - Documentation of any changes to the interventions; **OR**
- The patient requires skilled maintenance care with **ALL** of the following<sup>22</sup>:
  - Documentation that the patient's condition is stable, stabilizing, or that deterioration has slowed; **AND**
  - Documentation that maintenance of function or the prevention or slowing of further deterioration is not possible without skilled intervention; **AND**
  - The plan of care is consistent with the patient's condition and prognosis; **OR**
- The patient requires removal of devitalized tissue from wounds or non-selective debridement and **ALL** of the following<sup>23</sup>:
  - Documentation that medically skilled debridement is required including the type of technique used (e.g., wet-to-moist, enzymatic, abrasion); **AND**
  - Documentation of objective wound assessment including drainage, color, texture, temperature, vascularity, condition of surrounding tissue, and size of area requiring debridement.

## Non-Indications

**Physical therapy (PT) and occupational therapy (OT)** are not considered appropriate if **ANY** of the following is **TRUE**:

- Unattended electrical stimulation when used for peripheral neuropathy; **OR**
- Work hardening and conditioning; **OR**
- Dry needling; **OR**
- Any service that does not require the skilled assistance of a licensed physical or occupational therapist (the establishment of a maintenance program, and the training of the patient, patient's family, or other persons

to carry it out is reimbursed as part of a regular treatment visit, not as a separate service); **OR**

- Low-level laser therapy (e.g., nonthermal and non-ablative) for post-operative pain reduction; **OR**
- Extracorporeal shock wave therapy (ESWT); **OR**
- The physical or functional deficit is reasonably expected to improve without therapy; **OR**
- Therapy that duplicates services that are provided concurrently by any other type of therapy, such as PT and speech and language therapy, which should provide different treatment goals, plans, and therapeutic modalities; **OR**
- Therapy for which there is no clinical documentation or plan of care to support the need for therapy services and/or continuing therapy.
- There is no plan of care written and supervised by a licensed physical or occupational therapist (not a physical or occupational therapy assistant or aide); **OR**
- Use of more than 1 hydrotherapy modality in a single day; **OR**
- Hydrotherapy with no specific therapeutic purpose.

### **Level of Care Criteria**

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                        |
|-----------------------|------------------------------------------------------------------------------------------------|
| 20560                 | Needle insertion(s) without injection(s); 1 or 2 muscle(s)                                     |
| 20561                 | Needle insertion(s) without injection(s); 3 or more muscles                                    |
| 97010                 | Application of a modality to 1 or more areas; hot or cold packs                                |
| 97012                 | Application of modality to one or more areas; traction, mechanical                             |
| 97014                 | Application of a modality to 1 or more areas; electrical stimulation (unattended)              |
| 97016                 | Application of a modality to 1 or more areas; vasopneumatic devices                            |
| 97018                 | Application of a modality to 1 or more areas; paraffin bath                                    |
| 97022                 | Application of a modality to 1 or more areas; whirlpool                                        |
| 97024                 | Application of a modality to 1 or more areas; diathermy (e.g., microwave)                      |
| 97026                 | Application of a modality to 1 or more areas; infrared                                         |
| 97028                 | Application of a modality to 1 or more areas; ultraviolet                                      |
| 97032                 | Application of a modality to 1 or more areas; electrical stimulation (manual), each 15 minutes |
| 97033                 | Application of a modality to 1 or more areas; iontophoresis, each 15 minutes                   |
| 97034                 | Application of a modality to 1 or more areas; contrast baths, each 15 minutes                  |



|       |                                                                                                                                                                                                                 |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 97035 | Application of a modality to 1 or more areas; ultrasound, each 15 minutes                                                                                                                                       |
| 97036 | Application of a modality to 1 or more areas; Hubbard tank, each 15 minutes                                                                                                                                     |
| 97037 | Application of a modality to 1 or more areas; low-level laser therapy (i.e., nonthermal and non-ablative) for post-operative pain reduction                                                                     |
| 97039 | Unlisted modality (specify type and time if constant attendance)                                                                                                                                                |
| 97110 | Therapeutic procedure, 1 or more areas, each 15 minutes; therapeutic exercises to develop strength and endurance, range of motion and flexibility                                                               |
| 97112 | Therapeutic procedure, 1 or more areas, each 15 minutes; neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture, and/or proprioception for sitting and/or standing activities |
| 97113 | Therapeutic procedure, 1 or more areas, each 15 minutes; aquatic therapy with therapeutic exercises                                                                                                             |
| 97116 | Therapeutic procedure, 1 or more areas, each 15 minutes; gait training (includes stair climbing)                                                                                                                |
| 97124 | Therapeutic procedure, 1 or more areas, each 15 minutes; massage, including effleurage, petrissage, and/or tapotement (stroking, compression, percussion)                                                       |
| 97129 | Therapeutic interventions that focus on cognitive function (e.g., attention, memory, reasoning, executive function, problem solving and/or pragmatic functioning) and compensatory                              |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|       | strategies to manage the performance of an activity (e.g., managing time or schedules, initiating, organizing and sequencing tasks), direct (one-on-one) patient contact; initial 15 minutes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 97130 | Therapeutic interventions that focus on cognitive function (e.g., attention, memory, reasoning, executive function, problem solving and/or pragmatic functioning) and compensatory strategies to manage the performance of an activity (e.g., managing time or schedules, initiating, organizing and sequencing tasks), direct (one-on-one) patient contact; each additional 15 minutes (List separately in addition to code for primary procedure)                                                                                                                                                                                                                                         |
| 97139 | Unlisted therapeutic procedure (specify)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 97140 | Manual therapy techniques (e.g., mobilization/manipulation, manual lymphatic drainage, manual traction), 1 or more regions, each 15 minutes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 97150 | Therapeutic procedure(s), group (2 or more individuals)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 97161 | Physical therapy evaluation: low complexity, requiring these components: A history with no personal factors and/or comorbidities that impact the plan of care; An examination of body system(s) using standardized tests and measures addressing 1-2 elements from any of the following: body structures and functions, activity limitations, and/or participation restrictions; A clinical presentation with stable and/or uncomplicated characteristics; and Clinical decision making of low complexity using standardized patient assessment instrument and/or measurable assessment of functional outcome. Typically, 20 minutes are spent face-to-face with the patient and/or family. |
| 97162 | Physical therapy evaluation: moderate complexity,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|       | <p>requiring these components: A history of present problem with 1-2 personal factors and/or comorbidities that impact the plan of care; An examination of body systems using standardized tests and measures in addressing a total of 3 or more elements from any of the following: body structures and functions, activity limitations, and/or participation restrictions; An evolving clinical presentation with changing characteristics; and Clinical decision making of moderate complexity using standardized patient assessment instrument and/or measurable assessment of functional outcome. Typically, 30 minutes are spent face-to-face with the patient and/or family.</p>                                                      |
| 97163 | <p>Physical therapy evaluation: high complexity, requiring these components: A history of present problem with 3 or more personal factors and/or comorbidities that impact the plan of care; An examination of body systems using standardized tests and measures addressing a total of 4 or more elements from any of the following: body structures and functions, activity limitations, and/or participation restrictions; A clinical presentation with unstable and unpredictable characteristics; and Clinical decision making of high complexity using standardized patient assessment instrument and/or measurable assessment of functional outcome. Typically, 45 minutes are spent face-to-face with the patient and/or family.</p> |
| 97164 | <p>Re-evaluation of physical therapy established plan of care, requiring these components: An examination including a review of history and use of standardized tests and measures is required; and Revised plan of care using a standardized patient assessment instrument and/or measurable assessment of functional outcome Typically, 20 minutes are spent face-to-face with the patient</p>                                                                                                                                                                                                                                                                                                                                             |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|       | and/or family.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 97165 | Occupational therapy evaluation, low complexity, requiring these components: An occupational profile and medical and therapy history, which includes a brief history including review of medical and/or therapy records relating to the presenting problem; An assessment(s) that identifies 1-3 performance deficits (ie, relating to physical, cognitive, or psychosocial skills) that result in activity limitations and/or participation restrictions; and Clinical decision making of low complexity, which includes an analysis of the occupational profile, analysis of data from problem-focused assessment(s), and consideration of a limited number of treatment options. Patient presents with no comorbidities that affect occupational performance. Modification of tasks or assistance (eg, physical or verbal) with assessment(s) is not necessary to enable completion of evaluation component. Typically, 30 minutes are spent face-to-face with the patient and/or family. |
| 97166 | Occupational therapy evaluation, moderate complexity, requiring these components: An occupational profile and medical and therapy history, which includes an expanded review of medical and/or therapy records and additional review of physical, cognitive, or psychosocial history related to current functional performance; An assessment(s) that identifies 3-5 performance deficits (ie, relating to physical, cognitive, or psychosocial skills) that result in activity limitations and/or participation restrictions; and Clinical decision making of moderate analytic complexity, which includes an analysis of the occupational profile, analysis of data from detailed assessment(s), and consideration of several                                                                                                                                                                                                                                                              |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | <p>treatment options. Patient may present with comorbidities that affect occupational performance. Minimal to moderate modification of tasks or assistance (eg, physical or verbal) with assessment(s) is necessary to enable patient to complete evaluation component. Typically, 45 minutes are spent face-to-face with the patient and/or family.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 97167 | <p>Occupational therapy evaluation, high complexity, requiring these components: An occupational profile and medical and therapy history, which includes review of medical and/or therapy records and extensive additional review of physical, cognitive, or psychosocial history related to current functional performance; An assessment(s) that identifies 5 or more performance deficits (ie, relating to physical, cognitive, or psychosocial skills) that result in activity limitations and/or participation restrictions; and Clinical decision making of high analytic complexity, which includes an analysis of the patient profile, analysis of data from comprehensive assessment(s), and consideration of multiple treatment options. Patient presents with comorbidities that affect occupational performance. Significant modification of tasks or assistance (eg, physical or verbal) with assessment(s) is necessary to enable patient to complete evaluation component. Typically, 60 minutes are spent face-to-face with the patient and/or family.</p> |
| 97168 | <p>Re-evaluation of occupational therapy established plan of care, requiring these components: An assessment of changes in patient functional or medical status with revised plan of care; An update to the initial occupational profile to reflect changes in condition or environment that affect future interventions and/or goals; and A revised plan of care. A formal reevaluation is performed when there is a documented change in functional status or a significant change to the plan of care is required. Typically, 30 minutes are spent face-to-face with the patient and/or family.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

|       |                                                                                                                                                                                                                                                                                       |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 97530 | Therapeutic activities, direct (one-on-one) patient contact (use of dynamic activities to improve functional performance), each 15 minutes                                                                                                                                            |
| 97533 | Sensory integrative techniques to enhance sensory processing and promote adaptive responses to environmental demands, direct (one-on-one) patient contact, each 15 minutes                                                                                                            |
| 97535 | Self-care/home management training (e.g., activities of daily living (ADL) and compensatory training, meal preparation, safety procedures, and instructions in use of assistive technology devices/adaptive equipment) direct one-on-one contact, each 15 minutes                     |
| 97537 | Community/work reintegration training (e.g., shopping, transportation, money management, avocational activities and/or work environment/modification analysis, work task analysis, use of assistive technology device/adaptive equipment), direct one-on-one contact, each 15 minutes |
| 97542 | Wheelchair management (e.g., assessment, fitting, training), each 15 minutes                                                                                                                                                                                                          |
| 97545 | Work hardening/conditioning; initial 2 hours                                                                                                                                                                                                                                          |
| 97546 | Work hardening/conditioning; each additional hour (List separately in addition to code for primary procedure)                                                                                                                                                                         |
| 97602 | Removal of devitalized tissue from wound(s), non-selective debridement, without anesthesia (eg, wet-to-moist dressings, enzymatic, abrasion, larval therapy), including topical application(s), wound assessment, and instruction(s) for ongoing care, per session                    |
| 97750 | Physical performance test or measurement (eg, musculoskeletal, functional capacity), with written report, each 15 minutes                                                                                                                                                             |

|       |                                                                                                                                                                                                                                         |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 97755 | Assistive technology assessment (e.g., to restore, augment or compensate for existing function, optimize functional tasks and/or maximize environmental accessibility), direct one-on-one contact, with written report, each 15 minutes |
| 97760 | Orthotic(s) management and training (including assessment and fitting when not otherwise reported), upper extremity(ies), lower extremity(ies) and/or trunk, initial orthotic(s) encounter, each 15 minutes                             |
| 97761 | Prosthetic(s) training, upper and/or lower extremity(ies), initial prosthetic(s) encounter, each 15 minutes                                                                                                                             |
| 97763 | Orthotic(s)/prosthetic(s) management and/or training, upper extremity(ies), lower extremity(ies), and/or trunk, subsequent orthotic(s)/prosthetic(s) encounter, each 15 minutes                                                         |
| 97799 | Unlisted physical medicine/rehabilitation service or procedure                                                                                                                                                                          |
| G0129 | Occupational therapy services requiring the skills of a qualified occupational therapist, furnished as a component of a partial hospitalization treatment program, per session (45 minutes or more)                                     |
| G0283 | Electrical stimulation (unattended), to one or more areas for indication(s) other than wound care, as part of a therapy plan of care                                                                                                    |

## Medical Evidence

Proud et al. (2024) systematically reviewed exercises to improve hand dexterity in patients with Parkinson's disease (PD). The review included 18 randomized control trials (RCTs) with 704 patients. Activities included dexterity exercises, functional task training, and constraint-induced movement therapy. Patient dexterity was evaluated using a number of assessments (e.g., 9-Hole Peg Test, Purdue Pegboard Test, Box and Block Test, Jebsen-Taylor Hand Function Test, Coin Rotation Task, Action Research Arm Test, and Soda Pop Test). Hand function was self-reported (e.g., Manual Ability Measure, Dexterity Questionnaire, and Duruoz Hand Index). Tablet-based or customized paper/pen tests measured the speed and amplitude of patient handwriting. Moderate-quality evidence demonstrated a small positive effect on within-hand dexterity (SMD=0.26; 95% CI 0.07, 0.44), supporting the use of physical therapy (PT), including hand-specific exercises, for patients with PD.<sup>24</sup>

Peng et al. (2022) conducted a 3-month, single-blind RCT to determine the long-term outcomes of therapeutic aquatic exercise for patients with low back pain. Each patient was randomized to a group – the aquatic exercise group (n = 56) received aquatic therapy alone, while the PT group (n = 57) received therapy with transcutaneous electrical nerve stimulation and infrared ray thermal therapy. Sessions were conducted for 60 minutes twice a week during the 3-month trial; follow-up was 12 months (n = 98). The aquatic exercise group demonstrated “greater alleviation of disability” – adjusted mean group differences were -1.77 following therapeutic aquatic exercise, -2.42 at the 6-month follow-up, and -3.61 at the 12-month follow-up.<sup>25</sup>

Forsythe et al. (2021) performed a systematic review and network meta-analysis on interventions for treating adhesive capsulitis. A total of 66 studies (4042 shoulders) were included. Cohorts were organized by treatment type, including physical therapy (PT), pain injection, and arthroscopic surgical capsular release. The authors found that PT with medical or ultrasound therapy demonstrated a high level of efficacy for pain relief. PT was also effective in improving functional status and range of motion. Overall, the results show that one treatment is not superior – manipulation under anesthesia (MUA), surgical procedures, and injections without PT also demonstrate high patient outcomes.<sup>26</sup>



In an update from the Department of Defense and Department of Veterans Affairs, Webster et al. (2019) outlined recommendations for rehabilitation after lower limb amputation, including a recommendation that postsurgical treatment take place in an acute inpatient rehabilitation facility. The authors note that amputation patients who receive care in inpatient care facilities have improved quality of life, mobility, ambulation, and increased use of prostheses.<sup>10</sup>

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# Policy Revision History/Information

|                                  |            |                                                              |
|----------------------------------|------------|--------------------------------------------------------------|
| Original Date: November 20, 2020 |            |                                                              |
| Review History                   |            |                                                              |
| Version 2                        | 06/30/2023 | Policy criteria reviewed and updated per medical literature. |
| Version 3                        | 12/29/2023 | Policy criteria reviewed and updated per medical literature. |
| Version 4                        | 09/19/2024 | Policy criteria reviewed and updated per medical literature. |
| Version 5                        | 10/02/2025 | Annual review.                                               |



## **Cohere Medical Policy – Pneumatic Compressors and Appliances**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 2  
**Revision Date:** February 6, 2025

# Important Notices

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## Guideline Information:

**Specialty Area:** Cardiovascular Disease

**Guideline Name:** Cohere Medical Policy - Pneumatic Compressors and Appliances

**Date of last literature review:** 1/26/2025

**Document last updated:** 2/5/2025

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)



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# Medical Necessity Criteria

## ***Service: Pneumatic Compressors and Appliances***

### **Recommended Clinical Approach**

Intermittent pneumatic compression (IPC) devices, also known as sequential compression devices, are sleeves, tubes, or cuffs that fill with air and compress extremities to prevent deep vein thrombosis and treat peripheral artery disease. IPC devices are prescribed for patients whose mobility is limited—often as a result of a medical procedure, stroke, or illness—and for whom anticoagulants are contraindicated. The devices are frequently used in conjunction with other mechanical compression treatments.<sup>1-3</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ A **Pneumatic compressor or appliance** is considered appropriate if **ALL** of the following are **TRUE**<sup>4</sup>:

- ◆ The device or appliance is **ANY** of the following:
  - Non-programmable; **OR**
  - Programmable and failure of a non-programmable device or appliance; **AND**
- ◆ The patient has **ANY** of the following clinical conditions:
  - Risk of deep vein thrombosis (DVT) due to immobility or the complete inability to ambulate<sup>5-7</sup>; **OR**
  - Lymphedema with participation in a decongestive therapy program and **ANY** of the following<sup>8,9</sup>:
    - For the initial reductive phase, as indicated by **ALL** of the following:
      - ◆ Symptomatic lymphedema and **ANY** of the following:
        - Discomfort; **OR**
        - Heaviness; **OR**
        - Pain; **OR**
        - Recurrent skin infections or skin ulceration; **OR**
        - Refractory lymphatic drainage; **OR**
        - Reduced function; **AND**

- ◆ The patient is unable to perform other compression interventions indicated by a failure of prior compression therapy (e.g., compression garment, bandage, manual lymph drainage) as evidenced by failure to relieve symptoms after at least four weeks of treatment; **OR**
- For a maintenance phase indicated by a failure of prior compression therapy (e.g., compression garment, bandage, manual lymph drainage) as evidenced by failure to relieve symptoms after at least four weeks of treatment; **OR**
- Venous leg ulcers and **ANY** of the following<sup>10,11</sup>:
  - Failure of other compression interventions (e.g., stockings, bandages) after six months or more and **ALL** of the following:
    - ◆ Non-healing venous ulcers; **AND**
    - ◆ Other interventions (e.g., saphenous vein ablation, sclerotherapy) are not suitable/effective<sup>12,13</sup>; **OR**
  - Use of other compression interventions is not possible<sup>14</sup>.

### Non-Indications

→ A **Pneumatic compressor or appliance** is **NOT** considered appropriate if **ANY** of the following is **TRUE**<sup>1,15</sup>:

- ◆ Peripheral arterial occlusive disease<sup>1</sup>; **OR**
- ◆ Acute DVT; **OR**
- ◆ Recurrent cancer in the affected extremity<sup>8,15</sup>; **OR**
- ◆ Untreated cellulitis in the affected extremity<sup>8,15</sup>; **OR**
- ◆ Potential compression of an existing lower extremity arterial bypasses; **OR**
- ◆ Allergy to compression material.

### Level of Care Criteria

Inpatient or Outpatient.

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                              |
|----------------|-----------------------------------------------|
| E0650          | Pneumatic compressor, nonsegmental home model |
| E0651          | Pneumatic compressor, segmental home model    |

|       |                                                                              |
|-------|------------------------------------------------------------------------------|
|       | without calibrated gradient pressure                                         |
| E0652 | Pneumatic compressor, segmental home model with calibrated gradient pressure |
| E0655 | Nonsegmental pneumatic appliance for use with pneumatic compressor, half arm |
| E0660 | Nonsegmental pneumatic appliance for use with pneumatic compressor, full leg |
| E0665 | Nonsegmental pneumatic appliance for use with pneumatic compressor, full arm |
| E0666 | Nonsegmental pneumatic appliance for use with pneumatic compressor, half leg |
| E0667 | Segmental pneumatic appliance for use with pneumatic compressor, full leg    |
| E0668 | Segmental pneumatic appliance for use with pneumatic compressor, full arm    |
| E0669 | Segmental pneumatic appliance for use with pneumatic compressor, half leg    |
| E0671 | Segmental gradient pressure pneumatic appliance, full leg                    |
| E0672 | Segmental gradient pressure pneumatic appliance, full arm                    |
| E0673 | Segmental gradient pressure pneumatic appliance, half leg                    |

# Medical Evidence

A systematic review and meta-analysis conducted by Wang et al. (2020) evaluated the effectiveness of intermittent pneumatic compression (IPC) for thromboprophylaxis in critically ill patients. The review found that compared to patients who did not receive thromboprophylaxis, the IPC group had a significantly reduced incidence of venous thromboembolism (i.e. vein thrombosis or pulmonary embolism).<sup>3</sup>

The American Academy of Neurology published a practice guideline on the treatment of restless legs syndrome (RLS) in adults. Pneumatic compression shows positive outcomes for patients with moderate to severe RLS. It is most effective before the onset of symptoms when non-pharmacologic approaches are indicated.<sup>16</sup>

The American Academy of Orthopaedic Surgeons (AAOS) published a guideline on preventing venous thromboembolic disease in patients undergoing elective hip and knee arthroplasty. Recommendations include the use of mechanical compressive devices in combination with pharmacologic agents to prevent venous thromboembolism in patients who are not at elevated risk for bleeding. The AAOS notes the lack of evidence for the duration of use, the use of pharmacologic prophylaxis and mechanical compressive devices in patients who have had previous venous thromboembolism, and the outcomes of using mechanical compressive devices for reducing the risk of venous thromboembolism in patients with a known bleeding disorder (e.g., hemophilia) or active liver disease.<sup>17</sup>

The American Society of Hematology guideline on the management of venous thromboembolism discusses prevention measures for hospitalized patients following surgery. Pneumatic compression DVT prophylaxis is recommended for patients instead of graduated compression stockings.<sup>18</sup>

The American Venous Forum, the American Vein and Lymphatic Society, and the Society for Vascular Medicine published an expert opinion consensus on lymphedema diagnosis and treatment. According to the working group, sequential pneumatic compression is recommended for patients, especially those with early-stage lymphedema. Patients with edema due to chronic venous insufficiency may also benefit.<sup>19</sup>

The International Society of Lymphology consensus document on the diagnosis and treatment of peripheral lymphedema (2020) recommends Intermittent pneumatic compression as a standard treatment for lymphedema. The document notes that compression stockings or sleeves may be effective following treatment with external compression to maintain edema reduction.<sup>8</sup>

The Society for Vascular Surgery and the American Venous Forum published guidelines for managing venous leg ulcers. The society recommends intermittent pneumatic compression when other options are unavailable or unsuccessful.<sup>20</sup>

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# Clinical Guideline Revision History/Information

| Original Date: December 1, 2023 |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                  |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Version 2                       | 2/6/2025 | <p>Annual review</p> <ul style="list-style-type: none"> <li>• Replaced General Guidelines with Recommended Clinical Approach.</li> <li>• Reworded deep venous thrombosis and DVT risk language in Indications.</li> <li>• Reworded initial reductive phase language to be consistent with maintenance phase language in Indications.</li> <li>• The non-indication, "Peripheral arterial occlusive disease defined by an arterial insufficiency of the lower extremities (ABPI) less than 0.6, ankle pressure less than 60 mm Hg, toe pressure less than 30 mm Hg, or transcutaneous oxygen pressure less than 20 mm Hg)," has been replaced with "peripheral arterial occlusive disease."</li> <li>• "Severe diabetic neuropathy" and "Severe cardiac insufficiency" have been removed from the non-indications.</li> <li>• Added Wang et al. (2020) systematic review and meta-analysis to Medical Evidence.</li> <li>• Confirmed procedure codes.</li> <li>• Added new citations (citations 2,3,15).</li> </ul> |
|                                 |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                 |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



## **Cohere Medical Policy – Proximal Tibial Osteotomy**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 2  
**Revision Date:** February 6, 2025

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical policy - Proximal Tibial Osteotomy

**Date of last literature review:** 1/15/2025

**Document last updated:** 2/5/2025

**Type:** ☒ Adult (18+ yo) | ☐ Pediatric (0-17yo)

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# Medical Necessity Criteria

## ***Service: Proximal Tibial Osteotomy***

### **Recommended Clinical Approach**

A proximal tibial osteotomy (PTO) is a surgical procedure to treat unicompartmental osteoarthritis of the knee. The surgery is also used to correct the alignment of the bones that form the knee joint, particularly in patients with a knock knee deformity (genu valgum) or with genu varum, also known as bowlegs. A PTO for genu varum can be conducted in several ways, including as a lateral closing wedge (LCW) or a medial opening wedge procedure (MOW). While 10-year survivorship of the two procedures is comparable, MOW may decrease patellar height significantly, while an LCW may result in peroneal nerve injuries.<sup>1-3</sup>

### **Medical Necessity Criteria**

#### **Indications**

→ **Proximal tibial osteotomy** is considered appropriate if **ANY** of the following is **TRUE**<sup>4-19</sup>:

- ◆ Genu valgum; **OR**
- ◆ Knee instability with **ANY** of the following<sup>5,19</sup>:
  - ACL deficiency with coronal malalignment; **OR**
  - ACL deficiency with medial compartment arthrosis; **OR**
  - ACL deficiency with sagittal malalignment (increased tibial slope); **OR**
  - ACL deficiency with varus malalignment; **OR**
  - Chronic lateral/posterolateral ligamentous insufficiency (can be combined with cartilage restoration or meniscus preserving/replacing therapies); **OR**
- ◆ Osteogenesis imperfecta; **OR**
- ◆ Patellofemoral instability; **OR**
- ◆ Posttraumatic tibial malalignment; **OR**
- ◆ Spontaneous osteonecrosis of medial femoral condyle<sup>8</sup>; **OR**
- ◆ Tibial torsion with **ALL** of the following<sup>9</sup>:
  - Symptoms of patellofemoral pain or patellar instability that do not respond to physical therapy; **AND**
  - Torsion of 30 degrees or more as confirmed by imaging; **OR**
- ◆ Tumor excision or biopsy (e.g., giant cell tumor of bone, osteosarcoma)<sup>10</sup>; **OR**

- ◆ Unicompartamental degenerative knee arthritis with **ALL** of the following<sup>11</sup>:
  - Knee range of motion includes **ALL** of the following:
    - Knee extension is normal or flexion contracture is not greater than 10°<sup>9</sup>; **AND**
    - Knee flexion is greater than or equal to 90°; **AND**
  - A weight-bearing radiograph shows **ANY** of the following evidence of knee arthritis:
    - Joint space narrowing (greater than 50%) in the medial compartment only<sup>10</sup>; **OR**
    - Marginal osteophytes or subchondral sclerosis in the medial compartment only with joint space narrowing (less than 50%)<sup>10</sup>; **AND**
  - Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - Anti-inflammatory medications, analgesics, or prescription medications (oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy; **AND**
    - Activity modifications; **AND**
    - **ANY** of the following:
      - ◆ Corticosteroid injection if medically appropriate; **OR**
      - ◆ Corticosteroid injection is contraindicated; **AND**
  - Symptoms limit activities of daily living (ADLs).

### Non-Indications

- **Proximal tibial osteotomy** is **NOT** considered appropriate if **ANY** of the following is **TRUE**<sup>19</sup>:
- ◆ Lateral compartment moderate to severe osteoarthritis or meniscal deficiency; **OR**
  - ◆ Rheumatoid arthritis; **OR**
  - ◆ Severely limited range of motion (knee flexion less than 90° and a flexion contracture greater than 10°)<sup>9</sup>; **OR**
  - ◆ Active use of nicotine-derived products; **OR**
  - ◆ Body mass index (BMI) greater than or equal to 30kg/m<sup>2</sup><sup>11</sup>; **OR**
  - ◆ Lower extremity ischemia; **OR**
  - ◆ Active infection.

### Site of Service Criteria

Inpatient or Outpatient.

### **Procedure Codes (HCPCS/CPT)**

| <b>HCPCS/CPT Code</b> | <b>Code Description</b>                                                                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27457                 | Osteotomy, proximal tibia, including fibular excision or osteotomy (includes correction of genu varus [bowleg] or genu valgus [knock-knee]); after epiphyseal closure |



## Medical Evidence

Coakley et al. (2023) conducted a systematic review of the outcomes of high tibial osteotomy for valgus knee. The review included 17 papers collectively representing 517 knee procedures. The authors found HTO to be a viable treatment for correct hip-knee-ankle angles, and that there is evidence to suggest that the procedure may delay the need for a total knee replacement.<sup>12</sup>

Bin et al. (2023) reviewed 21 studies, including 17 randomized control trials with 1749 patients. The studies compared the complications, revisions, reoperations, and functional outcomes among patients undergoing total knee arthroplasty (TKA), unicompartmental knee arthroplasty (UKA), high tibial osteotomy, bicompartmental knee arthroplasty (BCA), bi-unicompartmental knee arthroplasty (BIU), and knee joint distraction KJD). While some HTOs may require a conversion to TKA if osteoarthritis advances, successful reconstruction of joint function is accomplished by correcting varus malalignment. In addition, TKA after HTO has a higher complication rate and poor outcomes.<sup>10</sup>

Murray et al. (2021) discuss the indications, techniques, and outcomes for high tibial osteotomy. Evidence supports the procedure as a durable solution for joint preservation. Research shows positive outcomes with the lateral closing wedge and medial opening wedge, including the mechanical medial proximal tibial angle.<sup>2</sup>

The American Academy of Orthopaedic Surgeons (AAOS) published a clinical practice guideline on the *Management of Osteoarthritis of the Knee (Non-Arthroplasty)*. High tibial osteotomy may improve pain and function in properly indicated patients with unicompartmental knee osteoarthritis. Studies demonstrate a pain reduction with survival rates of approximately 70% at 10 years.<sup>18</sup> The AAOS also published a guideline on the *Surgical Management of Osteoarthritis of the Knee*. Unicompartmental knee arthroplasty or tibial osteotomy is recommended to treat knee osteoarthritis.<sup>8</sup>

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# Clinical Guideline Revision History/Information

| Original Date: December 15, 2023 |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Version 2                        | February 6, 2025 | <ul style="list-style-type: none"> <li>• Annual Review</li> <li>• Aligned the knee flexion angles in the indications and non-indications.</li> <li>• Removed “open growth plates” from the non-indications, as this policy is limited to adults.</li> <li>• Changed the BMI non-indication from 40 to 30 kg/m<sup>2</sup></li> <li>• Added references to indications and non-indications that included precise percentages, angles, or weights [e.x. joint space narrowing (less than 50%)].</li> <li>• Added references #1-3 and 9-12</li> </ul> |
|                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



## **Cohere Medical Policy – Sacroiliac Joint Fusion**

*Clinical Policy for Medical Necessity Review*

**Version:** 4

**Policy Number:** CHP-301-4

**Cohere Health UMC Approval Date:** January 15, 2026

Last Annual Review: January 15, 2026

Revision: Not Applicable

Next Annual Review: January 15, 2027

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy – Sacroiliac Joint Fusion

**Policy Number:** CHP-301-4

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Sacroiliac Joint Fusion***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Duplicate exams or requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed and/or treated with a single study or procedure.



## **Description**

Sacroiliac (SI) joint fusion is a surgical procedure in which the iliac bone is fused to the sacrum for stabilization. It may be performed for a variety of conditions, including chronic pain, trauma, infection, cancer, and spinal instability. The initial treatment for SI joint pain is usually nonsurgical in nature; however, surgical options may be explored when the symptoms are refractory or when the individual is unable to tolerate more conservative interventions. Implants, often made of titanium, are used to permanently fuse the SI joint, thereby limiting its movement and providing long-term stabilization, which reduces pain and improves function for many patients.

## **Medical Necessity Criteria**

### **Indications**

A **sacroiliac (SI) joint fusion** is considered appropriate if **ALL** of the following are **TRUE**:

- **ANY** of the following regarding nicotine use<sup>1,2</sup>:
  - Current nicotine user with no product use for 6 weeks, and **ANY** of the following:
    - Negative urine (cotinine) lab test within 30 days; **OR**
    - Surgery is urgently required due to documented reason; **OR**
  - No history of nicotine product use within the last 12 months; **OR**
  - No lifetime history of nicotine product use; **AND**
- **ANY** of the following:
  - Chronic SI joint pain requiring fusion with **ALL** of the following:
    - **ALL** of the following symptoms:
      - Absence of generalized pain behavior (e.g., somatoform disorder) or generalized pain disorders (e.g., fibromyalgia)<sup>3</sup>; **AND**
      - Nonradicular, typically unilateral, pain that is maximal below the L5 vertebrae, localized over the posterior SI joint, and consistent with SI joint pain<sup>3</sup>; **AND**
    - Positive response to **AT LEAST THREE** of the following provocative tests (unless medically contraindicated, [e.g., acute pelvic ring disruption])<sup>3</sup>:
      - Compression test; **OR**
      - Distraction test; **OR**
      - FABER maneuver/Patrick's sign; **OR**
      - Gaenslen's test; **OR**

- Sacral thrust; **OR**
- Thigh thrust test; **AND**
- **ANY** of the following clinical findings<sup>3</sup>:
  - Absence of tenderness elsewhere (e.g., greater trochanter, lumbar spine, coccyx) that explains the symptoms; **OR**
  - Localized tenderness with palpation over the sacral sulcus (Fortin's point, at the insertion of the long dorsal ligament inferior to the posterior superior iliac spine or posterior superior iliac spine [PSIS]); **AND**
- **ALL** of the following imaging studies<sup>3</sup>:
  - Anteroposterior (AP) plain radiograph of the pelvis to rule out concomitant hip pathology; **AND**
  - CT or MRI of the lumbar spine to rule out neural compression or other degenerative conditions that can be causing lower back or buttock pain; **AND**
  - Radiographs, CT, or MRI of the SI joint with radiologic report that excludes the presence of **ANY** of the following:
    - Destructive lesions (e.g., tumor, infection); **OR**
    - Fracture; **OR**
    - Inflammatory arthropathy that would not be properly addressed by percutaneous SI joint fusion; **OR**
    - Traumatic SI joint instability; **AND**
- Failure of conservative management<sup>A</sup>, including **ALL** of the following:
  - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
  - **ANY** of the following:
    - **ALL** of the following:
      - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
      - PT/HEP trialed for a duration of 6 months or more within the past 6 months<sup>3</sup>; **OR**
    - Progression or worsening of symptoms due to PT/HEP treatment; **AND**

- **ALL** of the following regarding prior SI joint injections<sup>3</sup>:
  - Image-guided SI joint injection resulting in greater than or equal to 75% reduction of pain for the expected duration of the anesthetic used on two separate occasions; **AND**
  - The patient has had at least one therapeutic intra-articular SI joint injection (e.g., corticosteroid injection); **OR**
- Computed tomography (CT) or magnetic resonance imaging (MRI) with radiologic report with **ANY** of the following:
  - Infection; **OR**
  - Injury (including pelvic ring disruption) demonstrating an unstable SI joint; **OR**
  - Tumor; **AND**
- **ANY** of the following fusion types:
  - Percutaneous minimally invasive SI joint fusion as indicated by **ALL** of the following:
    - **ALL** of the following:
      - Other sources of pain have been excluded (e.g., lumbar disc degeneration, lumbar disc herniation, lumbar spondylolisthesis, lumbar spinal stenosis, lumbar facet degeneration, and lumbar vertebral body fracture); **AND**
      - Pain that has lasted at least 6 months due to SI joint dysfunction; **AND**
    - Disruption of functional activities as indicated by **ANY** of the following scores:
      - 5 or greater on the Visual Analogue Scale (VAS)<sup>4</sup>; **OR**
      - 30 or greater on the Oswestry Disability Index (ODI)<sup>5</sup>; **AND**
    - Numeric Rating Scale (NRS) baseline score of at least 5<sup>5</sup>; **OR**
  - Open SI joint fusion as indicated by **ANY** of the following:
    - The patient requires a sacrectomy or partial sacrectomy (e.g., the excision of tumors involving the sacrum); **OR**
    - The procedure is being performed in addition to other medical treatment of SI joint infection or sepsis (e.g., osteomyelitis, pyogenic sacroiliitis); **OR**
    - Pseudoarthrosis of the SI joint; **OR**
    - SI joint infection (e.g., osteomyelitis); **OR**
    - Severe traumatic injuries due to pelvic ring disruption (e.g., pelvic ring fractures, acetabular fracture, spinopelvic dissociation)<sup>4</sup>; **OR**
    - Tumor involving the sacrum; **OR**

- When multisegment spinal constructs are required (e.g., correction of deformity in scoliosis or kyphosis surgery) that extend to the ilium, and a lumbar spine fusion procedure is being performed for the deformity; **OR**
- Revision or replacement SI joint fusion due to **ANY** of the following:
  - Damaged implant (e.g., fracture, breakage, loosening); **OR**
  - Faulty device or implant; **OR**
  - Implant or device is not in the correct position and is causing symptoms with impingement of the foramen by the implant/device; **OR**
  - Secondary Infection related to the implant/device; **OR**
  - Symptomatic pseudoarthrosis (non-union).

## Non-Indications

A **sacroiliac (SI) joint fusion** is not considered appropriate if **ANY** of the following is **TRUE**:

- Percutaneous procedure planned when **ANY** of the following are present<sup>3</sup>:
  - Acute traumatic instability; **OR**
  - Infection; **OR**
  - Tumor; **OR**
- Presence of **ANY** of the following<sup>3</sup>:
  - Generalized pain behavior (e.g., somatoform disorder); **OR**
  - Generalized pain disorder (e.g., fibromyalgia); **OR**
  - Neural compression was found on imaging, and the symptoms are supported by another source of pain; **OR**
  - Systemic arthropathy (e.g., ankylosing spondylitis, rheumatoid arthritis); **OR**
- SI joint fusion with the use of a device that does not transfix the SI joint (PainTEQ's LinQ SI Joint Stabilization procedure)<sup>6</sup>; **OR**
- Dorsal approach with the use of an intra-articular device that does not traverse the SI Joint.

## Definitions

### **<sup>A</sup>Failure of conservative management:**

- The patient has completed a full course of conservative management without meaningful improvement.
- Patient noncompliance, closure of therapy offices, and patient inconvenience do *not* constitute a failure of conservative treatment.

### **Level of Care Criteria**

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                                             |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20999                 | Unlisted procedure, musculoskeletal system, general                                                                                                                                                                                                                                 |
| 27278                 | Arthrodesis, sacroiliac joint, percutaneous or minimally invasive, with image guidance, includes obtaining bone graft when performed, unilateral; placement of intra-articular device(s), without cortical piercing                                                                 |
| 27279                 | Arthrodesis, sacroiliac joint, percutaneous or minimally invasive, with image guidance, includes obtaining bone graft when performed, unilateral; placement of transarticular device(s) and/or intra-articular or medial cortices of the ilium and the lateral cortex of the sacrum |
| 27280                 | Arthrodesis, sacroiliac joint, open, includes obtaining bone graft, including instrumentation, when performed                                                                                                                                                                       |

## Medical Evidence

Dat et al. (2024) conducted a retrospective cohort study based on four prospective clinical trials to analyze patient-reported outcomes related to body mass index (BMI) following a sacroiliac (SI) joint fusion. A total of 474 patients aged 21–70 were included; all had a diagnosis of unilateral or bilateral SI joint pain caused by degenerative sacroiliitis or SI joint disruption. Exclusion criteria included “other back-related conditions with moderate-to-severe pain, other sacroiliac pathologies (e.g., autoimmune sacroiliitis, tumor, infection, fracture), known osteoporosis, chronic rheumatologic disease, or other conditions that could impair full study participation.” Among the 377 patients in the SI joint fusion group, the mean BMI was 29.4, compared to 29.0 for the 97 patients who received non-surgical management. In addition to a lower BMI, patients who received an SI joint infusion reported an improvement in pain scores (baseline 80.0, 29.7 at 6-month follow-up, 29.3 at 12 months, and 26.3 at 24 months).<sup>7</sup>

Shamrock et al. (2019) performed a systematic review of the safety profile of percutaneous minimally invasive SI joint fusion. Of 720 patients, 99 (13.75%) underwent bilateral SI joint arthrodesis, including 819 fused SI joints. Surgical wound infection and drainage occurred in 11% of patients, and the revision rate was low (2.56%).<sup>8</sup> Similarly, Polly et al. (2016) reported the two-year outcomes from a randomized controlled trial (RCT) involving 148 patients who received minimally invasive SI joint fusion or non-surgical management for SI joint dysfunction. At two-year follow-up, those assigned to the fusion group reported clinical improvement (83%) or substantial improvement (82.0%) in pain scores. Conversely, these percentages were lower among non-surgical treatment patients (68.2% and 65.9%, respectively). Adverse events were minimal; three patients in the fusion group required revision surgery before a two-year follow-up.<sup>9</sup>

Zaidi et al. (2015) reviewed the surgical and clinical efficacy of SI joint fusion. A total of 430 patients were identified in five consecutive case series, eight retrospective studies, and three prospective cohort studies. Open surgery was performed in 131 patients, and 299 required minimally invasive surgery (MIS) for SI joint fusion. Follow-up was 60 months for open surgery and 21 months for MIS. The most common indication for the 257 patients who underwent

surgical treatment was SI joint degeneration/arthrosis (59.8%), SI joint dysfunction (18.4%), post-partum instability (7.2%), post-traumatic (6.5%), idiopathic (5.8%), pathological fractures (1.4%), and HLA-B27+/ rheumatoid arthritis (0.9%). Satisfaction was excellent, with noted improvements in pain, function, and quality of life. The authors felt this reflected the efficacy of SI joint fusion in appropriately selected patients.<sup>10</sup>

The North American Spine Society (NASS) published a coverage policy recommendation for minimally invasive SI joint fusion, which supports coverage for treating SI joint pain. NASS noted that the procedure is relatively safe, with estimated blood loss being low, as are the rates of infection, complications, and the need for revision surgery.<sup>3</sup>

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# Policy Revision History/Information

| Original Date: December 15, 2023 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Version 2                        | 04/26/2024 | Policy criteria reviewed and updated per medical literature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Version 3                        | 12/19/2024 | Annual review.<br><br>Changes to medical necessity criteria for clarification, no changes to procedure codes. Nicotine and conservative therapy criteria were enhanced.                                                                                                                                                                                                                                                                                                                                                                                  |
| Version 4                        | 01/15/2026 | Annual review.<br><br>Deleted CPT 0809T and 22848.<br><br>Updated CPT 27278 and 27279 code descriptions per AMA code update effective 01/01/2026.<br><br>Updated the Description.<br><br>Updated standard language for nicotine use and conservative management.<br><br>Added indications for chronic sacroiliac joint pain requiring fusion and imaging requirement for trauma.<br><br>Updated indication for sacroiliac pain due to traumatic injury - removed "external fixator trial provided symptom relief" and added "unstable sacroiliac joint." |

|  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>Deleted “posterior provocation test” as it is duplicative of “thigh thrust test.”</p> <p>Removed non-indication for nicotine use as the requirement is stated in the indications section.</p> <p>Updated non-indication for SI joint fusion – deleted “single screw fixation” and added “the use of a device that does not transfix the SI joint (PainTEQ’s LinQ SI Joint Stabilization procedure).”</p> <p>Updated non-indication for intra-articular devices to include dorsal approach.</p> |
|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# Cohere Medical Policy – Sacroiliac Joint Fusion

Clinical Policy for Medical Necessity Review

CHP-301-4      Version 4

**Cohere Health UMC Approval Date** January 15, 2026

**Last Annual Review** January 15, 2026

**Revision Date** Not applicable

**Next Annual Review** January 15, 2027

**Level of care** Inpatient, Outpatient

**Specialty** Musculoskeletal care

**Population type** Adult (18+ years old), Pediatric (0-17 years old)

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## Procedure Codes (CPT/HCPCS)

| Service: Sacroiliac Joint Fusion |                                                                                                                                                                                                                                                                                                                    |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Code                             | Description                                                                                                                                                                                                                                                                                                        |
| 20999                            | Unlisted procedure, musculoskeletal system, general                                                                                                                                                                                                                                                                |
| 27278                            | Arthrodesis, sacroiliac joint, percutaneous or minimally invasive, with image guidance, includes obtaining bone graft when performed, unilateral; placement of intra-articular device(s), without cortical piercing                                                                                                |
| 27279                            | Arthrodesis, sacroiliac joint, percutaneous or minimally invasive, with image guidance, includes obtaining bone graft when performed, unilateral; placement of transarticular device(s) and/or intra-articular device(s) piercing the lateral or medial cortices of the ilium and the lateral cortex of the sacrum |
| 27280                            | Arthrodesis, sacroiliac joint, open, includes obtaining bone graft, including instrumentation, when performed                                                                                                                                                                                                      |

# Important Notices

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## Service: Sacroiliac Joint Fusion - Description

Sacroiliac (SI) joint fusion is a surgical procedure in which the iliac bone is fused to the sacrum for stabilization. It may be performed for a variety of conditions, including chronic pain, trauma, infection, cancer, and spinal instability. The initial treatment for SI joint pain is usually nonsurgical in nature; however, surgical options may be explored when the symptoms are refractory or when the individual is unable to tolerate more conservative interventions. Implants, often made of titanium, are used to permanently fuse the SI joint, thereby limiting its movement and providing long-term stabilization, which reduces pain and improves function for many patients.

# Service: Sacroiliac Joint Fusion - Medical Necessity Criteria

## Administrative Guidelines for Medical Necessity Review

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Duplicate exams or requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed and/or treated with a single study or procedure.

## Indications

- A **sacroiliac (SI) joint fusion** is considered appropriate if **ALL** of the following are **TRUE**:
  - **ANY** of the following regarding nicotine use<sup>1,2</sup>:
    - Current nicotine user with no product use for 6 weeks, and **ANY** of the following:
      - Negative urine (cotinine) lab test within 30 days; **OR**
      - Surgery is urgently required due to documented reason; **OR**
    - No history of nicotine product use within the last 12 months; **OR**
    - No lifetime history of nicotine product use; **AND**
  - **ANY** of the following:
    - Chronic SI joint pain requiring fusion with **ALL** of the following:
      - **ALL** of the following symptoms:
        - ▲ Absence of generalized pain behavior (e.g., somatoform disorder) or generalized pain disorders (e.g., fibromyalgia)<sup>3</sup>; **AND**
        - ▲ Nonradicular, typically unilateral, pain that is maximal below the L5 vertebrae, localized over the posterior SI joint, and consistent with SI joint pain<sup>3</sup>; **AND**
      - Positive response to **AT LEAST THREE** of the following provocative tests (unless medically contraindicated, [e.g., acute pelvic ring disruption])<sup>3</sup>:
        - ▲ Compression test; **OR**
        - ▲ Distraction test; **OR**



- ▲ FABER maneuver/Patrick's sign; **OR**
- ▲ Gaenslen's test; **OR**
- ▲ Sacral thrust; **OR**
- ▲ Thigh thrust test; **AND**
- **ANY** of the following clinical findings<sup>3</sup>:
  - ▲ Absence of tenderness elsewhere (e.g., greater trochanter, lumbar spine, coccyx) that explains the symptoms; **OR**
  - ▲ Localized tenderness with palpation over the sacral sulcus (Fortin's point, at the insertion of the long dorsal ligament inferior to the posterior superior iliac spine or posterior superior iliac spine [PSIS]); **AND**
- **ALL** of the following imaging studies<sup>3</sup>:
  - ▲ Anteroposterior (AP) plain radiograph of the pelvis to rule out concomitant hip pathology; **AND**
  - ▲ CT or MRI of the lumbar spine to rule out neural compression or other degenerative conditions that can be causing lower back or buttock pain; **AND**
  - ▲ Radiographs, CT, or MRI of the SI joint with radiologic report that excludes the presence of **ANY** of the following:
    - △ Destructive lesions (e.g., tumor, infection); **OR**
    - △ Fracture; **OR**
    - △ Inflammatory arthropathy that would not be properly addressed by percutaneous SI joint fusion; **OR**
    - △ Traumatic SI joint instability; **AND**
- Failure of conservative management<sup>A</sup>, including **ALL** of the following:
  - ▲ Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
  - ▲ **ANY** of the following:
    - △ **ALL** of the following:
      - ◆ Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
      - ◆ PT/HEP trialed for a duration of 6 months or more within the past 6 months<sup>3</sup>; **OR**
    - △ Progression or worsening of symptoms due to PT/HEP treatment; **AND**
  - ▲ **ALL** of the following regarding prior SI joint injections<sup>3</sup>:
    - △ Image-guided SI joint injection resulting in greater than or equal to 75% reduction of pain for the expected duration of the anesthetic used on two separate occasions; **AND**
    - △ The patient has had at least one therapeutic intra-articular SI joint injection (e.g., corticosteroid injection); **OR**
- Computed tomography (CT) or magnetic resonance imaging (MRI) with radiologic report with **ANY** of the following:
  - Infection; **OR**
  - Injury (including pelvic ring disruption) demonstrating an unstable SI joint; **OR**
  - Tumor; **AND**
- **ANY** of the following fusion types:
  - Percutaneous minimally invasive SI joint fusion as indicated by **ALL** of the following:
    - **ALL** of the following:
      - ▲ Other sources of pain have been excluded (e.g., lumbar disc degeneration, lumbar disc herniation, lumbar spondylolisthesis, lumbar spinal stenosis, lumbar facet degeneration, and lumbar vertebral

body fracture); **AND**

▲ Pain that has lasted at least 6 months due to SI joint dysfunction; **AND**

□ Disruption of functional activities as indicated by **ANY** of the following scores:

▲ 5 or greater on the Visual Analogue Scale (VAS)<sup>4</sup>; **OR**

▲ 30 or greater on the Oswestry Disability Index (ODI)<sup>5</sup>; **AND**

□ Numeric Rating Scale (NRS) baseline score of at least 5<sup>5</sup>; **OR**

■ Open SI joint fusion as indicated by **ANY** of the following:

□ The patient requires a sacrectomy or partial sacrectomy (e.g., the excision of tumors involving the sacrum); **OR**

□ The procedure is being performed in addition to other medical treatment of SI joint infection or sepsis (e.g., osteomyelitis, pyogenic sacroiliitis); **OR**

□ Pseudoarthrosis of the SI joint; **OR**

□ SI joint infection (e.g., osteomyelitis); **OR**

□ Severe traumatic injuries due to pelvic ring disruption (e.g., pelvic ring fractures, acetabular fracture, spinopelvic dissociation)<sup>4</sup>; **OR**

□ Tumor involving the sacrum; **OR**

□ When multisegment spinal constructs are required (e.g., correction of deformity in scoliosis or kyphosis surgery) that extend to the ilium, and a lumbar spine fusion procedure is being performed for the deformity; **OR**

■ Revision or replacement SI joint fusion due to **ANY** of the following:

□ Damaged implant (e.g., fracture, breakage, loosening); **OR**

□ Faulty device or implant; **OR**

□ Implant or device is not in the correct position and is causing symptoms with impingement of the foramen by the implant/device; **OR**

□ Secondary Infection related to the implant/device; **OR**

□ Symptomatic pseudoarthrosis (non-union).

## Non-Indications

● A **sacroiliac (SI) joint fusion** is not considered appropriate if **ANY** of the following is **TRUE**:

○ Percutaneous procedure planned when **ANY** of the following are present<sup>3</sup>:

■ Acute traumatic instability; **OR**

■ Infection; **OR**

■ Tumor; **OR**

○ Presence of **ANY** of the following<sup>3</sup>:

■ Generalized pain behavior (e.g., somatoform disorder); **OR**

■ Generalized pain disorder (e.g., fibromyalgia); **OR**

■ Neural compression was found on imaging, and the symptoms are supported by another source of pain; **OR**

■ Systemic arthropathy (e.g., ankylosing spondylitis, rheumatoid arthritis); **OR**

○ SI joint fusion with the use of a device that does not transfix the SI joint (PainTEQ's LinQ SI Joint Stabilization procedure)<sup>6</sup>; **OR**

○ Dorsal approach with the use of an intra-articular device that does not traverse the SI Joint.

## Definitions and Notes

**<sup>A</sup> Failure of conservative management:**

- The patient has completed a full course of conservative management without meaningful improvement.
- Patient noncompliance, closure of therapy offices, and patient inconvenience do *not* constitute a failure of conservative treatment.

Dat et al. (2024) conducted a retrospective cohort study based on four prospective clinical trials to analyze patient-reported outcomes related to body mass index (BMI) following a sacroiliac (SI) joint fusion. A total of 474 patients aged 21-70 were included; all had a diagnosis of unilateral or bilateral SI joint pain caused by degenerative sacroiliitis or SI joint disruption. Exclusion criteria included "other back-related conditions with moderate-to-severe pain, other sacroiliac pathologies (e.g., autoimmune sacroiliitis, tumor, infection, fracture), known osteoporosis, chronic rheumatologic disease, or other conditions that could impair full study participation." Among the 377 patients in the SI joint fusion group, the mean BMI was 29.4, compared to 29.0 for the 97 patients who received non-surgical management. In addition to a lower BMI, patients who received an SI joint fusion reported an improvement in pain scores (baseline 80.0, 29.7 at 6-month follow-up, 29.3 at 12 months, and 26.3 at 24 months).<sup>7</sup>

Shamrock et al. (2019) performed a systematic review of the safety profile of percutaneous minimally invasive SI joint fusion. Of 720 patients, 99 (13.75%) underwent bilateral SI joint arthrodesis, including 819 fused SI joints. Surgical wound infection and drainage occurred in 11% of patients, and the revision rate was low (2.56%).<sup>8</sup> Similarly, Polly et al. (2016) reported the two-year outcomes from a randomized controlled trial (RCT) involving 148 patients who received minimally invasive SI joint fusion or non-surgical management for SI joint dysfunction. At two-year follow-up, those assigned to the fusion group reported clinical improvement (83%) or substantial improvement (82.0%) in pain scores. Conversely, these percentages were lower among non-surgical treatment patients (68.2% and 65.9%, respectively). Adverse events were minimal; three patients in the fusion group required revision surgery before a two-year follow-up.<sup>9</sup>

Zaidi et al. (2015) reviewed the surgical and clinical efficacy of SI joint fusion. A total of 430 patients were identified in five consecutive case series, eight retrospective studies, and three prospective cohort studies. Open surgery was performed in 131 patients, and 299 required minimally invasive surgery (MIS) for SI joint fusion. Follow-up was 60 months for open surgery and 21 months for MIS. The most common indication for the 257 patients who underwent surgical treatment was SI joint degeneration/arthrosis (59.8%), SI joint dysfunction (18.4%), post-partum instability (7.2%), post-traumatic (6.5%), idiopathic (5.8%), pathological fractures (1.4%), and HLA-B27+/ rheumatoid arthritis (0.9%). Satisfaction was excellent, with noted improvements in pain, function, and quality of life. The authors felt this reflected the efficacy of SI joint fusion in appropriately selected patients.<sup>10</sup>

The North American Spine Society (NASS) published a coverage policy recommendation for minimally invasive SI joint fusion, which supports coverage for treating SI joint pain. NASS noted that the procedure is relatively safe, with estimated blood loss being low, as are the rates of infection, complications, and the need for revision surgery.<sup>3</sup>

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## Policy Revision History/Information

| Clinical Guideline Version | Date       | Review History                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version 1                  | 12/15/2023 | Original Date.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Version 2                  | 04/26/2024 | Policy criteria reviewed and updated per medical literature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Version 3                  | 12/19/2024 | Annual review. Changes to medical necessity criteria for clarification, no changes to procedure codes. Nicotine and conservative therapy criteria were enhanced.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Version 4                  | 01/15/2026 | Annual review. Deleted CPT 0809T and 22848. Updated CPT 27278 and 27279 code descriptions per AMA code update effective 01/01/2026. Updated the Description. Updated standard language for nicotine use and conservative management. Added indications for chronic sacroiliac joint pain requiring fusion and imaging requirement for trauma. Updated indication for sacroiliac pain due to traumatic injury - removed "external fixator trial provided symptom relief" and added "unstable sacroiliac joint." Deleted "posterior provocation test" as it is duplicative of "thigh thrust test." Removed non-indication for nicotine use as the requirement is stated in the indications section. Updated non-indication for SI joint fusion - deleted "single screw fixation" and added "the use of a device that does not transfix the SI joint (PainTEQ's LinQ SI Joint Stabilization procedure)." Updated non-indication for intra-articular devices to include dorsal approach. |



## **Cohere Medical Policy – Sacroiliac Joint Injections and Radiofrequency Ablation (RFA)**

*Clinical Policy for Medical Necessity Review*

**Version: 5**

**Cohere Health UMC Approval Date: December 18, 2025**

Last Annual Review: December 18, 2025

Revision: Not Applicable

Next Annual Review: December 18, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy – Sacroiliac Joint Injections and Radiofrequency Ablation (RFA)

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)



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# Medical Necessity Criteria

## ***Service: Sacroiliac Joint Injections and Radiofrequency Ablation (RFA)***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Injections for chronic sacroiliac (SI) joint pain are given for diagnostic or therapeutic purposes. The standard of care for chronic SI joint pain is to start with non-surgical management. This may include physical therapy together with analgesic therapy, such as non-steroidal anti-inflammatory drugs (NSAIDs) or other analgesics, if not contraindicated. When conservative therapies are ineffective, invasive procedures are considered, including local anesthetic injections (with or without steroids) into the SI joint between the spine and the pelvis.

Radiofrequency ablation (RFA) of the nerves innervating the SI joint is not considered medically reasonable and necessary.

## **Medical Necessity Criteria**

### **Indications**

A **sacroiliac (SI) joint injection** is considered appropriate if **ALL** of the following are **TRUE**<sup>1-2</sup>:

- Clinical evaluation (including history and physical examination) shows **ALL** of the following:
  - Low back pain for at least 3 months; **AND**
  - Moderate-to-severe pain as measured on a pain scale (e.g., numeric rating scale [NRS] or visual analog scale [VAS] greater than or equal to 4 out of 10); **AND**
  - Localized tenderness with palpation over the SI joint area or sacral sulcus (Fortin's point); **AND**
  - Positive response to **AT LEAST 3** SI joint provocative tests, including **ANY** of the following:
    - Distraction test; **OR**
    - Compression test; **OR**
    - Thigh thrust test; **OR**
    - Gaenslen's test; **OR**
    - Yeoman's test; **OR**
    - FABER maneuver/Patrick's sign; **OR**
    - Posterior provocation test; **AND**
- Failure of conservative management<sup>A</sup>, including **ALL** of the following:
  - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**

- **ANY** of the following:
  - **ALL** of the following:
    - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
    - PT/HEP tried for a duration of 4 weeks or more within the past 6 months; **OR**
    - Progression or worsening of symptoms due to PT/HEP treatment; **OR**
    - For a repeat injection in the same region, documentation of ongoing rehabilitative approaches (e.g., physical therapy, chiropractic care, or physician-guided home exercise program); **AND**
- **ANY** of the following:
  - The injection is a diagnostic, intra-articular sacroiliac (SI) joint injection, and **ALL** of the following are **TRUE**:
    - No other pain injections in the lumbosacral spine will be performed with the SI joint injection; **AND**
    - No more than 2 diagnostic injections per SI joint for diagnostic purposes; **OR**
  - The injection is a therapeutic, intra-articular SI joint injection, and **ALL** of the following is **TRUE**:
    - No other pain injections in the lumbosacral spine will be performed with the SI joint injection; **AND**
    - No more than 4 therapeutic SI joint injections per SI joint in a rolling 12 months; **AND**
    - **ANY** of the following:
      - For an initial therapeutic injection, the patient has SI joint pain confirmed by at least 1 diagnostic intra-articular SI joint injection on the same side, with greater than or equal to 50% pain relief; **OR**
      - For a subsequent therapeutic injection, the most recent therapeutic SI joint injection to the same side provided greater than or equal to 50% pain relief for 3 months.

## Non-Indications

A **sacroiliac (SI) joint injection** is not appropriate if **ANY** of the following is **TRUE**:

- Request for SI joint injection with biologics (e.g., platelet-rich plasma, stem cells, amniotic fluid); **OR**

- SI joint injection is performed without fluoroscopy or computed tomography (CT) guidance; **OR**
- SI joint injection is performed with ultrasound image guidance, except for injections performed during pregnancy where it would be reasonable to avoid radiographs<sup>8</sup>; **OR**
- The request is for diagnostic anesthetic blocks of the nerves innervating the SI joint to assess candidacy for radiofrequency ablation (RFA); **OR**
- The request is for SI joint RFA or RFA of nerves innervating the SI joint.

## **Definitions**

### **<sup>A</sup>Failure of conservative management:**

- The patient has completed a full course of conservative management without meaningful improvement.
- Patient noncompliance, closure of therapy offices, and patient inconvenience do *not* constitute a failure of conservative treatment.

## **Level of Care Criteria**

Outpatient

## **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                 |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27096                 | Injection procedure for sacroiliac joint, anesthetic/steroid, with image guidance (fluoroscopy or CT) including arthrography when performed             |
| 64625                 | Radiofrequency ablation, nerves innervating the sacroiliac joint, with image guidance (e.g., fluoroscopy or computed tomography)                        |
| 64451                 | Injection(s), anesthetic agent(s) and/or steroid; nerves innervating the sacroiliac joint, with image guidance (ie, fluoroscopy or computed tomography) |
| 76000                 | Fluoroscopy (separate procedure), up to 1 hour physician or other qualified health care professional                                                    |

|       |                                                                                                                                         |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------|
|       | time                                                                                                                                    |
| G0260 | Injection procedure for sacroiliac joint; provision of anesthetic, steroid and/or other therapeutic agent, with or without arthrography |

## Medical Evidence

Janapala et al. (2023) performed a systematic review and meta-analysis on the efficacy of sacroiliac joint (SI) joint injections for low back pain. The review included 11 randomized controlled trials (RCTs) and three observational studies that demonstrated positive pain relief outcomes (short- and long-term). The authors noted the lack of standardized patient selection criteria and the lack of uniform diagnostic blocks and dual blocks among the studies reviewed, which limits the generalizability of the conclusions drawn.<sup>6</sup>

Aranke et al. (2022) performed a review of the literature on minimally invasive and conservative interventions for the treatment of SI joint pain. Treatment options include physical therapy, intra-articular joint injections, radiofrequency ablation, platelet-rich plasma, prolotherapy, and biologics. While positive outcomes were reported with invasive interventions, the evidence supported the use of minimally invasive procedures in combination with conservative management. Additional clinical studies are needed to draw more concrete conclusions on optimal management approaches.<sup>9</sup>

Joukar et al. (2020) reviewed 55 studies that focused on SI joint fixation techniques and the biomechanical outcomes of surgical procedures. The authors noted that if 3 or more provocation tests are positive, a diagnosis of the SI joint as the source of pain is acceptable. However, the review found inconsistent findings among clinical studies in the success of identifying the pain source to be SI joint dysfunction. The authors inferred that diagnostic blocks were the most reliable methods for diagnosing SI joint pain.<sup>10</sup>

Vu et al. (2024) conducted a comprehensive literature review to evaluate the effectiveness of SI joint corticosteroid injection in axial spondyloarthritis, a chronic rheumatic, musculoskeletal, inflammatory disease that frequently includes sacroiliitis. From a review of 7 studies, the authors concluded that SI joint corticosteroid injections can be appropriate and effective in the treatment of refractory axial spondyloarthritis. All 7 studies reported a trend toward reduced pain severity after SI joint corticosteroid injections. The authors also recommended image guidance when performing SI joint injections for better outcomes due to the complexity and heterogeneity of the anatomy of the SI joint.<sup>11</sup>

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# Policy Revision History/Information

| Original Date: April 21, 2021 |            |                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                |            |                                                                                                                                                                                                                                                                                                                                                                                                               |
| Version 2                     | 12/15/2023 | Policy criteria reviewed and updated per medical literature                                                                                                                                                                                                                                                                                                                                                   |
| Version 3                     | 9/20/2024  | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                                                                                            |
| Version 4                     | 12/12/2024 | <p>Annual review</p> <p>Aligned to current policy guidelines.</p> <p>Medical Evidence updated.</p> <p>References updated.</p> <p>CPT codes and descriptions updated; temporary codes deleted.</p> <p>Indications and non-indications were updated for clarity and ease of conversion to rules.</p> <p>Combined SI joint injection procedures into one policy (including a change to non-coverage of RFA).</p> |
| Version 5                     | 12/18/2025 | <p>Annual review.</p> <p>Updated conservative care section for clarity; refined language and added options for worsening symptoms with PT and for ongoing rehabilitation for repeat injections.</p> <p>Updated references.</p> <p>Minor edits for readability and clarity.</p>                                                                                                                                |



## **Cohere Medical Policy – Sacroiliac Joint Injections and Radiofrequency Ablation (RFA)**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 4  
**Effective Date:** December 12, 2024

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy - Sacroiliac Joint Injections

**Date of last literature review:** 11/21/2024

**Document last updated:** 11/21/2024

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Sacroiliac Joint Injections and Radiofrequency Ablation (RFA)***

### **Recommended Clinical Approach**

Injections for chronic sacroiliac (SI) joint pain are given for diagnostic or therapeutic purposes. The standard of care for chronic SI joint pain is to start with non-surgical management. This may include physical therapy together with analgesic therapy, such as non-steroidal anti-inflammatory drugs (NSAIDs) or other analgesics, if not contraindicated. When conservative therapies are ineffective, invasive procedures are considered, including local anesthetic injections (with or without steroids) into the SI joint between the spine and the pelvis.

Radiofrequency ablation (RFA) of the nerves innervating the SI joint is not considered medically reasonable and necessary.

### **Medical Necessity Criteria**

#### **Indications**

→ A **sacroiliac (SI) joint injection** is considered appropriate if **ALL** of the following is **TRUE**<sup>1-7</sup>:

- ◆ Clinical evaluation (including history and physical examination) shows **ALL** of the following:
  - Low back pain for at least 3 months; **AND**
  - Moderate to severe pain as measured on a pain scale (e.g., NRS or VAS greater than or equal to 4 out of 10); **AND**
  - Localized tenderness with palpation over the SI joint area or sacral sulcus (Fortin's point); **AND**
  - Positive response to 3 or more SI joint provocative tests, including **ANY** of the following:
    - Distraction test; **OR**
    - Compression test; **OR**
    - Thigh thrust test; **OR**
    - Gaenslen's test; **OR**
    - Yeoman's test; **OR**

- FABER maneuver/Patrick's sign; **OR**
  - Posterior provocation test; **AND**
- Failure of conservative management for greater than 6 weeks, including **ALL** of the following:
  - Anti-inflammatory medications, analgesics, or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **AND**
  - Physical therapy; **AND**
- ◆ ANY of the following:
  - The injection is a diagnostic, intra-articular sacroiliac (SI) joint injection, and **ALL** of the following are **TRUE**:
    - No other pain injections in the lumbosacral spine performed with the SI joint injection; **AND**
    - No more than 2 diagnostic injections per SI joint for diagnostic purposes; **OR**
  - The injection is a therapeutic, intra-articular SI joint injection, and **ALL** of the following is **TRUE**:
    - No other pain injections in the lumbosacral spine performed with the SI joint injection; **AND**
    - No more than 4 therapeutic SI joint injections per SI Joint in a rolling 12 months; **AND**
    - **ANY** of the following:
      - ◆ For an initial therapeutic injection, the patient has SI joint pain confirmed by at least 1 diagnostic intra-articular SI joint injection on the same side, with greater than or equal to 50% pain relief; **OR**
      - ◆ For a subsequent therapeutic injection, the most recent therapeutic SI joint injection to the same side provided greater than or equal to 50% pain relief for 3 months.

## Non-Indications

- A **sacroiliac (SI) joint injection** is not appropriate if **ANY** of the following is **TRUE**:
- ◆ Request for SI joint injection with biologics (e.g., platelet-rich plasma, stem cells, amniotic fluid, etc.); **OR**

- ◆ SI joint injection is performed without fluoroscopy or computed tomography (CT) guidance; **OR**
- ◆ SI joint injection is performed with ultrasound image guidance, (except for injections performed during pregnancy) where it would be reasonable to avoid radiographs<sup>8</sup>; **OR**
- ◆ The request is for diagnostic anesthetic blocks of the nerves innervating the SI joint to assess candidacy for radiofrequency ablation (RFA); **OR**
- ◆ The request is for SI joint RFA or RFA of nerves innervating the SI joint.

### **Level of Care Criteria**

Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description/Definition</b>                                                                                                                      |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27096                 | Injection procedure for sacroiliac joint, anesthetic/steroid, with image guidance (fluoroscopy or CT) including arthrography when performed             |
| 64625                 | Radiofrequency ablation, nerves innervating the sacroiliac joint, with image guidance (e.g., fluoroscopy or computed tomography)                        |
| 64451                 | Injection(s), anesthetic agent(s) and/or steroid; nerves innervating the sacroiliac joint, with image guidance (ie, fluoroscopy or computed tomography) |
| 76000                 | Fluoroscopy (separate procedure), up to 1 hour physician or other qualified health care professional time                                               |
| G0260                 | Injection procedure for sacroiliac joint; provision of anesthetic, steroid and/or other therapeutic agent, with or without arthrography                 |



# Medical Evidence

Janapala et al. (2023) performed a systematic review and meta-analysis on the efficacy of sacroiliac joint (SI) joint injections for low back pain. The review included 11 randomized control trials (RCTs) and three observational studies that demonstrated positive pain relief outcomes (short- and long-term). The authors note the limitation of a lack of standardized patient selection and studies having a lack of uniform diagnostic blocks and dual blocks.<sup>6</sup>

Aranke et al. (2022) performed a review of the literature on minimally invasive and conservative interventions for the treatment of SI joint pain. Treatment options include physical therapy, intra-articular joint injections, radiofrequency ablation, platelet-rich plasma, prolotherapy, and biologics. While positive outcomes are reported, evidence supports the use of minimally invasive procedures in combination with conservative management. Additional clinical studies are needed to draw more concrete conclusions.<sup>9</sup>

Joukar et al. (2020) reviewed 55 studies that focused on SI joint fixation techniques and the biomechanical outcomes of surgical procedures. The authors note, that if 3 or more provocation tests are positive, a diagnosis of the SI joint as the source of pain is acceptable. However, the review found inconsistent findings among clinical studies in the success of identifying the pain source to be SI joint dysfunction. The authors infer, that diagnostic blocks are the most reliable methods for diagnosing SI joint pain.<sup>10</sup>

Vu et al. (2024) conducted a comprehensive literature review to evaluate the effectiveness of SI joint corticosteroid injection in axial spondyloarthritis, a chronic rheumatic, musculoskeletal, inflammatory disease that frequently includes sacroiliitis. From a review of 7 studies, the authors concluded that SI joint corticosteroid injections can be appropriate and effective in the treatment of refractory axial spondyloarthritis. All 7 studies reported a trend toward reduced pain severity after SI joint corticosteroid injections. The authors also recommended image guidance when performing SI joint injections for better outcomes due to the complexity and heterogeneity of the anatomy of the SI joint.<sup>11</sup>

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# Clinical Guideline Revision History/Information

| Original Date: April 21, 2021 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Version 2                     | 12/15/2023 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Version 3                     | 9/20/2024  | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Version 4                     | 12/12/2024 | <ul style="list-style-type: none"> <li>• Annual review</li> <li>• Aligned to current policy guidelines.</li> <li>• Medical Evidence updated.</li> <li>• References updated.</li> <li>• CPT codes and descriptions updated; temporary codes deleted</li> <li>• Indications and non-indications were updated for clarity and ease of conversion to rules</li> <li>• Combined SI joint injection procedures into one policy (including a change to non-coverage of RFA).</li> </ul> |



## **Cohere Medical Policy – Shoulder Arthroplasty**

*Clinical Policy for Medical Necessity Review*

**Version: 4**

**Cohere Health UMC Approval Date: July 10, 2025**

Last Annual Review: July 10, 2025

Revision: Not Applicable

Next Annual Review: July 10, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Shoulder Arthroplasty

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Shoulder Arthroplasty***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed.
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the



patient's primary symptoms can be adequately assessed with a single study or procedure.

### **Description**

Shoulder arthroplasty is a surgical intervention to reduce shoulder pain and restore function by replacing a damaged or diseased shoulder joint (the glenohumeral joint) with a prosthesis.<sup>1</sup> While hemiarthroplasty replaces only the ball of the ball and socket joint, total shoulder arthroplasty (TSA) replaces both the humeral and glenoid sides of the joint.<sup>2</sup> In anatomic TSA (aTSA) the humeral head is replaced with a prosthetic ball, and the glenoid is either resurfaced or replaced with a prosthetic socket. While TSA procedures require an intact rotator cuff, reverse TSA (rTSA) procedures can be used on patients with cuff tear arthropathy or torn or insufficient cuff.<sup>2</sup> In rTSA procedures, the ball is placed on the glenoid and the socket on the humerus. Patients with a previous joint arthroplasty who present with pain due to loosening, prosthesis failure, instability, or infection may require a revision procedure.<sup>3</sup>

### **Medical Necessity Criteria**

#### **Indications**

**Shoulder arthroplasty** is considered appropriate if **ALL** of the following are **TRUE**:

- **ANY** of the following<sup>3</sup>:
  - The patient is a current nicotine user with no product use for 6 weeks and **ANY** of the following:
    - Negative lab test within 30 days; **OR**
    - Surgery is urgently required for acute fracture or injury; **OR**
  - No history of nicotine product use within the last 12 months; **OR**
  - No lifetime history of nicotine product use; **AND**
- **ANY** of the following:
  - The procedure is a total shoulder arthroplasty and **ANY** of the following is **TRUE**:
    - Complex proximal humerus fracture; **OR**
    - **ALL** of the following:
      - The patient has pain and loss of motion<sup>3,7</sup>; **AND**

- Radiographs are consistent with advanced osteoarthritis or humeral head osteonecrosis<sup>3,6,11,12</sup> (e.g., destruction of shoulder joint, cystic changes, severe narrowing of joint space)<sup>3,7</sup>; **AND**
- **ANY** of the following:
  - Failure of conservative management for greater than 6 weeks, including **ALL** of the following<sup>8,16</sup>:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy, including a physician-directed home exercise program, if medically appropriate; **AND**
    - **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Documentation that corticosteroid injection is contraindicated; **OR**
  - Imaging with report confirms severe osteoarthritis or humeral head osteonecrosis and documentation that further conservative treatment is not medically appropriate or is contraindicated; **OR**
- The procedure is a reverse total shoulder arthroplasty, and **ANY** of the following is **TRUE**:
  - **ALL** of the following:
    - The patient has disabling pain and loss of motion, or functional disability; **AND**
    - Radiographs are consistent with advanced osteoarthritis (e.g., destruction of shoulder joint, cystic changes, severe narrowing of joint space)<sup>3,7</sup>; **AND**
    - Documentation, including imaging, that anatomic total shoulder arthroplasty is not appropriate including **ANY** of the following:
      - Compromised rotator cuff integrity<sup>2,7,16,18</sup> (e.g., irreparable failed rotator cuff repair, massive rotator cuff tear, rotator cuff deficient arthropathy, rotator cuff tear arthropathy); **OR**
      - Significant glenoid bone loss or deformity<sup>26,27</sup> (e.g., severe arthritis with glenoid bone loss, with or without glenohumeral instability); **OR**
      - Advanced rheumatoid arthritis<sup>23,24</sup>; **AND**
  - **ANY** of the following:

- Failure of conservative management for greater than 6 weeks, including **ALL** of the following<sup>13</sup>:
  - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
  - Physical therapy, including a physician-directed home exercise program, if medically appropriate; **AND**
  - **ANY** of the following:
    - Corticosteroid injection if medically appropriate; **OR**
    - Documentation that corticosteroid injection is contraindicated; **OR**
- Imaging with report confirms severe osteoarthritis and documentation that further conservative treatment is not medically appropriate or is contraindicated; **OR**
- Complex proximal humerus fractures<sup>8,14</sup>; **OR**
- Failed shoulder arthroplasty<sup>15</sup>; **OR**
- Failed shoulder hemiarthroplasty<sup>15</sup>; **OR**
- Proximal humerus fracture with **ANY** of the following<sup>7,19,20</sup>:
  - Rotator cuff deficiency; **OR**
  - Malunion; **OR**
- Reconstruction after tumor resection<sup>21,22</sup>; **OR**
- The procedure is a hemiarthroplasty, and **ANY** of the following is **TRUE**:
  - Rotator cuff tear arthropathy<sup>4</sup>; **OR**
  - Malignancy of the glenohumeral joint<sup>5</sup>; **OR**
  - Humeral head osteonecrosis with preserved glenoid<sup>6,7</sup>; **OR**
  - Complex proximal humerus fracture<sup>8</sup>; **OR**
  - Primary osteoarthritis and **ANY** of the following:
    - Glenoid bone stock is inadequate<sup>9</sup>; **OR**
    - The risk of glenoid loosening is high (i.e., young patients, heavy laborers)<sup>10</sup>; **OR**
- The procedure is a revision total shoulder arthroplasty (reverse or anatomic), and **ALL** of the following are **TRUE**<sup>3,28</sup>:
  - The patient has **ANY** of the following findings:
    - Pain; **OR**
    - Infection; **OR**
    - Instability; **OR**
    - Loosening of the prosthesis; **OR**

- Failure of the prosthesis; **OR**
- Periprosthetic fracture; **OR**
- Glenoid erosion from a humeral prosthetic component of hemiarthroplasty; **OR**
- Implant fracture; **OR**
- Implant mechanical failure; **OR**
- Proximal migration of humeral head; **AND**
- The patient has **ANY** of the following advanced imaging or radiography findings:
  - Loosening of the prosthesis; **OR**
  - Failure of the prosthesis; **OR**
  - Normal (no findings); **OR**
- The procedure is an explant due to infection.<sup>29</sup>

### Non-Indications

**Shoulder arthroplasty** is not considered appropriate if **ANY** of the following is **TRUE**<sup>30</sup>:

- Active joint infection; **OR**
- Systemic infection; **OR**
- Neuropathic joint.

### Level of Care Criteria

Inpatient and Outpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                                |
|----------------|---------------------------------------------------------------------------------------------------------------------------------|
| 23334          | Removal of prosthesis, includes debridement and synovectomy when performed; humeral or glenoid component                        |
| 23335          | Removal of prosthesis, includes debridement and synovectomy when performed; humeral and glenoid components (eg, total shoulder) |
| 23470          | Arthroplasty, glenohumeral joint; hemiarthroplasty                                                                              |
| 23472          | Arthroplasty, glenohumeral joint; total shoulder                                                                                |

|       |                                                                                                            |
|-------|------------------------------------------------------------------------------------------------------------|
|       | (glenoid and proximal humeral replacement [e.g., total shoulder])                                          |
| 23473 | Revision of total shoulder arthroplasty, including allograft when performed; humeral or glenoid component  |
| 23474 | Revision of total shoulder arthroplasty, including allograft when performed; humeral and glenoid component |
| 23929 | Unlisted procedure, shoulder                                                                               |

## Medical Evidence

Li et al. (2025) conducted a meta-analysis of 45 studies comparing patients treated with primary reverse total shoulder arthroplasty (rTSA), hemiarthroplasty, or anatomic total shoulder arthroplasty (aTSA).<sup>31</sup> Their final analysis consisted of 1,152 patients involved in studies comparing rTSA and hemiarthroplasty and 26,786 patients in studies comparing rTSA and aTSA. Patients treated with rTSA showed significantly more improvement than those treated with hemiarthroplasty in all functional and outcome measures except forward flexion. The comparison between aTSA and rTSA was more complicated, with some measures favoring the former and others the latter. Overall, patients treated with aTSA appeared to have somewhat better outcomes, though the authors could not rule out the potential influence of preoperative factors. The authors summarized that while clinical outcomes are generally better after rTSA than after hemiarthroplasty, clinical outcomes are most improved after aTSA. However, the authors concluded that individual patient, disease, and shoulder characteristics should determine the appropriate procedure.

In their review, Harrison et al. (2020) noted that rTSA has relatively high complication (6–50%) and reoperation (5–24%) rates; however, this procedure can improve pain, function, and patient satisfaction when other surgical interventions are not viable.<sup>15</sup> The reverse design may address complications following aTSA or hemiarthroplasty, such as glenoid component removal, rotator cuff failure or deficiency, or proximal humerus bone loss.<sup>15</sup> In patients 65 years of age or older, rates of rTSA have increased while rates of hemiarthroplasty have decreased.<sup>19</sup> Compared to other surgical procedures, rTSA offers superior functional outcomes, range of motion, and patient satisfaction, and is the preferred treatment for 3-part, 4-part, and head-splitting fractures of the proximal humerus in older adults.<sup>19</sup>

In a systematic review of 20 studies comparing complication rates, hospital readmissions, and emergency department visits in patients undergoing TSA procedures in either inpatient or outpatient settings, Puzzitiello et al. (2020) reported no significant differences in safety or cost measures between

groups. The authors concluded that since outpatient TSA is generally safe, less costly, and less resource-intensive, it may be preferable for select low-risk patients. However, the authors also note that careful patient selection is critical as older, more medically infirm patients may require inpatient treatment.<sup>32</sup>

Leroux et al. (2018) conducted a retrospective cohort study of the medical records of 332,593 patients, 17,883 of whom had a diagnosis of rheumatoid arthritis, who underwent shoulder arthroplasty including hemiarthroplasty, aTSA, and rTSA procedures. The authors reported no significant differences in adverse events or hospitalization costs between patients with or without rheumatoid arthritis and a difference of only 0.1 days in hospital stay.<sup>23</sup>

In 2023, the American Shoulder and Elbow Surgeons (ASES) and the European Society for Surgery of the Shoulder and Elbow (SECEC) collaborated to issue their international consensus statement on the management of glenohumeral arthritis in patients 50 years old or younger.<sup>7</sup> Consensus statements included the following: patients with severe symptoms who had failed a course of conservative management and for whom imaging confirms advanced disease be considered for surgery, regardless of young age; rTSA is preferred for patients with glenohumeral arthritis and incompetent rotator cuffs; hemiarthroplasty is preferred for patients with advanced avascular necrosis; and aTSA is preferred for patients with inflammatory arthritis, intact rotator cuffs and mild glenoid wear.

In the 2020 clinical practice guideline on the management of glenohumeral osteoarthritis, the American Academy of Orthopaedic Surgeons (AAOS) noted strong evidence for (TSA) in patients with destructive or degenerative disease when conservative therapy has been unsuccessful or is not appropriate. The guideline also cautions that TSA procedures also carry risks and complications.<sup>3</sup> Moreover, the guidelines note that TSA procedures result in “more favorable function and pain relief in the short- to mid-term follow-up when compared to hemiarthroplasty for the treatment of glenohumeral osteoarthritis.”

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# Policy Revision History/Information

| Original Date: December 9, 2020 |            |                                                                                                                                                                                                                                                                     |
|---------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                  |            |                                                                                                                                                                                                                                                                     |
| Version 2                       | 12/29/2023 | Policy criteria reviewed and updated per medical literature.                                                                                                                                                                                                        |
| Version 3                       | 03/29/2024 | Policy criteria reviewed and updated per medical literature.                                                                                                                                                                                                        |
| Version 4                       | 07/10/2025 | <p>Annual review.</p> <p>Removed CPT Code 20680.</p> <p>Added criteria for nicotine cessation.</p> <p>Clarified criteria for reverse TSA (patient not a candidate for TSA).</p> <p>Literature review – Medical Evidence section updated (including references).</p> |



## **Cohere Medical Policy – Shoulder Arthroscopy**

*Clinical Policy for Medical Necessity Review*

**Version:** 5

**Revision Date:** May 29, 2025

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Shoulder Arthroscopy

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Shoulder Arthroscopy***

### **Description**

A shoulder arthroscopy is a minimally invasive surgical technique that may involve one or more of several procedures, including the repair of shoulder components such as the rotator cuff, labrum, ligaments, or inflamed tissue or cartilage. Through a small incision and with the aid of an arthroscope, the surgeon is able to thoroughly visualize the shoulder and treat several conditions involving the structures of the joint.<sup>1-9</sup>

### **Medical Necessity Criteria**

#### **Indications**

**Shoulder arthroscopy – adjunctive/soft tissue procedures** is considered appropriate if **ALL** of the following are **TRUE**:

- Significant pain and/or functional impairment that impacts activities of daily living<sup>2,6</sup>; **AND**
- **ANY** of the following:
  - The procedure is performed as part of a medically necessary surgery (e.g., acute rotator cuff tear)<sup>6</sup>; **OR**
  - **ALL** of the following:
    - Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>10-16</sup>:
      - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
      - Physical therapy, including a physician-directed home exercise program; **AND**
      - **ANY** of the following:
        - Corticosteroid injection if medically appropriate; **OR**
        - Documentation that corticosteroid injection is contraindicated; **AND**



- **ANY** of the following:
  - The procedure is a subacromial decompression and **ALL** of the following<sup>17,18</sup>:
    - Clinical examination findings consistent with impingement syndrome<sup>19</sup>; **AND**
    - Imaging (e.g., radiographs, CT, MRI) demonstrates the presence of type II/III or hooked acromium<sup>18</sup>; **OR**
  - The procedure is a distal clavicle resection and **ALL** of the following<sup>6,17</sup>:
    - Examination findings positive for acromioclavicular joint (ACJ) pain (e.g., tenderness at the ACJ, cross-body adduction, resisted ACJ extension test, Neer Impingement test, Hawkins-Kennedy impingement test); **AND**
    - Imaging findings (e.g., radiographs, CT, or MRI) demonstrate **ANY** of the following<sup>20</sup>:
      - Moderate to severe ACJ arthritis; **OR**
      - Inferior osteophytes impinging upon the rotator cuff; **OR**
  - The procedure is a biceps tenodesis/tenotomy and **ANY** of the following<sup>21</sup>:
    - Examination findings positive for biceps pain (e.g., anterior slide test, biceps load test, biceps tendon tenderness in the bicipital groove, clink test, compression rotation test, O'Brien's test, Speed's test, uppercut test, Yergason test); **OR**
    - Advanced diagnostic imaging (e.g., MRI, CT) demonstrates presence of biceps pathology (e.g., tenderness, Superior labrum anterior and posterior (SLAP) tear, biceps tendinopathy/partial tearing); **OR**
  - The procedure is a debridement and **ALL** of the following<sup>3,17</sup>:
    - Imaging studies (e.g., radiographs, MRI, CT) demonstrate bony and/or soft tissue pathology that correlates with symptoms and physical exam findings; **OR**
  - The procedure is a loose body removal and **ALL** of the following<sup>17,22</sup>:
    - Shoulder pain and mechanical symptoms (e.g., catching, locking, clicking); **AND**
    - Imaging findings (e.g., radiographs, CT, or MRI) demonstrate the presence of a loose body; **OR**
  - The procedure is a superior labrum anterior and posterior (SLAP) repair and **ALL** of the following<sup>17,23,24</sup>:
    - Examination findings consistent with symptomatic SLAP tear; **AND**

- Imaging findings demonstrate a superior labral tear consistent with exam findings; **OR**
- The procedure is a synovectomy and **ANY** of the following<sup>25,26</sup>:
  - History or examination consistent with symptomatic synovitis; **OR**
  - Image findings demonstrate pathological synovium.

**Shoulder arthroscopy – rotator cuff repair (RCR)** is considered appropriate if **ANY** of the following is **TRUE**<sup>4,6,17,27</sup>:

- **ALL** of the following:
  - Advanced diagnostic imaging (e.g., MRI, CT) demonstrates **ANY** of the following:
    - High-grade partial-thickness rotator cuff tear; **OR**
    - A full-thickness rotator cuff tear (Cofield classification); **AND**
  - Significant pain and/or functional impairment that impacts activities of daily living; **AND**
  - **ANY** of the following:
    - Documentation of an acute rotator cuff tear (RCT) after an inciting event or injury; **OR**
    - Documentation of a chronic RCT and **ALL** of the following<sup>28</sup>:
      - Failure of conservative management for greater than 6 weeks, including **ALL** of the following<sup>29</sup>:
        - Physical therapy, including a physician-directed home exercise program; **AND**
        - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **OR**
- The procedure is a revision of a previous rotator cuff repair and **ALL** of the following<sup>17,30</sup>:
  - Significant pain and/or functional impairment that impacts activities of daily living; **AND**
  - **ANY** of the following:
    - Advanced diagnostic imaging findings document a recurrent rotator cuff tear; **OR**
    - Suspected postsurgical complication.

**Shoulder arthroscopy- capsular and diagnostic procedures** is considered appropriate if **ANY** of the following is **TRUE**:

- The procedure is a capsular release/lysis of adhesions and **ALL** of the following<sup>[7-9,17,31](#)</sup>:
  - Significant loss of both active AND passive shoulder range of motion on examination; **AND**
  - Failure of conservative management for greater than 3 months, including **AT LEAST TWO** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **OR**
    - Physical therapy, including a physician-directed home exercise program; **OR**
    - **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Documentation that corticosteroid injection is contraindicated; **AND**
  - Imaging findings (e.g., radiographs, computed tomography[CT], or magnetic resonance imaging[MRI]) do not identify any other shoulder pathology (e.g. severe arthritis, rotator cuff tear, labral tear, etc.) as the primary source of the symptoms; **AND**
  - Significant pain and/or functional impairment that impacts activities of daily living; **OR**
- The procedure is a capsulorrhaphy/labral repair for shoulder instability and **ALL** of the following<sup>[17,32-34](#)</sup>:
  - Documented history of traumatic or atraumatic shoulder instability/laxity (e.g., dislocation, subluxation) **AND**
  - Documented loss of shoulder function that impacts activities of daily living or demands of employment; **AND**
  - Physical examination consistent with instability (e.g. apprehension test, relocation test, load/shift test, anterior and/or posterior drawer, jerk test, or sulcus sign); **AND**
  - Advanced diagnostic imaging (e.g., MRI, CT) consistent with instability (e.g. Bankart lesion, GLAD, HAGL, Patulous/redundant capsule); **AND**
  - **ANY** of the following:
    - Acute traumatic injury less than or equal to 30 days old; **OR**
    - Failure of conservative management for greater than 3 months,

including **AT LEAST TWO** of the following:

- Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **OR**
- Physical therapy, including a physician-directed home exercise program; **OR**
- **ANY** of the following:
  - Corticosteroid injection if medically appropriate; **OR**
  - Documentation that corticosteroid injection is contraindicated; **OR**
- The procedure is a diagnostic arthroscopy and **ALL** of the following<sup>9,17,30,35</sup>:
  - Significant pain and/or functional impairment that impacts activities of daily living; **AND**
  - The patient has **ANY** of the following positive exam findings:
    - Instability; **OR**
    - Weakness; **OR**
    - Decreased range of motion; **OR**
    - Painful shoulder range of motion; **AND**
  - **ANY** of the following:
    - Synovial biopsy is required for definitive diagnosis (e.g., clinical, imaging, or laboratory findings inconclusive or arthritis etiology is unclear)<sup>36,37</sup>; **OR**
    - Imaging findings (e.g., radiographs, CT, or MRI) are inconclusive as to the source of shoulder pain; **AND**
  - Failure of conservative management for greater than 3 months, including **ALL** of the following<sup>38</sup>:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy, including a physician-directed home exercise program; **AND**
    - **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Documentation that corticosteroid injection is contraindicated.

## Non-Indications

**Shoulder arthroscopy** is not considered appropriate if **ANY** of the following is **TRUE**:

- Thermal capsulorrhaphy is not considered medically necessary<sup>39</sup>; **OR**
- Biotuberplasty, biceps sling, and superior capsular reconstruction for irreparable rotator cuff tears are considered clinically unproven and not medically necessary<sup>40-42</sup>; **OR**
- Arthroscopic debridement and/or removal of intra-articular loose body is not indicated in the presence of Kellgren-Lawrence grade 3 or 4 osteoarthritis<sup>25,43,44</sup>; **OR**
- Use of subacromial balloon spacer to treat irreparable rotator cuff tear<sup>45,46</sup>; **OR**
- Rotator cuff and/or labral repair in the presence of active infection (local or remote)<sup>47</sup>; **OR**
- Rotator cuff arthropathy.<sup>48</sup>

## Level of Care Criteria

Outpatient

## Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                           |
|----------------|----------------------------------------------------------------------------|
| 23450          | Capsulorrhaphy, anterior; Putti-Platt procedure or Magnuson type operation |
| 23455          | Capsulorrhaphy, anterior; with labral repair (eg, Bankart procedure)       |
| 23460          | Capsulorrhaphy, anterior, any type; with bone block                        |
| 23462          | Capsulorrhaphy, anterior, any type; with coracoid process transfer         |
| 23465          | Capsulorrhaphy, glenohumeral joint, posterior, with or without bone block  |
| 23466          | Capsulorrhaphy, glenohumeral joint, any type multidirectional instability  |

|       |                                                                                                                                                                                                                             |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 23929 | Unlisted procedure, shoulder                                                                                                                                                                                                |
| 29805 | Diagnostic examination of shoulder using an endoscope                                                                                                                                                                       |
| 29806 | Arthroscopy, shoulder, surgical; capsulorrhaphy                                                                                                                                                                             |
| 29807 | Surgical arthroscopy of shoulder with repair of SLAP lesion                                                                                                                                                                 |
| 29819 | Removal of loose or foreign body of shoulder using an endoscope                                                                                                                                                             |
| 29820 | Arthroscopy, shoulder, surgical; synovectomy, partial                                                                                                                                                                       |
| 29821 | Arthroscopy, shoulder, surgical; synovectomy, complete                                                                                                                                                                      |
| 29822 | Surgical arthroscopy of shoulder with debridement<br>Surgical arthroscopy of shoulder with limited debridement                                                                                                              |
| 29823 | Surgical arthroscopy of shoulder with debridement<br>Surgical arthroscopy of shoulder with extensive debridement                                                                                                            |
| 29824 | Surgical arthroscopy of shoulder with distal claviclectomy                                                                                                                                                                  |
| 29825 | Surgical arthroscopy of shoulder with lysis and resection of adhesions<br>Surgical arthroscopy of shoulder with lysis and resection of adhesions with manipulation                                                          |
| 29826 | Arthroscopy, shoulder, surgical; decompression of subacromial space with partial acromioplasty, with coracoacromial ligament (ie, arch) release, when performed (List separately in addition to code for primary procedure) |
| 29827 | Surgical arthroscopy of shoulder with repair of rotator cuff                                                                                                                                                                |
| 29828 | Surgical arthroscopy of shoulder with biceps                                                                                                                                                                                |

|       |                                                                                                                                                                                                                            |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | tenodesis                                                                                                                                                                                                                  |
| 29999 | Unlisted procedure, arthroscopy                                                                                                                                                                                            |
| C9781 | Arthroscopy, shoulder, surgical; with implantation of subacromial spacer (e.g., balloon), includes debridement (e.g., limited or extensive), subacromial decompression, acromioplasty, and biceps tenodesis when performed |
| S2300 | Arthroscopy, shoulder, surgical; with thermally-induced Not Covered capsulorrhaphy                                                                                                                                         |

**Disclaimer:** S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

## Medical Evidence

Kim et al. (2021) examined the predominance of arthroscopic distal clavicle excision procedures, specifically those using a fluoroscopic Kirchner wire guide. The technical aspects of the procedure were described, and the group concluded that using the fluoroscopic wire leads to surgical success, particularly in new orthopedic surgeons, as the distal clavicle excision is a technically demanding procedure due to visualization difficulties. They state that open distal clavicle excision remains the gold standard procedure for acromioclavicular joint arthritis.<sup>20</sup>

Redler et al. (2019) examined the literature related to treating adhesive capsulitis of the shoulder, with a discussion of the higher incidence of the diagnosis in diabetic patients, particularly those with long-standing, poorly controlled disease. Hyperthyroidism was determined in studies to be an independent risk factor for developing adhesive capsulitis. The authors preferred surgical technique post-nonsurgical interventions, including both anterior and posterior capsular release with rotator interval release and release of the coracohumeral ligament.<sup>8</sup>

Optimal management of glenohumeral osteoarthritis was reviewed by Ansok et al. (2018), concluding that initial conservative treatment includes the use of viscosupplementation or corticosteroid injections. The age and function of the affected patient should determine the necessity of operative treatment, and operative treatment of young individuals with glenohumeral osteoarthritis remains controversial. Younger, more active patients do benefit from non-arthroplasty techniques or procedures with minimal bone resection.<sup>50</sup>

Millett et al. (2018) examined the options for treating young, active patients with primary glenohumeral osteoarthritis, stating that arthroplasty may not be ideal in that population. They state that clinical studies report arthroscopic approaches for procedures such as synovectomy, chondroplasty, loose body removal, capsular release, and biceps tenodesis may improve clinical outcomes. It is concluded that arthroscopic management of glenohumeral osteoarthritis has numerous advantages over total shoulder arthroplasty; however, additional larger studies are needed.<sup>25</sup>



The American Academy of Orthopaedic Surgeons (AAOS) has published the following clinical guidelines related to shoulder arthroscopy:

- *Management of Glenohumeral Osteoarthritis* (2020): Arthroscopic debridement with capsular release is recommended for young patients with glenohumeral joint osteoarthritis.<sup>2</sup>
- *Management of Rotator Cuff Injuries* (2019): Moderate strength evidence does not support the routine use of acromioplasty as adjunct treatment compared to arthroscopic repair alone. A strong recommendation was given for arthroscopic-only technique for better short-term improvement compared to open repair. For unrepairable tears without arthropathy, various arthroscopic treatments received a consensus recommendation.<sup>6</sup>

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# Clinical Guideline Revision History/Information

| Original Date: May 22, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History              |            |                                                                                                                                                                                                                                                                                                                                                                 |
| Version 2                   | 10/13/2023 | Policy criteria reviewed and updated per medical literature                                                                                                                                                                                                                                                                                                     |
| Version 3                   | 12/29/2023 | Policy criteria reviewed and updated per medical literature                                                                                                                                                                                                                                                                                                     |
| Version 4                   | 2/26/2024  | Policy criteria reviewed and updated per medical literature                                                                                                                                                                                                                                                                                                     |
| Version 5                   | 5/29/2025  | <p>Annual review</p> <p>Corrected Errors in references/added new references</p> <p>Added codes 23450-23466 (Capsulorrhaphy)</p> <p>Reorganized criteria</p> <p>Specified that thermal capsulorrhaphy is non-indicated</p> <p>Added non-indication for Biotuberplasty, biceps sling, and superior capsular reconstruction for irreparable rotator cuff tears</p> |





## **Cohere Medical Policy – Shoulder Biceps Tenodesis/Tenotomy**

*Clinical Policy for Medical Necessity Review*

**Version: 2**

**Cohere Health UMC Approval Date: July 31, 2025**

Last Annual Review: July 31, 2025

Revision: Not Applicable

Next Annual Review: July 31, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Shoulder Biceps Tenodesis/Tenotomy

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Shoulder Biceps Tenodesis/Tenotomy***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Biceps tenodesis and tenotomy are surgical procedures used to address conditions affecting the long head of the biceps tendon (LHBT). Biceps tenodesis involves detaching the LHBT at the glenoid and reattaching it to the humerus. Biceps tenotomy detaches the LHBT from its origin without reattachment. The appropriate procedure may be performed open or arthroscopically, depending on the patient's functional requirements, age, and the surgeon's discretion.<sup>1</sup> There is no consensus regarding choosing tenodesis for proximal biceps tendon pathology with or without rotator cuff tear.<sup>2-5</sup>

## **Medical Necessity Criteria**

### **Indications**

**Shoulder biceps tenodesis/tenotomy** is considered appropriate if **ANY** of the following is **TRUE**<sup>2-8</sup>:

- The patient has an acute bicep rupture with **ALL** of the following<sup>9</sup>:
  - Acute injury with noted deformity on exam or confirmed on imaging;
  - AND**
  - Active (e.g., physically demanding jobs); **AND**
  - Significant pain and weakness or weakness on exam; **OR**
- The patient has **ALL** of the following:
  - Positive exam findings for biceps tendon pathology (e.g., Speed's, O'Briens, Yergason, biceps groove tenderness); **AND**
  - Significant pain and/or functional impairment that impacts activities of daily living (ADLs); **AND**
  - Failure of conservative management for greater than 3 months, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy or a physician-directed home exercise program; **AND**
    - **ANY** of the following:
      - Corticosteroid injection if medically appropriate; **OR**
      - Documentation that corticosteroid injection is contraindicated;**AND**

- Magnetic resonance imaging (MRI) or computed tomography (CT) with radiologic report that demonstrates biceps tendon pathology, including **ANY** of the following:
  - Biceps tendon subluxation/dislocation; **OR**
  - Biceps tenosynovitis/tendinopathy/tearing; **OR**
  - Superior labrum anterior and posterior (SLAP) tear; **OR**
  - Hypertrophy of the proximal biceps tendon.

## Non-Indications

**Shoulder biceps tenodesis/tenotomy** is not considered appropriate if **ANY** of the following is **TRUE**:

- Biceps tenotomy or tenodesis is being performed as part of a total shoulder arthroplasty (not separately billable); **OR**
- Biceps tenotomy in an athlete or patient with high-activity demands<sup>1</sup>; **OR**
- Asymptomatic biceps pathology.

## Level of Care Criteria

Outpatient

## Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                                                                                                                              |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 23430          | Tenodesis of long head of biceps muscle                                                                                                                                                                                                                                                                                                                       |
| 23440          | Resection or transplantation of long tendon of biceps                                                                                                                                                                                                                                                                                                         |
| 29823          | Arthroscopy, shoulder, surgical; debridement, extensive, 3 or more discrete structures (eg, humeral bone, humeral articular cartilage, glenoid bone, glenoid articular cartilage, biceps tendon, biceps anchor complex, labrum, articular capsule, articular side of the rotator cuff, bursal side of the rotator cuff, subacromial bursa, foreign body[ies]) |
| 29828          | Arthroscopy, shoulder, surgical; biceps tenodesis                                                                                                                                                                                                                                                                                                             |

## Medical Evidence

Zhang et al. (2023) conducted a study aimed at determining the optimal surgical strategy for long head of the biceps tendon (LHBT) lesions by comparing tenotomy and tenodesis through a meta-analysis of randomized controlled trials (RCTs). Ten RCTs involving 787 cases were analyzed. Results showed that tenodesis led to significantly better outcomes regarding Constant scores, Simple Shoulder Test (SST) scores, and reduction in Popeye deformity and cramping pain compared to tenotomy. However, there were no significant differences between the two procedures regarding pain relief, American Shoulder and Elbow Surgeons (ASES) score, biceps strength, and shoulder range of motion. Subgroup analysis suggested that intracuff tenodesis might offer the best shoulder function, as measured by Constant scores. Both procedures provide satisfactory results. However, tenodesis appears superior in improving shoulder function and reducing certain complications associated with biceps tendon lesions.<sup>10</sup>

Ahmed et al. (2021) compare the effectiveness of tenotomy versus tenodesis for treating long head of the biceps tendon pathologies. Outcomes measured include shoulder functional improvement, postoperative pain, elbow flexion, forearm supination strength, and complications. The authors reviewed RCTs with a minimum of 12 months of follow-up. Tenodesis and tenotomy show similar improvement in the Constant-Murley score at 6 and 12 months postoperatively. However, tenotomy resulted in a significantly lower Constant-Murley score at two years compared to tenodesis. Tenotomy also had a higher risk ratio for developing Popeye's deformity. Based on current evidence, both techniques are recommended and have similar results concerning functional outcomes, pain levels, and strength indices.<sup>11</sup>

Belk et al. (2021) conducted a systematic review of 5 level I randomized controlled trials (RCTs) on the complications and clinical outcomes of biceps tenodesis and tenotomy for the treatment of LHBT. A total of 468 patients were included across all studies; the mean age of patients was 60.3 (biceps tenodesis) and 59.7 (biceps tenotomy). The mean follow-up time was 23 months. Clinical outcomes were similar for both procedures. The authors noted that cosmetic deformity was more common in patients who underwent biceps tenotomy vs tenodesis. Aside from cosmetic deformities,

postoperative complications included reoperation, infection, cramping, stiffness, adhesive capsulitis, and neural or vascular injury. Complication rates were similar for both procedures.<sup>12</sup>

Frank et al. (2018) discuss the management of biceps tendon pathology. The long, inflamed head of the biceps tendon is managed surgically when symptomatic via procedures including tenotomy, tenodesis, and repair. Controversy exists on the most appropriate treatment and timing of such. A course of conservative treatment is recommended, if possible, before surgical treatment. Success rates gleaned from the literature regarding superior labrum from anterior to posterior (SLAP) are consistently high.<sup>1</sup>



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# Policy Revision History/Information

| Original Date: May 28, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Version 2                   | 07/31/2025 | <p>Annual review.</p> <p>Added indication for a patient with acute bicep rupture with ALL of the following (Alfatooni et al., 2000):</p> <ul style="list-style-type: none"> <li>• Acute injury with noted deformity on exam or confirmed on imaging; AND</li> <li>• Active (e.g., physically demanding jobs); AND</li> <li>• Significant pain and weakness or weakness on exam.</li> </ul> <p>Updated bullet for positive exam findings to “the patient has positive exam findings for biceps tendon pathology (e.g., Speed’s Obriens’, Yergason, biceps groove tenderness)”. Removed sub-bullets for anterior slide test, biceps load test, clunk test, compression rotation test, biceps tendon tenderness in the bicipital groove, O’Brien’s test, Speed’s test, Uppercut test, and Yergason test.</p> <p>Standard failure of conservative management language was updated per the Style Guide. Revised the indication from “oral steroids, anti-inflammatory medications, or analgesics” to “anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids,</p> |

|  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>neuropathic pain medications) if not contraindicated.” Also added to the indication for “physical therapy” to state “or a physician-directed home exercise program.”</p> <p>Standard language for advanced imaging was updated per the Style Guide. Revised from “advanced diagnostic imaging studies (e.g., MRI, CT) demonstrate biceps tendon pathology and correlate with the patient’s symptoms and physical exam findings” to “magnetic resonance imaging (MRI) or computed tomography (CT) with radiologic report that demonstrates biceps tendon pathology.”</p> <p>Updated references for indication section (Cardoso et al., 2019; Manske et al., 2013; George et al., 2008).</p> <p>Added CPT 29823.</p> <p>Removed CPT S2300.</p> <p>Added non-indication for “asymptomatic biceps pathology.”</p> <p>Literature review – Medical Evidence section updated (Belk et al., 2021).</p> |
|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## **Cohere Medical Policy – Shoulder Manipulation Under Anesthesia (MUA)**

*Clinical Policy for Medical Necessity Review*

**Version: 2**

**Cohere Health UMC Approval Date: July 24, 2025**

Last Annual Review: July 24, 2025

Revision: Not applicable

Next Annual Review: July 24, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Shoulder Manipulation Under Anesthesia (MUA)

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Shoulder Manipulation Under Anesthesia (MUA)***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the



patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Shoulder manipulation under anesthesia (MUA) is a non-invasive procedure used to improve mobility in patients with frozen shoulder contracture syndrome—an inflammation of the subacromial bursa resulting in pain and restrictions in movement.<sup>1-4</sup> During the procedure, performed under anesthesia, the shoulder of the patient is stretched and manipulated through the joint's full range of motion. The procedure is immediately followed by physiotherapy.<sup>5-7</sup>

## **Medical Necessity Criteria**

### **Indications**

**Shoulder manipulation under anesthesia (MUA)** is considered appropriate if **ALL** of the following are **TRUE**<sup>1,2,7-9</sup>:

- The patient has had clinical signs and symptoms of adhesive capsulitis (frozen shoulder) for at least 3 months; **AND**
- Failure of conservative management for greater than 3 months, including **ALL** of the following:
  - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
  - Physical therapy or a physician-directed home exercise program; **AND**
  - **ANY** of the following:
    - Corticosteroid injection if medically appropriate; **OR**
    - Documentation that corticosteroid injection is contraindicated; **AND**
- Significant and documented loss of motion compared to the contralateral shoulder (forward flexion less than 110°, external rotation less than 50°)<sup>3,10</sup>; **AND**
- Imaging findings do not identify other shoulder pathology as the primary source of the symptoms (e.g., severe arthritis).

### **Non-Indications**

**Shoulder manipulation under anesthesia (MUA)** is not considered appropriate if **ANY** of the following is **TRUE**<sup>11</sup>:

- Severe osteoporosis.

**Level of Care Criteria**

Inpatient or Outpatient

**Procedure Codes (CPT/HCPCS)**

| CPT/HCPCS Code | Code Description                                                                                                  |
|----------------|-------------------------------------------------------------------------------------------------------------------|
| 23700          | Manipulation under anesthesia, shoulder joint, including application of fixation apparatus (dislocation excluded) |

## Medical Evidence

Kraal et al. (2023) conducted a randomized control trial (RCT) to assess the effectiveness of Manipulation Under Anesthesia (MUA) followed by physiotherapy (PT) compared to PT alone in treating stage 2 Frozen Shoulder (FS). The trial involved 82 patients – both groups showed significant improvement in outcomes at the one-year follow-up, including Shoulder Pain and Disability Index (SPADI) scores, Oxford Shoulder Score, pain, range of motion (ROM), and quality of life. However, MUA improved SPADI scores faster at three months and showed significantly better increases in anteflexion and abduction ROM throughout the follow-up period. No significant complications were reported in either group. The authors concluded that MUA can be considered safe and leads to a quicker recovery of ROM and improved functional outcomes compared to PT alone in the short term, but after one year, the results of MUA are comparable to PT, with slightly better ROM scores for MUA.<sup>2</sup>

Fairclough et al. (2023) performed a retrospective analysis to examine the long-term outcomes of MUA as a treatment for frozen shoulder (FS). The study included 398 shoulders treated between 1999 and 2010, with complete data available for 240 shoulders. The findings indicate that at a mean follow-up of 13.2 years, the majority (71.3%) had no symptoms, 16.6% had minor, and 12.1% had significant symptoms. Only a small percentage experienced a recurrence of FS or required repeat MUA. Additionally, the development of other shoulder problems, such as rotator cuff pathology or shoulder osteoarthritis, was relatively low and comparable to that of the general population. Overall, research shows that MUA for FS yields favorable long-term outcomes, with few instances of recurrence and no significant increase in the development of other shoulder issues.<sup>8</sup>

A clinical study, performed by Takahashi et al. (2020), compared the results of shoulder manipulation under ultrasound-guided cervical nerve root block among patients with diabetes mellitus (DM) and patients without the metabolic condition. While both groups saw significant improvements in several measures, including forward flexion, internal rotation, and Constant Shoulder Score, when compared to the non-DM group, the DM cohort saw significantly smaller improvements in external rotation.<sup>12</sup>

Brealey et al. (2020) conducted a multicenter, open-label, three-arm, randomized trial to compare the effectiveness and cost-effectiveness of three treatments for frozen shoulder. Treatments included early structured physiotherapy with a steroid injection, MUA with a steroid injection, and arthroscopic capsular release followed by manipulation. The primary outcome measured was the Oxford Shoulder Score at 12 months post-randomization. The study found that arthroscopic capsular release resulted in a statistically significant improvement in shoulder function compared to MUA or early structured physiotherapy. However, these differences were not deemed clinically significant. Serious adverse events were rare but more common in participants who underwent surgery. Qualitative data suggested that patients preferred quicker resolution of their shoulder problems. However, none of the interventions emerged as superior, with early structured physiotherapy being accessible and low-cost, MUA being the most cost-effective, and arthroscopic capsular release carrying higher risks and costs.<sup>13</sup>

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# Policy Revision History/Information

| Original Date: May 10, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Version 2                   | 07/24/2025 | <p>Annual Review</p> <p>Added procedure description (page 4).</p> <p>Updated conservative care requirements.</p> <p>Added values to the indication: Significant and documented loss of motion compared to the contralateral shoulder (forward flexion less than 110°, external rotation less than 50°)</p> <p>The medical evidence section has been updated to include Takahashi et al. (2020).</p> <p>Citations and references added (Song et al.; Lewis et al.; Ko et al.; Lancaster et al.; Takahashi et al.; Brealey et al.)</p> |



## **Cohere Medical Policy - Spinal Allogeneic Tissue-Based Injections**

*Clinical Policy for Medical Necessity Review*

**Version:** 4

**Policy Number:** CHP-005-4

**Cohere Health UMC Approval Date:** January 15, 2026

Last Annual Review: January 15, 2026

Revision: Not Applicable

Next Annual Review: January 15, 2027



# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Spinal Allogeneic Tissue-Based Injections

**Policy Number:** CHP-005-4

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Spinal Allogeneic Tissue-Based Injections***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation or those that do not align with the provided clinical information—such as mismatched laterality, body part, or CPT code—may be denied due to a lack of medical necessity resulting from insufficient or inconsistent clinical information.
- When multiple diagnostic or therapeutic procedures are requested simultaneously or within the past 3 months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request.
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed.
  - How the results will impact patient management or treatment decisions.
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Allogeneic tissue products are used when conservative treatments of intervertebral disc degeneration (e.g., activity modification, progressive relaxation, spinal manipulation, physical therapy, physiotherapy, pharmacological treatment) have failed.<sup>1</sup> Allogeneic products—mesenchymal stem cells isolated from bone marrow and adipose tissue—are injected into discs of the spine to induce the regeneration of tissue.<sup>2-8</sup> This policy addresses tissue-based injections for spine indications only; however, there may be indications in other specialties where this treatment is considered medically necessary and supported by the medical literature.

## **Medical Necessity Criteria**

### **Indications**

**Spinal allogeneic tissue-based injections** are considered appropriate if **ANY** of the following is **TRUE**:

- This procedure is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

### **Non-Indications**

**Spinal allogeneic tissue-based injections** are not considered appropriate if **ANY** of the following is **TRUE**:

- This is not applicable, as there are no indications.

## **Level of Care Criteria**

None

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0627T                 | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; first level                                                                       |
| 0628T                 | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; each additional level (List separately in addition to code for primary procedure) |
| 0629T                 | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; first level                                                                                 |
| 0630T                 | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; each additional level (List separately in addition to code for primary procedure)           |

## Medical Evidence

Lewandrowski et al. (2023) performed a small retrospective study to evaluate the safety and efficacy of allogeneic MSC injections in the lumbar intervertebral discs. Initial findings show improved pain scores and clinical functioning. Using Pfirrmann grading, MRI scans at follow-up show improvement after 2 years. Future research can strengthen the evidence of healing and reversal of degenerative changes in current studies.<sup>7</sup>

Amirdelfan et al. (2021) performed a multicenter RCT at 13 clinical locations (12 in the United States, 1 in Australia) to evaluate the safety and efficacy of a single intradiscal injection of STRO-3+ adult allogeneic mesenchymal precursor cells (MPCs) combined with hyaluronic acid (HA) in patients with chronic low back pain (CLBP) and degenerative disc disease (DDD). The studies included a total of 100 patients with a modified Pfirrmann score ranging from 3 to 6. Evaluation occurred at 1, 3, 6, 12, 24, and 36 months following single injections of STRO-3+ adult allogeneic mesenchymal precursor cells (MPCs) combined with hyaluronic acid. Visual Analog Scale (VAS) and Oswestry Disability Index (ODI) improved. Adverse effects were low. The authors concluded that while MPCs appear to be safe and possibly effective, larger blinded prospective randomized clinical trial would be necessary to confirm these findings.<sup>9</sup>

Results demonstrate that intradiscal injection of MPCs appears to be safe and may be an effective and durable minimally invasive therapy for subjects who have CLBP associated with moderate DDD. Further study results demonstrate that intradiscal injection of MPCs appears to be safe and may be an effective and durable minimally invasive therapy for subjects who have CLBP associated with moderate DDD. Further study in a larger blinded prospective randomized clinical trial that addresses the limitations of this initial clinical trial is warranted.

Matta et al. (2020) noted the potential of cell therapy for pain improvement. According to the authors, future research is required, ideally extensive, well-controlled studies, including those addressing disability. Biological factors that may reduce efficacy also warrant investigation (e.g., reduced pH, avascular status, long-term inflammation, progressive cell death).<sup>10</sup>

A literature review, conducted by Barakat et al. (2019), found that cell therapy for discogenic back pain shows benefits in existing studies and may eventually offer a viable alternative to current treatment modalities. However, the authors note that basic scientific and clinical studies have yet to establish the clinical efficacy of novel stem cell regenerative therapy for the treatment of low back pain.<sup>11</sup>

Sanapati et al. (2018) performed a meta-analysis on the efficacy of mesenchymal stem cells (MSCs) and platelet-rich plasma (PRP) for the treatment of low back pain. Management of discogenic low back pain, radicular pain, facet joint pain, and sacroiliac joint pain improved. The authors conclude that future high-quality randomized controlled trials (RCT) are needed.<sup>12</sup>

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# Policy Revision History/Information

| Original Date: August 28, 2023 |            |                                                                                                                                                                                                                                                                                                    |
|--------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                 |            |                                                                                                                                                                                                                                                                                                    |
| Version 3                      | 01/02/2025 | <p>Annual review</p> <p>Updated Recommended clinical approach.</p> <p>No changes were made to medical necessity criteria or procedure codes.</p> <p>Reformatted Medical Evidence section as per current guidelines.</p> <p>Procedure codes and references verified.</p> <p>References updated.</p> |
| Version 4                      | 01/15/2026 | <p>Annual Review.</p> <p>Updated Description section.</p> <p>Included additional Medical Evidence study summaries.</p> <p>Updated the References section and added references 1-5.</p>                                                                                                             |



# **Spinal Allogeneic Tissue-Based Injections**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 2  
**Effective Date:** August 28, 2023

# Important Notices

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## Guideline Information:

**Specialty Area:** Diseases & Disorders of the Musculoskeletal System

**Guideline Name:** Spinal Tissue-Based Injections

**Literature review current through:** August 23, 2023

**Document last updated:** August 23, 2023

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)

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# Medical Necessity Criteria

## ***Service: Spinal Allogeneic Tissue-Based Injections***

### General Guidelines

**Units, Frequency, & Duration:** This service is experimental/investigational.

**Criteria for Subsequent Requests:** This service is experimental/investigational.

**Recommended Clinical Approach:** Allogeneic tissue products are often used when conservative treatments have failed (e.g., activity modification, progressive relaxation, spinal manipulation, physical therapy, physiotherapy, pharmacological treatment). Products are injected into discs of the lumbar spine to regenerate tissue.<sup>1</sup> This policy addresses tissue-based injections for spine indications only; however, there may be indications in other specialties where this treatment is considered medically necessary and supported by the medical literature.

### Medical Necessity Criteria

#### **Indications**

→ **Spinal Allogeneic Tissue-Based Injections** is considered appropriate if **ALL** of the following are **TRUE**:

- ◆ Currently, there are no evidence-based indications for this service in the peer-reviewed, published literature.

#### **Non-Indications**

→ **Spinal Allogeneic Tissue-Based Injections** are not considered appropriate if **ALL** of the following are **TRUE**:

- ◆ These injections are considered experimental/investigational for treating musculoskeletal conditions. These include but are not limited to **ANY** of the following<sup>1-2</sup>:
  - Chronic back pain; **OR**
  - Herniated disc; **OR**
  - Sciatica; **OR**
  - Degenerative disc disease; **OR**
  - Intervertebral disc degeneration; **OR**
  - Discogenic back pain; **OR**
  - Radicular pain

## **Level of Care Criteria**

Outpatient

### **Procedure Codes (HCPCS/CPT)**

| <b>HCPCS/CPT Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0627T                 | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; first level                                                                       |
| 0628T                 | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; each additional level (List separately in addition to code for primary procedure) |
| 0629T                 | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; first level                                                                                 |
| 0630T                 | Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; each additional level (List separately in addition to code for primary procedure)           |

## Medical Evidence

Studies on the level of efficacy of allogenic tissue injections are below.

Sanapati et al. (2018) performed a meta-analysis on the efficacy of mesenchymal stem cells (MSCs) and platelet-rich plasma (PRP) for the treatment of low back pain. Management of discogenic low back pain, radicular pain, facet joint pain, and sacroiliac joint pain improved. Future high-quality RCT) are needed.<sup>2</sup>

Barakat et al. (2019) found that cell therapy for discogenic back pain shows benefits in existing studies, but further research is required.<sup>3</sup>

- Three studies evaluated cell therapy for degenerative disc disease: Soufi et al. (2023) performed a systematic review of 11 clinical studies, including one randomized control trial (RCT). The role of cell therapy shows potential benefits for pain; there is no consensus in existing clinical trials.

Matta et al. (2020) note the potential of cell therapy for pain improvement. Future research is required, ideally extensive, well-controlled studies, including those addressing disability. Biological factors that may reduce efficacy also warrant investigation (e.g., reduced pH, avascular status, long-term inflammation, progressive cell death).<sup>4</sup>

Amirdelfan et al. (2021) performed a multicenter RCT at 13 clinical locations (12 in the United States, 1 in Australia). The studies include 100 patients with a modified Pfirrmann score ranging from 3–6. Evaluation occurred at 1, 3, 6, 12, 24, and 36 months following single injections of STRO-3+ adult allogeneic mesenchymal precursor cells (MPCs) combined with hyaluronic acid. Visual Analog Scale (VAS) and Oswestry Disability Index (ODI) also improved. Adverse effects were low.<sup>5</sup>

Kaye et al. (2022) note that nonsteroid anti-inflammatory drugs are the first line of treatment when non-pharmacological therapy is unsuccessful. Tramadol or duloxetine is a second line of treatment. Opioids are for patients who do not respond to other treatments; patients are to receive education on the risks and benefits.<sup>6</sup>

Lewandrowski et al. (2023) performed a small retrospective study to evaluate the safety and efficacy of allogeneic MSC injections in the lumbar intervertebral discs. Initial findings show improved pain scores and clinical functioning. Using Pfirrmann grading, MRI scans at follow-up show



improvement after two years. Future research can strengthen the evidence of healing and reversal of degenerative changes in current studies.<sup>7</sup>

### **National and Professional Organizations**

The **American Society of Interventional Pain Physicians (ASIPP)** published a guideline on interventional techniques for chronic spinal pain. The ASIPP does not address cell therapy.<sup>9</sup>

The **North American Spine Society (NASS)** guideline does not address recommendations on allograft injections for low back pain.<sup>10</sup>

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## Clinical Guideline Revision History/Information

|                                |      |                                                                                                                                                                                             |
|--------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Original Date: August 28, 2023 |      |                                                                                                                                                                                             |
| Review History                 |      |                                                                                                                                                                                             |
| Version 2                      | DATE | Annual review. No changes to medical necessity criteria or procedure codes. Minor reformatted, including the Medical Evidence section, which was a bulleted list, and now is in paragraphs. |
|                                |      |                                                                                                                                                                                             |
|                                |      |                                                                                                                                                                                             |



## **Cohere Medical Policy - Spinal Cord Stimulators**

*Clinical Policy for Medical Necessity Review*

**Version: 4**

**Cohere Health UMC Approval Date: January 15, 2026**

**Policy Number:** CHP-299-4

Last Annual Review: January 15, 2026

Revision: Not Applicable

Next Annual Review: January 15, 2027

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Spinal Cord Stimulators

**Policy Number:** CHP-299-4

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Spinal Cord Stimulators***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Duplicate exams or requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed and/or treated with a single study or procedure.

## **Description**

A spinal cord stimulator (SCS) is an implantable device that delivers electrical impulses to the spinal cord to alleviate chronic pain. Before the permanent SCS placement, a trial must be conducted to assess if the patient will respond adequately to the SCS. Dorsal Root Ganglion (DRG) stimulation is done via epidural and intraspinal lead access to the dorsal root ganglion as an aid in the management of moderate to severe chronic intractable pain of the lower limbs in adult patients with Complex Regional Pain Syndrome (CRPS) types I and II.<sup>1-5</sup>

## **Medical Necessity Criteria**

### **Indications**

A **spinal cord stimulator (SCS)** is considered appropriate if **ANY** of the following is **TRUE**<sup>1-26</sup>:

A **spinal cord stimulator trial** when **ALL** of the following are **TRUE**:

- Pain has been present for 6 months or more; **AND**
- Moderate to severe intractable pain as measured on a pain scale (e.g. Numeric Rating Scale or Visual Analog Scale greater than or equal to 4 out of 10); **AND**
- Documentation of pain causing moderate to severe functional disability as measured on a disability scale (e.g. Oswestry Disability Index [ODI]<sup>6</sup> score greater than or equal to 21%); **AND**
- Pain-focused psychological evaluation and clearance have been performed within the last 12 months to determine if the patient is a suitable candidate for the SCS or dorsal root ganglion (DRG) stimulator; **AND**
- The patient has **ANY** of the following conditions:
  - Complex regional pain syndrome (also known as reflex sympathetic dystrophy), as diagnosed by **ALL** of the following, per Budapest criteria<sup>7</sup>:
    - Continued, ongoing pain, disproportionate to any inciting event (e.g., surgery, trauma); **AND**
    - A symptom in **AT LEAST THREE** of the following categories:
      - Sensory (e.g., hyperesthesia, allodynia); **OR**
      - Vasomotor: (e.g., temperature asymmetry, skin color changes, color asymmetry); **OR**
      - Sudomotor/edema: (e.g., edema, sweating changes, asymmetry); **OR**



- Motor/trophic: (e.g., decreased range of motion); **OR**
- Dysfunction (e.g., weakness, tremor, dystonia) or trophic changes (hair, nail, skin); **AND**
- Signs of **AT LEAST TWO** of the following categories at the time of evaluation:
  - Sensory (e.g., hyperalgesia, allodynia); **OR**
  - Vasomotor (e.g., temperature asymmetry, skin color changes, skin color asymmetry); **OR**
  - Sudomotor or edema (e.g., edema, sweating asymmetry, sweating changes); **OR**
  - Motor or trophic (e.g., decreased ROM, motor dysfunction, trophic changes); **AND**
- Failure of conservative management<sup>A</sup>, including **ALL** of the following:
  - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
  - Failed trial of at least two neuropathic medications (e.g., gabapentin, pregabalin, duloxetine, amitriptyline, nortriptyline, etc.), if not contraindicated; **AND**
  - **ANY** of the following:
    - **ALL** of the following:
      - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
      - PT/HEP tried for a duration of 6 weeks or more within the past 12 months; **OR**
    - Progression or worsening of symptoms due to PT/HEP treatment; **AND**
  - Failure of adequate relief with interventional pain procedure (e.g. sympathetic nerve block); **OR**
- Failed back surgery syndrome (FBSS), post-laminectomy syndrome with **ALL** of the following:
  - Failure of conservative management<sup>A</sup>, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**

- Failed trial of at least two neuropathic medications (e.g., gabapentin, pregabalin, duloxetine, amitriptyline, nortriptyline, etc.), if not contraindicated; **AND**
- **ANY** of the following:
  - **ALL** of the following:
    - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
    - PT/HEP tried for a duration of 6 weeks or more within the past 12 months; **OR**
  - Progression or worsening of symptoms due to PT/HEP treatment; **AND**
- Failure of adequate relief with interventional pain procedure (e.g. epidural steroid injection, facet joint procedures, etc.); **AND**
- Spine surgeon evaluation within last 12 months attesting that the patient is not a candidate for further surgical intervention; **OR**
- Painful diabetic neuropathy (PDN) in lower extremity with **ALL** of the following:
  - Failed trial of at least two neuropathic medications (e.g., gabapentin, pregabalin, duloxetine, amitriptyline, nortriptyline, etc.), if not contraindicated; **AND**
  - Documentation (within the last 6 months) from primary care physician or endocrinologist that medical management of diabetes and glucose control has been optimized; **AND**
  - Documentation of a hemoglobin A1c (HbA1c) level of 9 or less within the last 6 months.

A **permanent SCS implantation** and **ALL** of the following are **TRUE<sup>8</sup>**:

- Temporary trial of at least 3 days duration has been completed, **AND**
- Temporary trial was completed within last 12 months, **AND**
- Patient meets the criteria of the trial; **AND**
- Demonstration of at least 50% reduction in pain during the temporary SCS trial; **AND**
- Documented improvement in **ANY** of the following during the temporary SCS trial:
  - Ability to perform daily activities; **OR**
  - Quality of life; **OR**

- Functional disability scale; **OR**
- Mobility; **OR**
- Use of pain medications.

**Revision, replacement, removal of a spinal cord stimulator (SCS) or dorsal root ganglion (DRG) stimulator** is considered appropriate if **ANY** of the following is **TRUE**<sup>9-13</sup>:

- SCS/DRG battery malfunction, or depletion; **OR**
- Lead displacement or fracture; **OR**
- Infection, wound complication surrounding SCS device; **OR**
- Insufficient pain relief; **OR**
- Hardware-related pain; **OR**
- Patient intolerance; **OR**
- An MRI-compatible device is needed due to **ALL** of the following:
  - The patient currently has a non-MRI compatible device; **AND**
  - MRI is required for concerns of disorders that cannot be properly evaluated by non-MRI imaging modalities; **AND**
  - A physician must attest to the medical necessity of MRI.

### Non-Indications

A **spinal cord stimulator (SCS)** is not considered appropriate if **ANY** of the following is **TRUE**<sup>8</sup>:

- Dorsal root ganglion (DRG) stimulation for all conditions except complex regional pain syndrome (CRPS) types I and II in lower extremity<sup>14-16</sup>; **OR**
- SCS for all conditions except the indications covered in this policy (Failed back surgery syndrome/ post-laminectomy syndrome, Complex Regional Pain Syndrome, Painful Diabetic neuropathy); **OR**
- More than two trials per anatomic spinal region per patient per lifetime<sup>14</sup>; **OR**
- A repeat trial after initial trial failure, unless extenuating circumstances were present that contributed to trial failure<sup>14</sup>; **OR**
- DRG or SCS trial in a patient with an existing SCS or DRG stimulator; **OR**
- Replacement or upgrade when **ANY** of the following is **TRUE**:
  - No documented medical necessity for upgrade of functional, non-MRI compatible SCS device; **OR**
  - The SCS is functioning, but newer technology is requested (including but not limited to BurstDR, high-frequency SCS, closed-loop SCS, etc.); **OR**
  - Trials or implants performed by a non-physician.

## **Definitions and Notes**

<sup>A</sup>Failure of conservative management:

- The patient has completed a full course of conservative management without meaningful improvement.
- Patient noncompliance, closure of therapy offices, and patient inconvenience do *not* constitute a failure of conservative treatment.

## **Level of Care Criteria**

Inpatient or Outpatient

## **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                          |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 63650                 | Percutaneous implantation of neurostimulator electrode array, epidural                                                                                                           |
| 63655                 | Laminectomy for implantation of electrode array, plate/paddle, epidural                                                                                                          |
| 63663                 | Revision including replacement, when performed, of spinal neurostimulator electrode percutaneous array(s), including fluoroscopy, when performed                                 |
| 63664                 | Revision including replacement, when performed, of spinal neurostimulator electrode plate/paddle(s) placed via laminotomy or laminectomy, including fluoroscopy, when performed  |
| 63685                 | Insertion or replacement of spinal neurostimulator pulse generator or receiver, requiring pocket creation and connection between electrode array and pulse generator or receiver |
| 63688                 | Revision or removal of implanted spinal neurostimulator pulse generator or receiver, with detachable connection to electrode array                                               |
| 64555                 | Percutaneous implantation of neurostimulator electrode array; peripheral nerve (excludes sacral nerve)                                                                           |
| 64575                 | Open implantation of neurostimulator electrode                                                                                                                                   |

|       |                                                                                                         |
|-------|---------------------------------------------------------------------------------------------------------|
|       | array; peripheral nerve (excludes sacral nerve)                                                         |
| C1816 | Receiver and/or transmitter, neurostimulator (implantable)                                              |
| C1820 | Generator, neurostimulator (implantable), with rechargeable battery and charging system                 |
| C1822 | Generator, neurostimulator (implantable), high frequency, with rechargeable battery and charging system |
| L8679 | Implantable neurostimulator, pulse generator, any type                                                  |
| L8680 | Implantable neurostimulator electrode, each                                                             |
| L8682 | Implantable neurostimulator radiofrequency receiver                                                     |
| L8685 | Implantable neurostimulator pulse generator, single array, rechargeable, includes extension             |
| L8686 | Implantable neurostimulator pulse generator, single array, non-rechargeable, includes extension         |
| L8687 | Implantable neurostimulator pulse generator, dual array, rechargeable, includes extension               |
| L8688 | Implantable neurostimulator pulse generator, dual array, non-rechargeable, includes extension           |

## Medical Evidence

Petersen et al. (2023) conducted a prospective, multicenter, randomized controlled trial (RCT) to assess the effectiveness of spinal cord stimulation (SCS) at a frequency of 10 kHz in managing persistent painful diabetic neuropathy (PDN) that had not responded to conventional treatments. The trial included 216 patients with refractory PDN; researchers compared conventional medical management (CMM) alone with a combination of CMM and 10 kHz SCS. At the 6-month follow-up, patients with inadequate pain relief were given the option to begin the other treatment. The 142 patients treated with the 10 kHz SCS system were followed for 24 months. Results showed that at 24 months, the 10 kHz SCS reduced pain by an average of 79.9% compared to baseline, with 90.1% of patients experiencing at least 50% pain relief. Participants also experienced significant improvements in quality of life and sleep, with 65.7% demonstrating clinically meaningful neurological improvement. The study supports the use of 10 kHz SCS for lasting pain relief and notable improvements in quality of life, sleep, and neurological function over 24 months.<sup>[17](#)</sup>

Kapural et al. (2023) performed a prospective, multicenter, randomized, single-masked feasibility study to evaluate the safety and efficacy of a novel charge-distributed multiphase stimulation approach throughout an extended trial of SCS. The study included patients with chronic low back or leg pain (or both) who underwent a successful commercial SCS trial. Patients were randomized into 2 groups receiving different multiphase SCS therapies, with varying frequency ranges, over an 11-to-12-day period. Results showed significant reductions in pain intensity for both multiphase therapies compared to baseline. There was no significant difference in pain reduction between the two multiphase therapies. In conclusion, multiphase SCS effectively reduced pain in participants with chronic low back or leg pain, with no unexpected device-related adverse events. Future research should focus on assessing the long-term effectiveness of multiphase stimulation.<sup>[18](#)</sup>

Zuidema et al. (2023) conducted a prospective cohort RCT to assess the enduring impacts of SCS on patients with painful diabetic polyneuropathy (PDPN). The study is an 8-to-10-year follow-up of a previous trial on SCS for PDPN that focused on a subgroup of 19 patients who still used SCS treatment

after 8 years. The study notes that pain intensity during the day and night significantly decreased with SCS compared to baseline. More than 50% of patients experienced a pain reduction of more than 30%. However, there were no significant differences in secondary outcomes, such as quality of life, depression, and sleep quality. The conclusion suggests that SCS can remain an effective long-term treatment for reducing pain intensity in some patients with PDPN who still have the device implanted after 8 years.<sup>19</sup>

In a randomized clinical trial, Hara et al. (2022) investigated the efficacy of SCS. The placebo-controlled trial included 50 patients who underwent randomized 3-month periods of spinal cord burst stimulation and placebo stimulation. The study team did not find a significant difference in self-reported disability among trial participants with chronic post-lumbar spine surgery back pain.<sup>20</sup>

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# Policy Revision History/Information

| Original Date: July 1, 2023 |            |                                                                                                                                                                                                                                                                                                      |
|-----------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History              |            |                                                                                                                                                                                                                                                                                                      |
| Version 2                   | 4/30/2024  | Policy criteria reviewed and updated per medical literature.                                                                                                                                                                                                                                         |
| Version 3                   | 12/19/2024 | <ul style="list-style-type: none"> <li>• Annual review</li> <li>• References updated</li> <li>• Structure aligned to template</li> <li>• Updated Medical Evidence section</li> </ul>                                                                                                                 |
| Version 4                   | 01/15/2026 | <p>Annual review.</p> <p>Added temporary trial requirement to permanent SCS implantation indication.</p> <p>Minor changes made to the Indications section for concision and clarity.</p> <p>Updated conservative care language.</p> <p>Expanded the Medical Evidence section; added 5 citations.</p> |



# **Cohere Medical Policy – Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy)**

*Clinical Policy for Medical Necessity Review*

**Version: 4**

**Cohere Health UMC Approval Date: July 31, 2025**

Last Annual Review: July 31, 2025

Revision: Not Applicable

Next Annual Review: July 31, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy – Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy)

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy)***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the

patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Spinal decompression is used to treat conditions such as lumbar spinal stenosis, disc herniation with radiculopathy, cervical radiculopathy, or spondylolisthesis and may be accomplished through a number of procedures. Laminectomy involves surgical removal of a spinous process, lamina, portions of the facet joint (facetectomy), and ligamentum flavum to increase the spinal canal diameter and reduce stenosis.<sup>1</sup> Laminotomy (hemilaminectomy) involves the removal of a facet joint or partial lamina to allow decompression of the nerve root or dural sac.<sup>1</sup> A laminotomy is frequently performed with a lumbar discectomy for disc herniations.<sup>1</sup> A discectomy is performed to remove all or part of a herniated or damaged intervertebral disc.<sup>2</sup> Foraminotomy involves direct decompression of a nerve root by enlarging the neural foramen via removal of the lamina, facet joint, and ligamentum flavum.<sup>1</sup> Laminoplasty is performed to access and decompress the cervical spinal canal and is often used to treat spinal stenosis.<sup>3</sup> The procedure may be performed on the lumbar spine.<sup>3</sup>

## **Medical Necessity Criteria**

### **Indications**

**Spinal decompression** is considered appropriate if **ANY** of the following is **TRUE**:

- The procedure is an anterior or posterior cervical or upper thoracic decompression, and **ANY** of the following is **TRUE**:
  - The patient has cervical or upper thoracic myelopathy, and **ALL** of the following:
    - Advanced imaging with radiologic report (MRI or CT myelogram) reveals spinal cord compressive pathology (e.g., myelomalacia of cord signal change consistent with the presentation)<sup>4</sup>; **AND**
    - **ANY** of the following<sup>5-8</sup>:
      - Procedure needed for treatment of cervical or upper thoracic spine injury with myelopathy (e.g., trauma); **OR**
      - Progressive neurological deficit; **OR**
      - **ANY** of the following myelopathy symptoms:



- Gait disturbance or abnormality; **OR**
- Lower or upper extremity weakness with spasticity; **OR**
- Paresthesias or numbness in the upper extremities; **OR**
- Loss of dexterity/coordination; **OR**
- Bowel or bladder dysfunction; **OR**
- Lhermitte phenomenon; **OR**
- **ANY** of the following myelopathy physical examination findings:
  - Lhermitte's sign: an electric shock-like sensation; **OR**
  - Hoffman's sign; **OR**
  - Upper or lower motor neuron findings in the extremities (e.g., hypertonicity, hyperreflexia, multiple beats or sustained clonus, positive Babinski); **OR**
  - Decreased sensation, proprioception, or vibratory sense; **OR**
  - Loss of sphincter tone; **OR**
- The patient has cervical or upper thoracic radiculopathy, and **ALL** of the following<sup>9</sup>:
  - Advanced imaging (magnetic resonance imaging [MRI] or computed tomography [CT] myelogram) with radiology report reveals diagnostic findings of the spinal cord or nerve root compressive pathology consistent with clinical symptoms<sup>10</sup>; **AND**
  - **ANY** of the following:
    - **ANY** of the following cervical spine symptoms:
      - Neck pain; **OR**
      - Radicular arm pain, motor, or sensory changes; **OR**
      - Scapular or periscapular pain; **OR**
    - **ANY** of the following thoracic spine symptoms:
      - Thoracic pain; **OR**
      - Scapular, periscapular, or chest wall pain; **OR**
      - Radicular chest pain; **OR**
    - **ANY** of the following cervical or upper thoracic radiculopathy positive specialty tests:
      - Spurling's test or maneuver or compression test (reproduction of symptoms with neck extension, lateral flexion, and downward compression or loading); **OR**
      - Shoulder abduction test (symptoms relieved with shoulder abduction); **OR**

- Valsalva test (reproduction of pain with breathholding and bearing down, as if during a bowel movement); **OR**
- Lateral flexion test (radicular pain on lateral bending to ipsilateral side, pain often relieved with contralateral bending); **AND**
- **ANY** of the following:
  - Failure of conservative management for greater than 6 weeks, including **AT LEAST TWO** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **OR**
    - Physical therapy or a physician-directed home exercise program; **OR**
    - Corticosteroid injection if medically appropriate; **OR**
  - The patient's severe pain or disability is significantly affecting quality of life and limiting daily life (e.g., working ability, forced bed rest, ability to provide self-care); **OR**
- The procedure is lower thoracic or lumbar decompression and **ANY** of the following:
  - The patient has signs or symptoms of neurogenic claudication or radiculopathy, and **ALL** of the following<sup>1,11,31</sup>:
    - Advanced imaging (MRI or CT myelogram) with radiology report reveals neurogenic claudication or radiculopathy consistent with the condition and clinical symptoms<sup>12</sup>; **AND**
    - **ANY** of the following conditions:
      - Lower thoracic or lumbar stenosis; **OR**
      - Degenerative/isthmic spondylolisthesis; **OR**
      - Synovial facet cyst; **AND**
    - **ANY** of the following symptoms:
      - Lower extremity pain, weakness, fatigue, paresthesias, and sensory changes; **OR**
      - Gluteal and low back pain; **OR**
      - Bilateral or unilateral symptoms; **OR**
      - Symptoms present only with activity; **OR**
      - Exacerbating factors include standing, walking, and other upright exercises; **OR**

- Pain relief in a sitting or supine position or with forward flexion at the waist; **OR**
- Lower extremity pain that is made worse by walking; **AND**
- **ANY** of the following:
  - Failure of conservative management for greater than 6 weeks, including **AT LEAST TWO** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **OR**
    - Physical therapy or a physician-directed home exercise program; **OR**
    - Corticosteroid injection if medically appropriate; **OR**
  - The patient's severe pain or disability is significantly affecting quality of life and limiting daily life (e.g., working ability, forced bed rest, ability to provide self-care); **OR**
- The patient has signs or symptoms of cauda equina syndrome and **ALL** of the following<sup>1</sup>:
  - Advanced imaging (MRI or CT myelogram) with radiology report reveals acute cauda equina syndrome consistent with clinical symptoms<sup>12</sup>; **AND**
  - **ANY** of the following symptoms of cauda equina syndrome:
    - Bowel, bladder, and erectile dysfunction; **OR**
    - Diffuse motor weakness; **OR**
    - Saddle-distribution anesthesia; **OR**
    - New onset of lower extremity neurologic deficits not explained by a more proximal lesion; **OR**
- The patient requires treatment for **ANY** of the following in the lower thoracic or lumbar region<sup>1,13</sup>:
  - Tumor; **OR**
  - Fracture; **OR**
  - Infection; **OR**
  - Epidural/subdural hematoma; **OR**
- The procedure is a partial excision of posterior vertebral component (e.g., spinous process, lamina or facet) and **ANY** of the following:
  - **ALL** of the following:
    - Baastrup's disease (kissing spines); **AND**
    - Failure of conservative treatment including **ANY** of the following<sup>14-16</sup>:

- Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **OR**
  - Interspinous process steroid injection; **OR**
- Tumors in the spinous process, lamina, or facet articular processes (e.g., osteoid osteoma, osteoblastoma, aneurysmal bone cysts)<sup>13,17,18</sup>; **OR**
- Open spine wound requiring bone debridement<sup>19,20</sup>; **OR**
- Gibbus or spine deformity with impending skin breakdown<sup>21</sup>; **OR**
- Painful bursa over prominent spinous process refractory to conservative treatment including steroid injection<sup>22,23</sup>; **OR**
- The procedure is an anterior or posterior lower thoracic or lumbar discectomy, and **ANY** of the following:
  - The patient has lower thoracic or lumbar radiculopathy with lumbar disc herniation, and **ALL** of the following<sup>2,24</sup>:
    - Advanced imaging (MRI or CT myelogram) with radiology report reveals disc herniation consistent with clinical findings; **AND**
    - **ANY** of the following lower thoracic or lumbar radiculopathy symptoms:
      - Unrelenting lower extremity pain, paresthesia, weakness, or numbness in a myotomal or dermatome distribution; **OR**
      - Increased pain with coughing, sneezing or straining; **OR**
      - Low back pain; **AND**
    - **ANY** of the following physical examination findings:
      - Sensory disturbance (i.e., loss of sensation or decreased sensory response) or weakness in a dermatomal/myotomal distribution; **OR**
      - Absent or decreased lower extremity reflexes; **OR**
      - Reduced spinal mobility; **OR**
      - **ANY** of the following positive specialty tests:
        - Straight leg raise; **OR**
        - Crossed Lasègue's (or crossed straight leg raise); **OR**
        - Femoral nerve stretch; **OR**
        - Slump; **AND**
  - Failure of conservative management for greater than 6 weeks, including **AT LEAST TWO** of the following:

- Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **OR**
- Physical therapy or a physician-directed home exercise program; **OR**
- Corticosteroid injection if medically appropriate; **OR**
- The patient has signs or symptoms of cauda equina syndrome with lumbar disc herniation and **ALL** of the following<sup>2</sup>:
  - Advanced imaging (MRI or CT myelogram) with report reveals disc herniation that causes moderate to severe lower thoracic or lumbar stenosis consistent with clinical symptoms<sup>12</sup>; **AND**
  - **ANY** of the following symptoms of cauda equina syndrome:
    - Bowel, bladder, and erectile dysfunction; **OR**
    - Diffuse motor weakness; **OR**
    - Saddle-distribution anesthesia; **OR**
    - New onset of lower extremity neurologic deficits not explained by a more proximal lesion; **OR**
- The patient has an infection involving the disc space, and **ANY** of the following<sup>2</sup>:
  - An open disc biopsy and culture is needed when an organism has not been identified by less invasive means (e.g., blood cultures, percutaneous needle biopsy); **OR**
  - A disc space/spinal canal debridement is needed if **ANY** of the following is present:
    - No clinical response to antibiotics; **OR**
    - Epidural abscess with neurological deficits; **OR**
    - Signs of systemic sepsis that are associated with disc space infection.

## Non-Indications

**Spinal decompression** is not considered appropriate if **ANY** of the following are **TRUE**<sup>9</sup>:

- Any percutaneous discectomy technique, including laminectomy, laminotomy, foraminectomy, foraminotomy, foraminolaminectomy, laminoplasty, or corpectomy. Evidence is insufficient to determine that these services are standard medical treatments. There is an absence of current, widely-used treatment guidelines or acceptable clinical literature

examining benefit and long-term clinical outcomes establishing the value of these services; **OR**

- The procedure is posterior laminectomy without fusion, and the patient has kyphosis or is at-risk for postoperative kyphosis<sup>9</sup>; **OR**
- The patient has isolated, nonspecific low back pain without any accompanying symptoms<sup>1</sup>; **OR**
- Use of annular closure devices<sup>25,26</sup>; **OR**
- Automated percutaneous lumbar discectomy (APLD) (also known as automated percutaneous mechanical lumbar discectomy); **OR**
- Endoscopic disc decompression, when in combination with ablation (radiofrequency ablation) and annulus modulation/repair; **OR**
- Laser discectomy, regardless of the approach, including percutaneous laser discectomy, laser-assisted discectomy, laser disc decompression, laser-assisted disc decompression or percutaneous laser disc decompression; **OR**
- Laser laminectomy.

### **Level of Care Criteria**

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                           |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22899                 | Unlisted procedure, spine                                                                                                                                                                                                         |
| 22101                 | Partial excision of posterior vertebral component (eg, spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; thoracic                                                                            |
| 22103                 | Partial excision of posterior vertebral component (eg, spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; each additional segment (List separately in addition to code for primary procedure) |
| 62380                 | Endoscopic decompression of spinal cord, nerve root(s), including laminotomy, partial facetectomy, foraminotomy, discectomy and/or excision of                                                                                    |

|       |                                                                                                                                                                                                                              |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | herniated intervertebral disc, 1 interspace, lumbar                                                                                                                                                                          |
| 63001 | Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (eg, spinal stenosis), 1 or 2 vertebral segments; cervical                             |
| 63003 | Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (eg, spinal stenosis), 1 or 2 vertebral segments; thoracic                             |
| 63005 | Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (eg, spinal stenosis), 1 or 2 vertebral segments; lumbar, except for spondylolisthesis |
| 63011 | Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (eg, spinal stenosis), 1 or 2 vertebral segments; sacral                               |
| 63012 | Laminectomy with removal of abnormal facets and/or pars inter-articularis with decompression of cauda equina and nerve roots for spondylolisthesis, lumbar (Gill type procedure)                                             |
| 63015 | Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (eg, spinal stenosis), more than 2 vertebral segments; cervical                        |
| 63016 | Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina,                                                                                                                                        |

|       |                                                                                                                                                                                                                                                                             |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | without facetectomy, foraminotomy or discectomy (eg, spinal stenosis), more than 2 vertebral segments; thoracic                                                                                                                                                             |
| 63017 | Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (eg, spinal stenosis), more than 2 vertebral segments; lumbar                                                                         |
| 63020 | Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; 1 interspace, cervical                                                                                     |
| 63030 | Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; 1 interspace, lumbar                                                                                       |
| 63035 | Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; each additional interspace, cervical or lumbar (List separately in addition to code for primary procedure) |
| 63040 | Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc, reexploration, single interspace; cervical                                                                 |
| 63042 | Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc, reexploration, single interspace; lumbar                                                                   |



|       |                                                                                                                                                                                                                                                                                                    |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 63043 | Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc, reexploration, single interspace; each additional cervical interspace (List separately in addition to code for primary procedure) |
| 63044 | Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc, reexploration, single interspace; each additional lumbar interspace (List separately in addition to code for primary procedure)   |
| 63045 | Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, cauda equina and/or nerve root[s], [eg, spinal or lateral recess stenosis]), single vertebral segment; cervical                                                                              |
| 63046 | Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, cauda equina and/or nerve root[s], [eg, spinal or lateral recess stenosis]), single vertebral segment; thoracic                                                                              |
| 63047 | Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, cauda equina and/or nerve root[s], [eg, spinal or lateral recess stenosis]), single vertebral segment; lumbar                                                                                |
| 63048 | Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, cauda equina and/or nerve root[s], [eg, spinal or lateral recess stenosis]), single vertebral                                                                                                |

|       |                                                                                                                                                                                                                                                                                                                                 |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | segment; each additional vertebral segment, cervical, thoracic, or lumbar (List separately in addition to code for primary procedure)                                                                                                                                                                                           |
| 63050 | Laminoplasty, cervical, with decompression of the spinal cord, 2 or more vertebral segments;                                                                                                                                                                                                                                    |
| 63051 | Laminoplasty, cervical, with decompression of the spinal cord, 2 or more vertebral segments; with reconstruction of the posterior bony elements (including the application of bridging bone graft and non-segmental fixation devices [eg, wire, suture, mini-plates], when performed)                                           |
| 63052 | Laminectomy, facetectomy, or foraminotomy (unilateral or bilateral with decompression of spinal cord, cauda equina and/or nerve root[s] [eg, spinal or lateral recess stenosis]), during posterior interbody arthrodesis, lumbar; single vertebral segment (List separately in addition to code for primary procedure)          |
| 63053 | Laminectomy, facetectomy, or foraminotomy (unilateral or bilateral with decompression of spinal cord, cauda equina and/or nerve root[s] [eg, spinal or lateral recess stenosis]), during posterior interbody arthrodesis, lumbar; each additional vertebral segment (List separately in addition to code for primary procedure) |
| 63055 | Transpedicular approach with decompression of spinal cord, equina and/or nerve root(s) (e.g., herniated intervertebral disc), single segment; thoracic                                                                                                                                                                          |
| 63056 | Transpedicular approach with decompression of spinal cord, equina and/or nerve root(s) (e.g., herniated intervertebral disc), single segment;                                                                                                                                                                                   |

|       |                                                                                                                                                                                                                                                       |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | lumbar (including transfacet, or lateral extraforaminal approach) (e.g., far lateral herniated intervertebral disc)                                                                                                                                   |
| 63057 | Transpedicular approach with decompression of spinal cord, equina and/or nerve root(s) (e.g., herniated intervertebral disc), single segment; each additional segment, thoracic or lumbar (List separately in addition to code for primary procedure) |
| 63064 | Costovertebral approach with decompression of spinal cord or nerve root(s) (e.g., herniated intervertebral disc), thoracic; single segment                                                                                                            |
| 63066 | Costovertebral approach with decompression of spinal cord or nerve root(s) (e.g., herniated intervertebral disc), thoracic; each additional segment (List separately in addition to code for primary procedure)                                       |
| 63075 | Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophylectomy; cervical, single interspace                                                                                                                  |
| 63076 | Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophylectomy; cervical, each additional interspace (List separately in addition to code for primary procedure)                                             |
| 63077 | Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophylectomy; thoracic, single interspace                                                                                                                  |
| 63078 | Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophylectomy; thoracic, each additional interspace (List separately in addition to code for                                                                |

|       |                                                                                                        |
|-------|--------------------------------------------------------------------------------------------------------|
|       | primary procedure)                                                                                     |
| 63170 | Laminectomy with myelotomy (eg, Bischof or DREZ type), cervical, thoracic, or thoracolumbar            |
| 63172 | Laminectomy with drainage of intramedullary cyst/syrinx; to subarachnoid space                         |
| 63173 | Laminectomy with drainage of intramedullary cyst/syrinx; to peritoneal or pleural space                |
| 63185 | Laminectomy with rhizotomy; 1 or 2 segments                                                            |
| 63190 | Laminectomy with rhizotomy; more than 2 segments                                                       |
| 63191 | Laminectomy with section of spinal accessory nerve                                                     |
| 63197 | Laminectomy with cordotomy, with section of both spinothalamic tracts, 1 stage, thoracic               |
| 63200 | Laminectomy, with release of tethered spinal cord, lumbar                                              |
| 63250 | Laminectomy for excision or occlusion of arteriovenous malformation of spinal cord; cervical           |
| 63251 | Laminectomy for excision or occlusion of arteriovenous malformation of spinal cord; thoracic           |
| 63252 | Laminectomy for excision or occlusion of arteriovenous malformation of spinal cord; thoracolumbar      |
| 63265 | Laminectomy for excision or evacuation of intraspinal lesion other than neoplasm, extradural; cervical |
| 63266 | Laminectomy for excision or evacuation of intraspinal lesion other than neoplasm, extradural; thoracic |

|       |                                                                                                      |
|-------|------------------------------------------------------------------------------------------------------|
| 63267 | Laminectomy for excision or evacuation of intraspinal lesion other than neoplasm, extradural; lumbar |
| 63268 | Laminectomy for excision or evacuation of intraspinal lesion other than neoplasm, extradural; sacral |
| 63270 | Laminectomy for excision of intraspinal lesion other than neoplasm, intradural; cervical             |
| 63271 | Laminectomy for excision of intraspinal lesion other than neoplasm, intradural; thoracic             |
| 63272 | Laminectomy for excision of intraspinal lesion other than neoplasm, intradural; lumbar               |
| 63273 | Laminectomy for excision of intraspinal lesion other than neoplasm, intradural; sacral               |
| 63275 | Laminectomy for biopsy/excision of intraspinal neoplasm; extradural, cervical                        |
| 63276 | Laminectomy for biopsy/excision of intraspinal neoplasm; extradural, thoracic                        |
| 63277 | Laminectomy for biopsy/excision of intraspinal neoplasm; extradural, lumbar                          |
| 63278 | Laminectomy for biopsy/excision of intraspinal neoplasm; extradural, sacral                          |
| 63280 | Laminectomy for biopsy/excision of intraspinal neoplasm; intradural, extramedullary, cervical        |
| 63281 | Laminectomy for biopsy/excision of intraspinal neoplasm; intradural, extramedullary, thoracic        |
| 63282 | Laminectomy for biopsy/excision of intraspinal neoplasm; intradural, extramedullary, lumbar          |

|       |                                                                                                                                                                                                                                                                                                                                    |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 63283 | Laminectomy for biopsy/excision of intraspinal neoplasm; intradural, sacral                                                                                                                                                                                                                                                        |
| 63285 | Laminectomy for biopsy/excision of intraspinal neoplasm; intradural, intramedullary, cervical                                                                                                                                                                                                                                      |
| 63286 | Laminectomy for biopsy/excision of intraspinal neoplasm; intradural, intramedullary, thoracic                                                                                                                                                                                                                                      |
| 63287 | Laminectomy for biopsy/excision of intraspinal neoplasm; intradural, intramedullary, thoracolumbar                                                                                                                                                                                                                                 |
| 63290 | Laminectomy for biopsy/excision of intraspinal neoplasm; combined extradural-intradural lesion, any level                                                                                                                                                                                                                          |
| 63295 | Osteoplastic reconstruction of dorsal spinal elements, following primary intraspinal procedure (List separately in addition to code for primary procedure)                                                                                                                                                                         |
| 0274T | Percutaneous laminotomy/laminectomy (interlaminar approach) for decompression of neural elements, (with or without ligamentous resection, discectomy, facetectomy and/or foraminotomy), any method, under indirect image guidance (eg, fluoroscopic, CT), single or multiple levels, unilateral or bilateral; cervical or thoracic |
| 0275T | Percutaneous laminotomy/laminectomy (interlaminar approach) for decompression of neural elements, (with or without ligamentous resection, discectomy, facetectomy and/or foraminotomy), any method, under indirect image guidance (eg, fluoroscopic, CT), single or multiple levels, unilateral or bilateral; lumbar               |
| C2614 | Probe, percutaneous lumbar discectomy                                                                                                                                                                                                                                                                                              |

|       |                                                                                                                                                                                                                                                                                                                                                                       |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C9757 | Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and excision of herniated intervertebral disc, and repair of annular defect with implantation of bone anchored annular closure device, including annular defect measurement, alignment and sizing assessment, and image guidance; 1 interspace, lumbar |
| S2350 | Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophylectomy; lumbar, single interspace                                                                                                                                                                                                                                    |
| S2351 | Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophylectomy; lumbar, each additional interspace (list separately in addition to code for primary procedure)                                                                                                                                                               |

## Medical Evidence

Karlsson et al. (2024) conducted a randomized clinical trial to compare five-year outcomes after decompression alone and decompression with fusion for the treatment of lumbar spinal stenosis. The five-year Oswestry Disability Index scores were similar across treatments, and the EuroQol five-dimension questionnaire was higher for decompression alone compared to decompression with fusion. These results indicate that adding fusion to decompression surgeries may not improve patient outcomes five years post-surgery, findings consistent with those reported the two-year time point. The authors conclude that decompression alone is preferred for spinal stenosis surgery.<sup>27</sup>

Wei et al. (2021) performed a systematic review and network meta-analysis to evaluate the nine most common interventions for lumbar spinal stenosis: laminectomy, laminotomy, minimally invasive decompression, endoscopic decompression, decompression plus fusion, decompression, split-decompression, interspinous process spacer device, and non-surgery. All surgical interventions, apart from split-decompression, were more effective in relieving pain than non-surgical interventions. Laminotomy was best for improving short- and long-term dysfunction, although differences were not statistically significant, and endoscopic decompression had the lowest complication rates and shortest hospitalization time.<sup>28</sup>

In a systematic review, Lannon et al. (2021) described degenerative cervical myelopathy (DCM) as a leading cause of spinal cord injury and spinal stenosis, with incidence increasing. Early surgical referral and conservative management are recommended to prevent progressive neurologic deterioration.<sup>29</sup>

Thomé et al. (2018) conducted a randomized controlled trial of 554 patients focused on annular closure in lumbar microdiscectomy for prevention of reherniation. They concluded that annular closure with a bone-anchored implant lowered the risk of symptomatic recurrence and reoperation in patients at high-risk of herniation recurrence after lumbar microdiscectomy. The authors noted the need for additional studies to determine outcomes



beyond 2 years with a bone-anchored annular closure device, as the results of this study may not generalize to all patients undergoing lumbar discectomy.<sup>26</sup>

In a retrospective database study of 7315 patients, Drazin et al. (2017) reviewed spinal decompression and discectomy procedures in children. They noted that conditions requiring such procedures, including spinal stenosis/spondylosis and disc herniation, are much less often seen in children than in adults.<sup>30</sup> The authors also state that children with these conditions are often less responsive to conservative management strategies, including exercise, physical therapy, and pharmacological pain control, compared to adults. Mean patient age was 12.7 years for pediatric spondylolysis/spinal stenosis and 18 years for pediatric disc herniation. For patients with pediatric spondylolysis/spinal stenosis, complication rates were higher after decompression (18.1%) than after discectomy (5.3%) procedures. Length of hospital stay was also longer in pediatric spondylolysis/spinal stenosis patients treated with decompression compared to discectomy (5 vs. 1.7 days).

The American College of Radiology (ACR) Expert Panel on Neurological Imaging has published several guidelines related to myelopathic evaluation. Agarwal et al. (2021) updated the previous Myelopathy Appropriate Use Criteria, with MRI recommended as initial imaging for acute onset myelopathy and chronic or progressive myelopathy.<sup>4</sup> McDonald et al. (2018) recommend radiography, MRI or CT for initial imaging in new or increasing nontraumatic neck pain and cervical radiculopathy. In patients with a history of cervical spine surgery, radiography and noncontrast CT are primary recommendations with a disagreement on the appropriateness of MRI (contrast and noncontrast). CT myelography is rated as May Be Appropriate.<sup>10</sup> Hutchins et al. (2021) in the Low Back Pain ACR Appropriateness Criteria recommend noncontrast MRI as Usually Appropriate, and radiography and CT as May Be Appropriate in low back pain with and without radiculopathy. This applies to surgical candidates with persistence or progression of symptoms having failed six weeks of medical management. MRI, CT and CT myelography are recommended for suspected cauda equina syndrome. In osteoporosis or chronic steroid use, radiography, noncontrast MRI or CT recommended as Usually Appropriate.<sup>12</sup>

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# Policy Revision History/Information

| Original Date: September 29, 2023 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                    |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Version 2                         | 11/17/2023 | Policy criteria reviewed and updated per medical literature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Version 3                         | 04/26/2024 | Policy criteria reviewed and updated per medical literature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Version 4                         | 07/31/2025 | <p>Annual review.</p> <p>CPT Code 62287 moved to Intradiscal biacuplasty, PIRFT, IDET policy.</p> <p>CPT Codes 22101 and 22103, and criteria for partial excision of posterior vertebral component added.</p> <p>Split indications for cervical or thoracic radiculopathy into two: cervical spine symptoms and thoracic spine symptoms.</p> <p>Updated conservative care indications; patients must have at least two.</p> <p>Added indications for spinal decompression without fusion for degenerative/isthmic spondylolisthesis or synovial facet cyst (consistent with NASS).</p> <p>Added indications for spinal decompression without fusion for infection, tumor, and fracture (consistent with NASS and to ensure all CPT codes are covered [biopsy, excision, etc.]).</p> |

|  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>NASS coverage policy recommendation for Lumbar discectomy added.</p> <p>Added “with spasticity” to upper or lower extremity weakness as symptoms of myelopathy; added Lhermitte phenomenon as a symptom of myelopathy.</p> <p>Clarified and simplified indications for myelopathy physical examination findings.</p> <p>Added valsalva test and lateral flexion test as positive speciality tests for cervical or upper thoracic radiculopathy.</p> <p>Added non-indications for automated percutaneous lumbar discectomy, endoscopic disc decompression, laser discectomy, and laser laminectomy.</p> <p>Literature review – Medical Evidence updated (including references).</p> |
|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# Cohere Medical Policy – Spinal Osteotomy

Clinical Policy for Medical Necessity Review

CHP-084-2      Version 2

**Cohere UMC Approval Date:** April 21, 2026

**Last Annual Review:** April 21, 2026

**Revision Date:** Not applicable

**Next Annual Review:** April 21, 2027

**Specialty:** Musculoskeletal Care

**Population Type:** Adult (18+ years old), Pediatric (0-17 years old)



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## Procedure Codes (CPT/HCPCS)

### Service: Thoracic or Lumbar Osteotomy

| Code  | Description                                                                                                                                 |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 22206 | Osteotomy of spine, posterior or posterolateral approach, 3 columns, 1 vertebral segment (eg, pedicle/vertebral body subtraction); thoracic |
| 22207 | Osteotomy of spine, posterior or posterolateral approach, 3 columns, 1 vertebral segment (eg, pedicle/vertebral body subtraction); lumbar   |
| 22212 | Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; thoracic                                                     |
| 22214 | Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; lumbar                                                       |
| 22222 | Osteotomy of spine, including discectomy, anterior approach, single vertebral segment; thoracic                                             |
| 22224 | Osteotomy of spine, including discectomy, anterior approach, single vertebral segment; lumbar                                               |

### Service: Cervical Osteotomy

| Code  | Description                                                                                     |
|-------|-------------------------------------------------------------------------------------------------|
| 22210 | Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; cervical         |
| 22220 | Osteotomy of spine, including discectomy, anterior approach, single vertebral segment; cervical |

# Important Notices

## Notices & Disclaimers:

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## Service: Spinal Osteotomy - Description

Spinal osteotomy encompasses several invasive surgical procedures used to correct deformities of the spine, including kyphosis, scoliosis, and lordosis. Posterior column osteotomies, including Smith-Peterson or Ponte osteotomy, are utilized for patients with non-rigid or mobile deformities in the sagittal or coronal planes. Three-column osteotomy procedures include pedicle subtraction osteotomy or vertebral column resection and are performed on patients with rigid or non-mobile, complex deformities. During a spinal osteotomy, conducted under general anesthesia, ligaments, lamina, or facet joints are removed to realign the vertebra. The new position of the spine is then fixed using rods or screws.<sup>1-3</sup>

# Service: Thoracic or Lumbar Osteotomy - Medical Necessity Criteria

## Administrative Guidelines for Medical Necessity Review

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation or those that do not align with the provided clinical information—such as mismatched laterality, body part, or CPT code—may be denied due to a lack of medical necessity resulting from insufficient or inconsistent clinical information.
- When multiple diagnostic or therapeutic procedures are requested simultaneously or within the past 3 months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request.
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed.
  - How the results will impact patient management or treatment decisions.
- Duplicate exams or requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed and/or treated with a single study or procedure.

## Indications

- **Thoracic or lumbar osteotomy** is considered appropriate if **ANY** of the following is **TRUE**:
  - Posterior column osteotomy and **ALL** of the following<sup>4,5</sup>:
    - Radiographic or advanced imaging and documented radiologic report have confirmed spinal deformity; **AND**
    - **ANY** of the following:
      - Long, gradual, rounded kyphosis, defined by anterior wedging of at least 5° across three consecutive vertebrae<sup>6,7</sup>; **OR**
      - Non-rigid scoliosis requiring a correction of less than 30°<sup>8</sup>; **OR**
      - Sagittal or coronal imbalance as measured by **ANY** of the following<sup>9</sup>:
        - ▲ Sagittal vertical axis (SVA) greater than 5cm; **OR**
        - ▲ Pelvic incidence to lumbar lordosis mismatch greater than 10°; **OR**
        - ▲ C7 plumbline offset greater than 5cm; **AND**
    - Clinical documentation confirming that conservative treatment interventions are not expected to yield meaningful improvement; **AND**
    - **ANY** of the following symptoms<sup>1</sup>:
      - Decreased cardiopulmonary function<sup>11</sup>; **OR**
      - Lack of balance when sitting or standing; **OR**
      - Pain or neurological deficit; **OR**
      - Radicular leg pain or weakness; **OR**

- Three-column osteotomy and **ALL** of the following<sup>3,8,11-13</sup>:
  - Radiographic or advanced imaging and documentation in radiologic report has confirmed advanced spinal deformity; **AND**
  - **ANY** of the following:
    - Ankylosing spondylitis<sup>4,12</sup>; **OR**
    - Rigid scoliosis requiring a correction greater than 30°<sup>1</sup>; **OR**
    - Rigid sagittal plane deformity requiring a correction greater than 30°<sup>12</sup>; **OR**
    - Flatback syndrome with pelvic incidence to lumbar lordosis mismatch greater than 10°; **OR**
    - History of circumferential fusion or anterior fusion when the osteotomy is required at the level of the prior fusion<sup>13</sup>; **OR**
    - Thoracic kyphosis greater than 50°<sup>12</sup>; **AND**
  - Clinical documentation confirming that additional conservative treatment interventions are not expected to yield meaningful improvement; **AND**
  - **ANY** of the following symptoms<sup>1</sup>:
    - Decreased cardiopulmonary function<sup>10</sup>; **OR**
    - Lack of balance when sitting or standing; **OR**
    - Pain or neurological deficit; **OR**
    - Radicular leg pain or weakness.

## Non-Indications

- **Spinal osteotomy** is not considered appropriate if **ANY** of the following is **TRUE**:
  - Inadequate pelvic bone stability to adequately provide spine support in thoracic or lumbar osteotomy, in the absence of neurologic deficits<sup>12,14</sup>; **OR**
  - Osteoporosis, as defined by a dual-energy x-ray absorptiometry (DEXA) T-score of 2.5 or below, or a history of an osteoporotic fracture, in the absence of neurologic deficits<sup>14</sup>; **OR**
  - The patient has normal sagittal or coronal alignment.<sup>14</sup>

## Definition and Notes

### <sup>A</sup>Failure of conservative management:

- The patient has completed a full course of conservative management without meaningful improvement.
- Patient noncompliance, closure of therapy offices, and patient inconvenience do *not* constitute a failure of conservative treatment.

# Service: Cervical Osteotomy - Medical Necessity Criteria

## Administrative Guidelines for Medical Necessity Review

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation or those that do not align with the provided clinical information—such as mismatched laterality, body part, or CPT code—may be denied due to a lack of medical necessity resulting from insufficient or inconsistent clinical information.
- When multiple diagnostic or therapeutic procedures are requested simultaneously or within the past 3 months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request.
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed.
  - How the results will impact patient management or treatment decisions.
- Duplicate exams or requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed and/or treated with a single study or procedure.

## Indications

- **Cervical osteotomy** is considered appropriate if **ALL** of the following are **TRUE**:
  - Failure of conservative management<sup>A</sup>, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
    - **ANY** of the following:
      - **ALL** of the following:
        - ▲ Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
        - ▲ PT/HEP tried for a duration of 6 weeks or more within the past 12 months; **OR**
      - Progression or worsening of symptoms due to PT/HEP treatment; **AND**
    - **ANY** of the following conditions:
      - Rigid or fixed cervical kyphotic deformities as a result of **ANY** of the following<sup>14,15</sup>:
        - Cervical ankylosing spondylitis; **OR**
        - Chin on chest or head drop deformity; **OR**
        - Post-traumatic, post-surgical, or post-infection kyphosis; **OR**
      - Rigid or fixed kyphosis causing **ANY** of the following<sup>14,15</sup>:
        - Aspiration or respiratory compromise; **OR**
        - Dysphagia; **OR**
        - Severe pain; **OR**

- ☐ Significant functional loss; **OR**
- Sagittal imbalance, defined by **ANY** of the following:
  - ☐ C2–C7 sagittal vertical axis (SVA) greater than or equal to 40mm<sup>16</sup>; **OR**
  - ☐ Inability to maintain a neutral horizontal gaze, defined as a chin-brow vertical angle less than -10° or greater than 20°. <sup>15,16</sup>

## Non-Indications

- **Spinal osteotomy** is not considered appropriate if **ANY** of the following is **TRUE**:
  - Inadequate pelvic bone stability to adequately provide spine support in thoracic or lumbar osteotomy, in the absence of neurologic deficits<sup>12,14</sup>; **OR**
  - Osteoporosis, as defined by a dual-energy x-ray absorptiometry (DEXA) T-score of 2.5 or below, or a history of an osteoporotic fracture, in the absence of neurologic deficits<sup>14</sup>; **OR**
  - The patient has normal sagittal or coronal alignment.<sup>14</sup>

## Definition and Notes

### <sup>A</sup>Failure of conservative management:

- The patient has completed a full course of conservative management without meaningful improvement.
- Patient noncompliance, closure of therapy offices, and patient inconvenience do *not* constitute a failure of conservative treatment.



# Medical Evidence

In a 2024 systematic review, Coskun et al. evaluated clinical and radiologic outcomes of posterior column extension, pedicle subtraction, and vertebral column resection osteotomies in adult chin-to-chest deformity. Sixteen non-comparative studies, representing 288 patients, were included. Of these patients, 107 received posterior vertebral column extension osteotomy and 33 patients underwent vertebral column osteotomy. Spinal levels C7 to T1 were most commonly treated. Corrective osteotomies were determined to have positive results as the visual analog scales and neck disability indexes improved among the patients reviewed in the study.<sup>15</sup>

MacConnell et al. (2024) conducted a study of sequential correction of sagittal vertical alignment and lumbar lordosis in adult flatback deformity. Using two groups of human T10-sacrum specimens: one group with degenerative flatback and the other an iatrogenic group, individuals were subjected to simulated standing posture with a nominal sacral slope of 45°, and weighted load was added. To correct the degenerative lumbar flatback deformity, anterior lumbar interbody fusion (ALIF), lateral lumbar interbody fusion (LLIF), and posterior column osteotomy (PCO) were performed at various lumbar levels. In the iatrogenic group, flatback deformity was created with *in-situ* immobilization and eventually LLIF and PCO were performed at the higher lumbar vertebrae areas. The authors concluded that placement of ALIF cages in lower lumbar segments markedly improved degenerative flatback, and LLIF and PCO improved alignment in both degenerative and iatrogenic flatback deformities.<sup>16</sup>

Passias et al. (2022) published a retrospective cohort review (2008-2018) of adults with spinal deformity greater than or equal to 18 years of age. The three-column osteotomy was considered to have potential for spinal realignment; however, complication rates are high. Thirteen medical centers participated in the study, each with patients having undergone surgical spinal deformity correction with fusion to the pelvis. A total of 752 patients met the inclusion criteria, with 138 receiving the three-column osteotomy. Group I contained 79 patients, and Group II contained 59 patients. Eighty-five percent of patients were treated surgically with a posterior-only approach, and 15% received an anterior-posterior combination approach. The authors concluded that three-column procedures declined between 2014 and 2018, even in severe deformity cases. An increase in proximal junctional failure (PJF) prophylaxis occurred simultaneously, with a reduction in complication rates and a significant increase in positive patient outcomes.<sup>11</sup>

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# Policy Revision History/Information

| Clinical Policy Version | Date       | Review History                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version 1               | 04/10/2025 | Original Date.                                                                                                                                                                                                                                                                                                                                                    |
| Version 2               | 04/21/2026 | Annual review. Rearranged bullets for improved usability and organization. Defined sagittal or coronal imbalance and flatback syndrome in Indications. Added new cervical osteotomy section in Indications. Added "osteoporosis, as defined by a dual-energy x-ray absorptiometry (DEXA) T-score of 2.5 or below" to Non-indications section. Added 2 references. |



## **Cohere Medical Policy – Subchondroplasty**

*Clinical Guidelines for Medical Necessity Review*

**Version: 3**

**Cohere Health UMC Approval Date: July 24, 2025**

Last Annual Review: July 24, 2025

Revision: Not Applicable

Next Annual Review: July 24, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy – Subchondroplasty

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)

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# Medical Necessity Criteria

## ***Service: Subchondroplasty***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

## **Description**

Subchondroplasty is a minimally invasive fluoroscopically assisted procedure that targets and fills chronic subchondral bone defects, often called bone marrow lesions. The technique aims to reduce pain by treating bone lesions caused by knee osteoarthritis and insufficiency fractures. The procedure involves using a hard-setting bone substitute material engineered from a calcium phosphate mineral compound, injected into areas requiring structural support to the subchondral bone.<sup>1</sup> “Subchondroplasty” is a marketing tradename not recognized as standard diagnosis or generic procedure terminology.

## **Medical Necessity Criteria**

### **Indications**

**Subchondroplasty** is considered appropriate if **ANY** of the following is **TRUE**:

- This procedure is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

### **Non-Indications**

**Subchondroplasty** is not considered appropriate if **ANY/ALL** of the following is **TRUE**:

- This is not applicable, as there are no indications.

## **Level of Care Criteria**

None.

## **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                        |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0707T                 | Injection(s), bone-substitute material (e.g., calcium phosphate) into subchondral bone defect (i.e., bone marrow lesion, bone bruise, stress injury, microtrabecular fracture), including imaging guidance and arthroscopic assistance for joint visualization |



## Medical Evidence

In a recent observational study, Cohen et al. (2025) evaluated the 12-month outcomes of subchondroplasty in treating symptoms of mild-to-moderate knee osteoarthritis patients with persistent bone marrow lesions of the knee. At the end of the 12-month follow-up, 79 patients completed the study. They found statistically significant improvements in all clinical endpoints from baseline to the 12-month follow-up. In the same period, no severe adverse events were reported. They concluded that for mild-to-moderate osteoarthritic knees, subchondroplasty is a safe and efficient treatment for symptoms associated with persistent bone marrow lesions. However, they point out that randomized design clinical trials with rigorous radiological data collection will be required to recommend subchondroplasty as a standard practice.<sup>2</sup>

Di Matteo et al. (2021) performed a systematic review to study the efficacy of intraosseous injections for patients with bone marrow lesions impacted by knee osteoarthritis. Twelve studies that used various types of injections were identified. A total of 459 patients were included with one of the three types of injections: calcium phosphate, platelet-rich plasma, and bone marrow concentrate. They concluded that while injections are minimally invasive and have a low complication rate, more high-quality evidence is needed to establish support.<sup>3</sup>

Nairn et al. (2021) conducted a systematic review of the literature to characterize the clinical results of the subchondroplasty procedure and determine if patients who underwent the procedure had improvements in pain and functional outcomes. They examined 45 unique results and 17 studies and found that subchondroplasty suggests possible improvements in pain, functionality, and minimal immediate transition to total knee arthroplasty, with low complication rates. They suggest that subchondroplasty has shown promising initial results but caution that high-quality, comparative studies with long-term follow-up are needed.<sup>4</sup>

Krebs et al. (2020) conducted a small retrospective chart review and phone survey to determine the outcomes of knee arthroscopy with adjunctive subchondroplasty. These include improving self-rated visual analog scale (VAS) pain scores, conversion rate to arthroplasty, and overall satisfaction following the procedure. While the procedure demonstrated clinically significant improvements in VAS pain scores, they concluded that additional research is needed to define the indications and prognostic indicators precisely.<sup>5</sup>

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# Policy Revision History/Information

| Original Date: October 13, 2023 |            |                                                                                                                                                                                                                                                               |
|---------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                  |            |                                                                                                                                                                                                                                                               |
| Version 2                       | 04/26/2024 | Annual review.                                                                                                                                                                                                                                                |
| Version 3                       | 07/24/2025 | <p>Annual review.</p> <p>New Description section added.</p> <p>No changes in indications and non-indications.</p> <p>No changes in procedure codes.</p> <p>Literature review – Medical Evidence section updated (Nairn et al., 2021; Cohen et al., 2025).</p> |



## **Cohere Medical Policy – Thermal Ablation of the Intraosseous Basivertebral Nerve (BVN)**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 3  
**Effective Date:** December 19, 2024

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy – Thermal Ablation of the Intraosseous Basivertebral Nerve (BVN)

**Date of last literature review:** 9/22/2023

**Document last updated:** 12/19/2024

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)

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# Medical Necessity Criteria

## ***Service: Thermal Ablation of the Intraosseous Basivertebral Nerve (BVN)***

### **Recommended Clinical Approach**

Thermal ablation of the intraosseous basivertebral nerve (BVN) is a therapeutic, interventional surgical procedure used to treat chronic lower back pain of vertebrogenic origin. The procedure is performed using fluoroscopic imaging under moderate/conscious sedation or general anesthesia. Radiofrequency energy is applied for 15 minutes at 85°C to produce a lesion to destroy the BVN within the vertebral body. At a minimum, the BVN is ablated in at least 1 vertebral body.<sup>1</sup>

### **Medical Necessity Criteria**

#### **Indications**

- **Thermal ablation of the intraosseous basivertebral nerve (BVN)** is considered appropriate if **ALL** of the following are **TRUE**<sup>1-9</sup>:
- ◆ Skeletally mature patient (greater than or equal to 18 years of age); **AND**
  - ◆ Chronic lumbar back pain lasting 6 months or more in duration that causes functional deficit measured on pain or disability scale<sup>1,10</sup>; **AND**
  - ◆ Documentation of moderate to severe pain; **AND**
  - ◆ Failure of conservative management for greater than 6 months, including **ALL** of the following:
    - Anti-inflammatory medications, analgesics, or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy; **AND**
  - ◆ Magnetic resonance imaging (MRI) demonstrates Modic change in one or more vertebrae from the third lumbar (L3) to the first sacral (S1), as shown by **ANY** of the following<sup>1</sup>:
    - Inflammation, edema, vertebral endplate changes, disruption and fissuring of the endplate, vascularized



- fibrous tissues within the adjacent marrow, or hypointense signals (Type 1); **OR**
- Changes to vertebral body marrow, including replacement of normal bone marrow by fat or hyperintense signals (type 2); **AND**
- ◆ The patient has undergone careful screening, evaluation (including psychological), and diagnosis by a multidisciplinary team<sup>1</sup>; **AND**
- ◆ Frequency limitations, including **ALL** of the following<sup>1</sup>:
  - One intraosseous BVN per vertebral body (from L3 to S1) per lifetime; **AND**
  - Up to 4 vertebral bodies are treated during one procedure.

## Non-Indications

- **Thermal ablation of the intraosseous basivertebral nerve (BVN)** is not considered appropriate if **ANY** of the following is **TRUE**<sup>1-9</sup>:
- ◆ Skeletally immature patient (less than 18 years old); **OR**
  - ◆ Severe cardiac or pulmonary compromise; **OR**
  - ◆ Active systemic or local infection at the intended treatment level; **OR**
  - ◆ Bleeding diathesis; **OR**
  - ◆ Pregnancy; **OR**
  - ◆ Leg pain or numbness that occurs with walking (neurogenic claudication), severe pain that radiates from the back into the hip and outer side of the leg (lumbar radiculopathy), or radicular pain due to pinched nerve(s) (neuro compression [e.g., herniated nucleus pulposus, stenosis]), or posterior-spinal column pain as primary symptoms; **OR**
  - ◆ Primary radicular pain into the lower extremities (defined as nerve pain following dermatomal distribution that correlates with nerve compression on imaging); **OR**
  - ◆ Previous lumbar or lumbosacral spine surgery at intended treatment level (except discectomy/laminectomy if performed greater than 6 months before BVN nerve ablation and radicular pain resolved); **OR**
  - ◆ Primary symptomatic lumbar or lumbosacral spinal stenosis (defined as the presence of neurogenic claudication and confirmed by imaging); **OR**

- ◆ Diagnosed osteoporosis (T-score of -2.5 or less); **OR**
- ◆ Spine fragility fracture history; **OR**
- ◆ Trauma or compression fracture at intended treatment level; **OR**
- ◆ Spinal cancer; **OR**
- ◆ Imaging shows **ANY** of the following is **TRUE**:
  - MRI evidence of Modic changes, Type I or Type II at greater than 3 vertebral bodies; **OR**
  - Radiographic evidence that correlates with predominant physical complaints, as indicated by **ANY** of the following:
    - Lumbar or lumbosacral disc extrusion or protrusion greater than 5 mm at levels L3 to S1; **OR**
    - Lumbar or lumbosacral spondylolisthesis greater than or equal to 2 mm at any level; **OR**
    - Lumbar or lumbosacral spondylolysis at levels L3 to S1; **OR**
    - Lumbar or lumbosacral facet arthrosis or effusion correlated with facet-mediated pain at levels L3 to S1; **OR**
- ◆ Evidence from an imaging study (MRI) suggests another obvious cause for low back pain, including but not limited to **ANY** of the following:
  - Lumbar stenosis; **OR**
  - Facet arthropathy; **OR**
  - Nerve root compression; **OR**
  - Free fragment disc extrusion; **OR**
  - Disc protrusion greater than five (5) mm; **OR**
  - Disc height loss greater than 50% compared to normal levels in the same study; **OR**
  - Other obvious etiology of low back pain on imaging); **OR**
- ◆ The patient with body mass index (BMI) greater than 40; **OR**
- ◆ Advanced generalized systemic disease that limits quality-of-life improvements and there is no statement of the objective of treatment; **OR**
- ◆ Underlying mental health conditions/issues (e.g., depression, substance abuse, alcohol abuse) as a major contributor to chronic back pain; **OR**

- ◆ The patient is being treated with radiation, chemotherapy, immunosuppression, or chronic high dose steroid therapy (e.g., prednisone use up to 5 mg/day); **OR**
- ◆ The patient is taking extended-release narcotics (e.g., Fentanyl Patch, MS Contin, Oxycontin); **OR**
- ◆ Presence of generalized pain behavior (e.g., somatoform disorder) or generalized pain disorder (e.g., fibromyalgia); **OR**
- ◆ Implantable pulse generators (e.g., pacemakers, defibrillators) or other electronic implants unless specific precautions are taken to maintain patient safety.
- ◆ Non-vertebrogenic pathology that could explain the source of the patient's pain (e.g., fracture, tumor, infection, stenosis, facet mediated pain, significant deformity), as indicated by **ANY** of the following<sup>1</sup>:
  - Clinical assessment; **OR**
  - Imaging study.

#### **Level of Care Criteria**

Inpatient or outpatient

#### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                               |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 64628                 | Thermal destruction of intraosseous basivertebral nerve, including all imaging guidance; first 2 vertebral bodies, lumbar or sacral                                                                   |
| 64629                 | Thermal destruction of intraosseous basivertebral nerve, including all imaging guidance; each additional vertebral body, lumbar or sacral (List separately in addition to code for primary procedure) |

# Medical Evidence

Fischgrund et al. (2018) report on an U.S. Food and Drug Administration–approved Investigational Device Exemption randomized control trial (RCT). A total of 225 patients with chronic lower back pain (CLBP) were included with a mean age of 47 years (range 25–69). The baseline Oswestry Disability Index (ODI) was 42. Patients had either Type I or Type II Modic changes of the vertebral bodies. Preoperative evaluation took place at 2 and 6 weeks – postoperative evaluation was performed at 3, 6, and 12 months. Improvement in ODI at 3 months following surgery was noted in 75.6% of patients as compared to sham-treated controls (55.3%).<sup>3</sup>

Fischgrund et al. (2020) report on an RCT of 117 patients who had positive long-term outcomes following BVN ablation. At a 5-year follow-up, the mean ODI score decreased by 25.95 points (42.81 to 16.86). A total of 66% of patients report a reduction in pain greater than 50%; 47% report a greater than 75% reduction; and 34% report complete pain resolution.<sup>5</sup>

De Vivo et al. (2021) evaluated the effectiveness of computed tomography (CT) guided radiofrequency ablation (RFA) of the basivertebral nerve (BVN) in the treatment of 56 patients with chronic vertebrogenic lower back pain, in a prospective experimental uncontrolled trial. Pre- and post-procedure pain and disability levels were measured using the visual analog scale (VAS) and ODI. At follow-up (3 and 12 months), VAS and ODI scores decreased significantly compared to baseline. Clinical success was reached in 96.5% of patients with pain and disability. CT-assisted targeting of the ablation zone was successful in all patients. No immediate or delayed complications were detected.<sup>14</sup>

## National and Professional Organizations

The American Society of Pain and Neuroscience (ASPN) published *Best Practice Guidelines on the Diagnosis and Treatment of Vertebrogenic Pain with Basivertebral Nerve Ablation*. Research supports the use of ablation for improvement in pain and function in some patients.<sup>11</sup>

The International Society for the Advancement of Spine Surgery (ISASS) recommends BVN ablation for the treatment of chronic low back pain based on clinical research and MRI results. This includes two RCTs that indicate a significant improvement in pain and function for at least 24 months. Ablation reduces the need for opioids and provides an option for patients who are not responsive to non-surgical treatment.<sup>10</sup>

The ISASS also published the *ISASS Policy Statement 2022: Literature Review of Intraosseous Basivertebral Nerve Ablation*. The statement notes the addition of two Current Procedural Terminology (CPT) category I codes – 64628 and 64629 – for basivertebral nerve ablation based on the need to specify various types of low back pain.<sup>12</sup>

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# Clinical Guideline Revision History/Information

|                                   |            |                                                                                                                                                                                                                             |
|-----------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Original Date: September 22, 2023 |            |                                                                                                                                                                                                                             |
| Review History                    |            |                                                                                                                                                                                                                             |
| Version 2                         | 7/30/2024  | Updated the conservative care section within the indications section.                                                                                                                                                       |
| Version 3                         | 12/19/2024 | <ul style="list-style-type: none"><li>• Annual review</li><li>• Updated indications/non-indications</li><li>• Updated medical evidence</li><li>• Updated references</li><li>• Verified CPT codes and descriptions</li></ul> |





# **Cohere Medical Policy – Thoracolumbar Spinal Fusion With or Without Pelvic Fixation**

*Clinical Policy for Medical Necessity Review*

**Version: 4**

**Policy Number:** CHP-295-4

**Cohere Health UMC Approval Date:** January 15, 2026

Last Annual Review: January 15, 2026

Revision: Not Applicable

Next Annual Review: January 15, 2027

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Thoracolumbar Spinal Fusion with or without Pelvic Fixation

**Policy Number:** CHP-295-4

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Thoracolumbar Spinal Fusion With or Without Pelvic Fixation***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past 3 months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Duplicate exams or requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed and/or treated with a single study or procedure.

## **Description**

Lumbar or thoracic spinal fusion (arthrodesis) is performed via an anterior, posterior, and/or posterolateral approach. An incision is made to access the affected region of the back, whether the lower (lumbar) spine or the middle (thoracic) spine. Metal rods, screws, or plates are installed to facilitate fusion of two or more segments of the spine by physically holding the spine in a certain fixed position. As part of the surgery, the lamina bone may be partially or completely removed, and impinging osteophytes or abnormal disc material may also be excised. Interbody fusion cages or grafts may be used for this purpose. Spinal fusion may provide more rapid relief than non-surgical treatment options and can prevent further spinal cord dysfunction and neurological deficits, particularly in moderate or severe cases. In fusion procedures, bones are encouraged to grow together by installing osteopromotive materials, and/or bone grafts. Instrumentation stabilizes the fusion to prevent motion and encourage fusion<sup>1,2</sup>

## **Medical Necessity Criteria**

### **Indications**

A **thoracolumbar spinal fusion with or without pelvic fixation** is considered appropriate if **ALL** of the following are **TRUE**:

- **ANY** of the following regarding nicotine use<sup>3,4</sup>:
  - Current nicotine user with no product use for 6 weeks, and **ANY** of the following:
    - Negative urine (cotinine) lab test within 30 days; **OR**
    - Surgery is urgently required due to a documented reason; **OR**
  - No history of nicotine product use within the last 12 months; **OR**
  - No lifetime history of nicotine product use; **AND**
- **ANY** of the following:
  - The procedure is lumbar fusion with or without decompression with **ALL** of the following:
    - Failure of conservative management<sup>5</sup>, including **ALL** of the following:
      - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**

- **ANY** of the following:
  - **ALL** of the following:
    - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
    - PT/HEP trialed for a duration of 6 weeks or more within the past 6 months; **OR**
  - Progression or worsening of symptoms due to PT/HEP treatment; **AND**
- **ANY** of the following:
  - Corticosteroid injection if medically appropriate<sup>5</sup>; **OR**
  - Documentation that corticosteroid injection is contraindicated; **OR**
  - Facet injections; **OR**
  - Interlaminar epidural steroid injection (ILES); **OR**
  - Medial branch blocks (MBB); **OR**
  - Transforaminal epidural steroid injection (TFESI); **AND**
- Radiographic evidence with radiologic report that demonstrates **ANY** of the following:
  - Kyphosis or scoliosis greater than 40°<sup>6</sup>; **OR**
  - Instability or iatrogenic instability caused by the decompression at all levels planned to be fused, with **ANY** of the following<sup>7</sup>:
    - Cauda equina syndrome suspected, with **ALL** of the following:
      - Magnetic resonance imaging (MRI) with radiologic report that demonstrates compressive pathology; **AND**
      - **ANY** of the following symptoms:
        - Bowel, bladder, and erectile dysfunction; **OR**
        - Diffuse motor weakness; **OR**
        - Saddle-distribution anesthesia; **OR**
    - Deformity (e.g., scoliosis in the lumbar spine, thoracolumbar deformity) with **ANY** of the following<sup>1</sup>:
      - Radiographs with radiologic report that demonstrates **ANY** of the following:
        - Sagittal or coronal imbalance of at least 5 cm is present; **OR**

- Progression of the deformity is at least 10° as measured on consecutive radiographs during a one-year period; **OR**
  - Coronal plane has a fixed curve greater than 30°; **OR**
  - Lateral listhesis of 10% or greater; **OR**
  - Proximal junctional kyphosis<sup>B</sup>; **OR**
- Instability due to **ANY** of the following:
  - Congenital deformities; **OR**
  - Erosive conditions; **OR**
  - Fractures; **OR**
  - Iatrogenic causes, including expected instability as a consequence of another medically necessary spine procedure; **OR**
  - Infection; **OR**
  - Space-occupying lesions; **OR**
  - Trauma; **OR**
  - Tumor; **OR**
- Pseudarthrosis with **ANY** of the following<sup>1</sup>:
  - **ALL** of the following:
    - Failure of conservative management<sup>A</sup>, including **ALL** of the following:
      - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
      - **ANY** of the following:
        - **ALL** of the following:
          - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
          - PT/HEP trialed for a duration of 6 weeks or more within the past 6 months; **OR**
        - Progression or worsening of symptoms due to PT/HEP treatment; **AND**

- **ANY** of the following:
  - Corticosteroid injection if medically appropriate<sup>5</sup>;  
**OR**
  - Documentation that corticosteroid injection is contraindicated; **AND**
  - Mechanical low back pain that is approximately at the level of the pseudarthrosis, qualified as pain that can be somewhat positionally abated; **AND**
  - A period of time following the index surgery during which the patient had symptomatic relief; **AND**
  - Presence of symptoms for at least 6 months; **OR**
- Computed tomography (CT) or plain radiographs with radiologic report that demonstrates a nonunion at a lumbar segment at which a fusion had been previously attempted, and **ALL** of the following:
  - Dynamic motion noted on flexion-extension radiographs; **AND**
  - Lack of bridging bone; **OR**
- Presence of a gross failure of the instrumentation (e.g., pedicle screw breakage, screw loosening, curve/correction decompensation); **OR**
- Radiculopathy with **ALL** of the following<sup>1</sup>:
  - Axial pain is the primary complaint, with or without lower extremity pain as a secondary complaint<sup>1</sup>; **AND**
  - Failure of conservative management<sup>A</sup>, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
    - **ANY** of the following:
      - **ALL** of the following:
        - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**



- PT/HEP trialed for a duration of 6 weeks or more within the past 6 months; **OR**
  - Progression or worsening of symptoms due to PT/HEP treatment; **AND**
- **ANY** of the following:
  - Corticosteroid injection if medically appropriate<sup>5</sup>; **OR**
  - Documentation that corticosteroid injection is contraindicated; **AND**
- MRI or plain radiographs with radiologic report that demonstrates advanced single-level disease of the lumbar spine with moderate to severe degeneration of the disc with Modic changes as compared to other normal or mildly degenerative levels (as demonstrated by plain radiographs) and mild or no degeneration (as shown on MRI)<sup>1</sup>; **AND**
- No unmanaged psychiatric disorder(s) that can lead to symptom magnification (e.g., anxiety disorder), that have been uncontrolled<sup>1</sup>; **AND**
- **ANY** of the following symptoms:
  - Low back pain; **OR**
  - Lower extremity pain, paresthesia, weakness, or numbness in a myotomal or dermatome distribution<sup>8</sup>; **OR**
  - Radicular pain with coughing, sneezing, or straining; **AND**
- **ANY** of the following physical examination findings<sup>7-9</sup>:
  - Absent or decreased lower extremity reflex; **OR**
  - Reduced spinal mobility; **OR**
  - Sensory disturbance (e.g., loss of sensation or decreased sensory response) or weakness in a dermatomal or myotomal distribution; **OR**
  - **ANY** of the following positive specialty tests (unless medically contraindicated):
    - Crossed Lasègue's (or crossed straight leg raise); **OR**
    - Femoral nerve stretch; **OR**
    - Slump; **OR**
    - Straight leg raise; **OR**

- Stenosis with **ALL** of the following:
  - **ANY** of the following:
    - Decompression is expected to result in **ANY** of the following:
      - Iatrogenic instability (e.g., foraminal stenosis) during which greater than 50 percent of the facet joint will be removed to adequately decompress the exiting nerve root; **OR**
      - Disc space distraction is intended (e.g., interbody fusion) to achieve indirect central or foraminal decompression in lieu of direct decompression via aggressive resection of the facet joints and lamina<sup>1</sup>; **AND**
    - Flexion-extension radiographs with radiologic report that demonstrates dynamic instability or comparison of a supine and upright image that demonstrates a difference in translational alignment between vertebrae greater than 3 mm between views<sup>1</sup>; **OR**
    - Spondylolisthesis (isthmic or degenerative)<sup>1</sup>; **AND**
  - **ANY** of the following symptoms or physical examination findings<sup>7-9</sup>:
    - Bilateral or unilateral pain **OR**
    - Decreased or absent lower extremity reflexes; **OR**
    - Exacerbating factors (include e.g., standing, walking, and other upright exercises); **OR**
    - Focal motor weakness or sensory deficit; **OR**
    - Gluteal and low back pain; **OR**
    - Lower extremity pain, weakness, fatigue, paresthesias, or sensory changes; **OR**
    - Lower extremity pain that is made worse by walking; **OR**
    - Pain that is relieved in a sitting or supine position or with forward flexion at the waist; **OR**
    - Positive Romberg's test; **OR**
    - Positive straight leg raise (SLR); **OR**
    - Wide-based gait; **AND**

- MRI with radiologic report that demonstrates compressive pathology and **ANY** of the following:
  - Progressive neurological motor deficits<sup>10</sup>; **OR**
  - Severe pain or disability affecting their quality of life and limiting their daily life (including working and inability to provide self-care)<sup>11</sup>; **OR**
  - Unstable fracture noted on imaging with neuro deficit or myelopathy with **ANY** of the following:
    - Burst fracture with neuro deficit; **OR**
    - Chance fracture; **OR**
    - Fracture-dislocation; **OR**
- Synovial facet cysts as an adjunct to cyst excision<sup>1</sup>; **OR**
- Trauma (e.g., fractures, fracture-dislocations, dislocations, or traumatic ligamentous disruption) with **ANY** of the following<sup>1</sup>:
  - Bracing is not appropriate due to the patient's medical status (e.g., injuries, comorbidities); **OR**
  - Failure of conservative management<sup>A</sup>, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
    - **ANY** of the following:
      - **ALL** of the following:
        - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
        - PT/HEP trialed for a duration of 6 weeks or more within the past 6 months); **OR**
      - Progression or worsening of symptoms due to PT/HEP treatment; **AND**
    - **ANY** of the following:
      - Corticosteroid injection if medically appropriate<sup>5</sup>; **OR**
      - Documentation that corticosteroid injection is contraindicated; **OR**

- Functional limitation(s) (e.g., severe back pain, difficulty ambulating, inability to perform activities of daily living [ADLs]); **OR**
  - Instability is expected from decompression of the spinal canal; **OR**
  - Instability is present; **OR**
  - Thoracolumbar injury classification and severity (TLICS) score greater than or equal to 5<sup>12</sup>; **OR**
- The procedure is thoracic spinal fusion with or without decompression with **ALL** of the following:
  - Failure of conservative management<sup>A</sup>, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
    - **ANY** of the following:
      - **ALL** of the following:
        - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
        - PT/HEP trialed for a duration of 6 weeks or more within the past 6 months; **OR**
      - Progression or worsening of symptoms due to PT/HEP treatment; **AND**
    - **ANY** of the following:
      - Facet injections; **OR**
      - Medial branch blocks (MBB); **AND**
  - **ANY** of the following:
    - Deformity (e.g., scoliosis, kyphosis, congenital)<sup>13</sup>; **OR**
    - Degenerative conditions (e.g., spinal stenosis, degenerative disc disease, spondylolisthesis, degenerative scoliosis/kyphosis, thoracic myelopathy, osteoporosis)<sup>14,15</sup>; **OR**
    - Herniated disc<sup>16</sup>; **OR**
    - Idiopathic scoliosis (greater than 45–50°)<sup>15</sup>; **OR**
    - Infection<sup>13</sup>; **OR**
    - Instability<sup>15</sup>; **OR**

- Persistent pain<sup>17</sup>; **OR**
- Radiographic evidence with radiologic report that demonstrates **ANY** of the following:
  - Lumbar curve greater than 40° requiring extension into the thoracic spine<sup>6</sup>; **OR**
  - MRI, CT, or CT myelogram with radiologic report that demonstrates neurological findings (e.g., paralysis)<sup>18</sup>; **OR**
  - Pelvic incidence - lumbar lordosis (PI-LL) mismatch greater than 10°; **OR**
  - Positive sagittal balance or sagittal vertebral axis (SVA) greater than 5 cm; **OR**
- Spondylodiscitis<sup>16</sup>; **OR**
- Thoracic spinal stenosis<sup>16</sup>; **OR**
- Trauma/injury/fracture<sup>13,19</sup>; **OR**
- Tumor<sup>13</sup>; **OR**
- Junctional fusion for adjacent segment disease (e.g., stenosis, kyphosis, listhesis) with **ANY** of the following<sup>20</sup>:
  - Adjacent cervical fusion; **OR**
  - Adjacent lumbar fusion; **OR**
  - Adjacent thoracic fusion; **OR**
- Pediatric patient with **ALL** of the following:
  - Failure of conservative management<sup>A</sup>, including **ALL** of the following:
    - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
    - **ANY** of the following:
      - **ALL** of the following:
        - Physical therapy (PT) and/or documentation of patient compliance with a home exercise prescription/plan (HEP) provided by a physician or physical therapist targeting the requested region; **AND**
        - PT/HEP trialed for a duration of 3 months or more within the past 6 months; **OR**
      - Progression or worsening of symptoms due to PT/HEP treatment; **AND**

- **ANY** of the following:
  - Corticosteroid injection if medically appropriate<sup>5</sup>; **OR**
  - Documentation that corticosteroid injection is contraindicated;
- AND**
- **ANY** of the following:
  - Degenerative disc disease; **OR**
  - Infection; **OR**
  - Kyphosis (curve greater than or equal to 75°)<sup>21</sup>; **OR**
  - Rapidly progressing curves; **OR**
  - Scoliosis with a curve greater than or equal to 45° (severe); **OR**
  - Idiopathic scoliosis in a skeletally immature patient with a curve greater than 40°<sup>21</sup>; **OR**
  - Severe spinal stenosis; **OR**
  - Spinal fracture; **OR**
  - Spinal instability; **OR**
  - Spondylolisthesis<sup>21</sup>; **OR**
  - Tumor; **OR**
- Pelvic fixation (e.g., attachment of caudal end of instrumentation to pelvic bony structures other than sacrum) for **ANY** of the following<sup>22,23</sup>:
  - Correction of lumbar deformity or pelvic obliquity; **OR**
  - High-grade spondylolisthesis (grade III or higher according to the Meyerding classification system); **OR**
  - Long arthrodesis involving three or more vertebral levels; **OR**
  - Lumbosacral arthrodesis in the setting of osteoporosis; **OR**
  - Sacral fractures with spinopelvic dissociation; **OR**
  - Three-column osteotomies in the lower thoracic or lumbar spine; **OR**
  - Tumor that requires bone removal from the lumbar vertebrae or sacrum; **OR**
- Revision or repeat spinal fusion with **ALL** of the following:
  - When at least 12 months have elapsed since the original surgery;
  - AND**
  - Imaging studies confirm the absence of healing in the preceding 3 months, unless failure has occurred (e.g., pseudoarthrosis).

## Non-Indications

A **thoracolumbar spinal fusion with or without pelvic fixation** is not considered appropriate if **ANY** of the following is **TRUE**:

- Asymptomatic myelopathy<sup>18</sup>; **OR**
- Current laboratory-confirmed nicotine use (unless surgery is urgently required for progressive neurologic deficit)<sup>1</sup>; **OR**
- In disc herniations below L2, adjunct to primary excision of a central or posterolateral disc herniation at any level in the absence of instability or spondylolisthesis<sup>1</sup>; **OR**
- Discogenic low back pain that does not meet the criteria listed in the Indications section above<sup>1</sup>; **OR**
- Isolated chronic axial thoracic pain<sup>18</sup>; **OR**
- In lumbar stenosis, when greater than 50% bilateral facet resection is not required to achieve neurologic decompression.<sup>1</sup>

## Definitions

### **<sup>A</sup>Failure of conservative management:**

- The patient has completed a full course of conservative management without meaningful improvement.
- Patient noncompliance, closure of therapy offices, and patient inconvenience do *not* constitute a failure of conservative treatment.

**<sup>B</sup>Proximal junctional kyphosis:** segmental Cobb angle of at least 10° or 10° of progression from the immediate postoperative images).<sup>1</sup>

## Level of Care Criteria

Inpatient or Outpatient

### Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                                   |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20999          | Unlisted procedure, musculoskeletal system, general                                                                                                                                                                                                |
| 22532          | Arthrodesis, lateral extra cavitory technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic                                                                                                         |
| 22533          | Arthrodesis, lateral extracavitory technique, including minimal discectomy to prepare interspace (other than for decompression); lumbar                                                                                                            |
| 22534          | Arthrodesis, lateral extracavitory technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic or lumbar, each additional vertebral segment (List separately in addition to code for primary procedure) |
| 22556          | Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic                                                                                                             |
| 22558          | Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); lumbar                                                                                                               |
| 22585          | Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); each additional interspace (List separately in addition to code for primary procedure)                               |
| 22586          | Arthrodesis, pre-sacral interbody technique, including disc space preparation, discectomy, with posterior instrumentation, with image guidance, includes bone graft when performed, L5-S1 interspace                                               |



|       |                                                                                                                                                                                                                                                                                                                           |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22610 | Arthrodesis, posterior or posterolateral technique, single interspace; thoracic (with lateral transverse technique, when performed)                                                                                                                                                                                       |
| 22612 | Arthrodesis, posterior or posterolateral technique, single interspace; lumbar (with lateral transverse technique, when performed)                                                                                                                                                                                         |
| 22614 | Arthrodesis, posterior or posterolateral technique, single interspace; each additional interspace (List separately in addition to code for primary procedure)                                                                                                                                                             |
| 22630 | Arthrodesis, posterior interbody technique, including laminectomy and/or discectomy to prepare interspace (other than for decompression), single interspace, lumbar                                                                                                                                                       |
| 22632 | Arthrodesis, posterior interbody technique, including laminectomy and/or discectomy to prepare interspace (other than for decompression), single interspace, lumbar; each additional interspace (List separately in addition to code for primary procedure)                                                               |
| 22633 | Arthrodesis, combined posterior or posterolateral technique with posterior interbody technique including laminectomy and/or discectomy sufficient to prepare interspace (other than for decompression), single interspace, lumbar                                                                                         |
| 22634 | Arthrodesis, combined posterior or posterolateral technique with posterior interbody technique including laminectomy and/or discectomy sufficient to prepare interspace (other than for decompression), single interspace, lumbar; each additional interspace (List separately in addition to code for primary procedure) |

|       |                                                                                                                                                                                                                                                                       |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22800 | Arthrodesis, posterior, for spinal deformity, with or without cast; up to 6 vertebral segments                                                                                                                                                                        |
| 22802 | Arthrodesis, posterior, for spinal deformity, with or without cast; 7 to 12 vertebral segments                                                                                                                                                                        |
| 22804 | Arthrodesis, posterior, for spinal deformity, with or without cast; 13 or more vertebral segments                                                                                                                                                                     |
| 22808 | Arthrodesis, anterior, for spinal deformity, with or without cast; 2 to 3 vertebral segments                                                                                                                                                                          |
| 22810 | Arthrodesis, anterior, for spinal deformity, with or without cast; 4 to 7 vertebral segments                                                                                                                                                                          |
| 22812 | Arthrodesis, anterior, for spinal deformity, with or without cast; 8 or more vertebral segments                                                                                                                                                                       |
| 22830 | Exploration of spinal fusion                                                                                                                                                                                                                                          |
| 22840 | Posterior non-segmental instrumentation (e.g., Harrington rod technique, pedicle fixation across 1 interspace, atlantoaxial transarticular screw fixation, sublaminar wiring at C1, facet screw fixation) (List separately in addition to code for primary procedure) |
| 22841 | Internal spinal fixation by wiring of spinous processes (List separately in addition to code for primary procedure)                                                                                                                                                   |
| 22842 | Posterior segmental instrumentation (e.g., pedicle fixation, dual rods with multiple hooks and sublaminar wires); 3 to 6 vertebral segments (List separately in addition to code for primary procedure)                                                               |
| 22843 | Posterior segmental instrumentation (e.g., pedicle fixation, dual rods with multiple hooks and                                                                                                                                                                        |

|       |                                                                                                                                                                                                                                                                                                                                    |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | sublaminar wires); 7 to 12 vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                                                                                          |
| 22844 | Posterior segmental instrumentation (e.g., pedicle fixation, dual rods with multiple hooks and sublaminar wires); 13 or more vertebral segments (List separately in addition to code for primary procedure)                                                                                                                        |
| 22845 | Anterior instrumentation; 2 to 3 vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                                                                                    |
| 22846 | Anterior instrumentation; 4 to 7 vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                                                                                    |
| 22847 | Anterior instrumentation; 8 or more vertebral segments (List separately in addition to code for primary procedure)                                                                                                                                                                                                                 |
| 22848 | Pelvic fixation (attachment of caudal end of instrumentation to pelvic bony structures) other than sacrum (List separately in addition to code for primary procedure)                                                                                                                                                              |
| 22849 | Reinsertion of spinal fixation device                                                                                                                                                                                                                                                                                              |
| 22853 | Insertion of interbody biomechanical device(s) (e.g., synthetic cage, mesh) with integral anterior instrumentation for device anchoring (eg, screws, flanges), when performed, to intervertebral disc space in conjunction with interbody arthrodesis, each interspace (List separately in addition to code for primary procedure) |

|       |                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22854 | Insertion of intervertebral biomechanical device(s) (e.g., synthetic cage, mesh) with integral anterior instrumentation for device anchoring (e.g., screws, flanges), when performed, to vertebral corpectomy(ies) (vertebral body resection, partial or complete) defect, in conjunction with interbody arthrodesis, each contiguous defect (List separately in addition to code for primary procedure) |
| 22859 | Insertion of intervertebral biomechanical device(s) (e.g., synthetic cage, mesh, methylmethacrylate) to intervertebral disc space or vertebral body defect without interbody arthrodesis, each contiguous defect (List separately in addition to code for primary procedure)                                                                                                                             |
| 22899 | Unlisted procedure, spine                                                                                                                                                                                                                                                                                                                                                                                |

# Medical Evidence

Anand et al. (2023) conducted a retrospective literature review to evaluate the clinical impact of selective fusion of the thoracolumbar spine on adults with significant “double curve” deformities (i.e., presence of both a lumbar and thoracic curve). This review was performed on 438 patients who underwent minimally invasive fusion between 2007 and 2020. Although neither curve was definitively corrected – as is the traditional dogma – clinical improvements were observed alongside significant correction of the unfixed thoracic spine. The authors observed significant improvements in pain scores and disability metrics, and recorded no instances of hardware failure such as rod breakage or screw loosening. They concluded that the clinical benefit of selective fusion in “double curve” patients contradicted the previous thought pattern that both curves must be definitively fused.<sup>[24](#)</sup>

Evaniew et al. (2022) performed a retrospective observational study to evaluate the effects of lumbar fusion surgery in patients with various back conditions. A total of 84 patients were evaluated at 11 centers from 2015 to 2019. In this study, the primary outcome was the level of improvement in back pain at the 12-month follow-up mark. Secondary outcomes measured included satisfaction, disability, health-related quality of life, and rates of adverse events. The authors of this study observed a statistically significant improvement in back pain at 12 months, with 81% of patients reporting satisfaction with their surgery. Patients also experienced significant improvements in disability and health-related quality of life.<sup>[25](#)</sup>

Kreiner et al. (2020) published a systematic review of guidelines for the diagnosis and treatment of low back pain. Insufficient evidence was found to recommend for or against a particular fusion technique for the treatment of low back pain. No literature evidence was found to adequately address differences in clinical outcomes or functional status for single-level vs. multilevel fusions. No studies were found to address the effectiveness of fusion over discectomy, discectomy with rhizotomy, or decompression alone.<sup>[26](#)</sup>

Reid et al. (2019) completed a literature review regarding the current state of lumbar fusion indications and techniques for degenerative spine disease. The group states that few randomized trials exist that studied lumbar fusion for degenerative disease. Lumbar instrumentation technologies in the treatment of degenerative diseases are discussed, including issues associated with Harrington rod implantation, such as sagittal imbalance and flatback syndrome. The development of pedicle screw fixation is stated to significantly improve successful fusion rates.<sup>[27](#)</sup>

Jain et al. (2015) published an overview of the indications for pelvic fixation in adults and children. The authors described the role pelvic fixation plays in the definitive correction of congenital anomalies of the lumbar spine, lumbosacral fractures, and severe spondylolisthesis with the aim of facilitating long-term functional improvements and overall quality of life.<sup>[28](#)</sup>

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# Policy Revision History/Information

| Original Date: September 29, 2023 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                    |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Version 2                         | 07/25/2024 | Updated language regarding conservative treatment and nicotine use.                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Version 2A                        | 09/20/2024 | Added CPT code 22840.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Version 3                         | 12/19/2024 | Annual review.<br><br>Added thoracic criteria.<br><br>Updated conservative care and nicotine use sections.<br><br>Literature review - additions made.                                                                                                                                                                                                                                                                                                                                                    |
| Version 4                         | 01/15/2026 | Annual review.<br><br>Updated standard language for nicotine use, failure of conservative management, and imaging.<br><br>Added indications for instability; lumbar fusion - synovial facet cysts as an adjunct to cyst excision, trauma, and pseudarthrosis; thoracic spinal fusion with or without decompression (deformity, degenerative disease, herniated disc, idiopathic scoliosis, infection, instability, persistent pain, and radiographic evidence); pediatric patients; and pelvic fixation. |

|  |  |                                                                                                                                                                                                                                                                                                                              |
|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>Updated indications for stenosis and radiculopathy (for lumbar fusion).</p> <p>Added non-indications for asymptomatic myelopathy and isolated chronic axial thoracic pain.</p> <p>Updated non-indication for disc herniations, added “below L2.”</p> <p>Expanded the Medical Evidence section; added three citations.</p> |
|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## **Cohere Medical Policy – Total Disc Arthroplasty**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 3  
**Effective Date:** December 19, 2024

# Important Notices

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## Guideline Information:

**Specialty Area:** Diseases & Disorders of the Musculoskeletal System (M00-M99)

**Guideline Name:** Cohere Medical Policy - Total Disc Arthroplasty

**Date of last literature review:** 11/4/2024

**Document last updated:** 12/19/2024

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Total Disc Arthroplasty***

### **Recommended Clinical Approach**

Developed as an alternative to spinal fusion surgery, spinal disc arthroplasty has emerged to treat degenerative disease. The risk of nerve root compression and adjacent disc disease is reduced with this procedure. Patients report improved movement and flexibility compared with fusion procedures.<sup>1-2</sup>

Anterior cervical discectomy and fusion (ACDF) has been the standard of care for cervical radiculopathy and myelopathy that is refractory to conservative management. However, a fusion of mobile segments into non-mobile spinal units can result in biomechanical strain and degeneration. To preserve natural mobility at diseased cervical discs, cervical total disc arthroplasty (TDA) has emerged, which retains the benefits of more traditional procedures, such as disc height restoration and direct neural decompression, while improving the range of motion at the functional spinal unit and preserving near normal spinal kinematics.<sup>3</sup>

Multidisciplinary rehabilitation and pain medication are the initial treatment methods for symptomatic lumbar degenerative disc disease (DDD), associated with the degeneration of intervertebral discs and low back pain. Although spinal fusion is considered the gold standard in the treatment of lumbar DDD, the procedure is associated with spinal instability and the degeneration of adjacent vertebrae. Total disc arthroplasty has emerged with the aim of restoring and maintaining spine biomechanics.<sup>4</sup>



## Medical Necessity Criteria

### Indications

→ A **total disc arthroplasty** is considered appropriate if **ANY** of the following is **TRUE**:

- ◆ The procedure is a **cervical total disc arthroplasty**, and **ALL** of the following are **TRUE**<sup>5</sup>:
  - **ANY** of the following symptoms:
    - Intractable radiculopathy (arm pain and/or neurological deficit) with or without neck pain; **OR**
    - Myelopathy due to cord compression or neural compression localized to the disc space; **OR**
    - Progressive functional neurological deficit (e.g., motor weakness, sensory deficit); **OR**
    - Severe or rapidly progressive symptoms of nerve root or spinal cord compression requiring hospitalization or immediate surgical intervention; **AND**
  - Advanced imaging (magnetic resonance imaging [MRI] or computed tomography [CT]) or radiographic studies reveal **ANY** of the following with evidence of corresponding nerve root or cord compression<sup>6</sup>:
    - Herniated nucleus pulposus (herniated disc); **OR**
    - Spondylosis (defined by the presence of osteophytes); **OR**
    - Visible loss of disc height compared to adjacent levels; **AND**
  - Third to seventh cervical spinal levels (C3-C7); **AND**
  - No more than 2 adjacent levels; **AND**
  - Implantation is performed by an anterior approach; **AND**
  - Documented skeletal maturity (the patient's age is greater than 18 years); **AND**
  - **ANY** of the following:
    - Failure of conservative management for greater than 6 weeks, including **ALL** of the following:
      - ◆ Anti-inflammatory medications, analgesics, or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **AND**

- ◆ Physical therapy; **AND**
- ◆ Epidural steroid injections (ESI):
  - If medically appropriate; **OR**
  - Corticosteroid injection is contraindicated; **OR**
- The patient's severe pain or disability is affecting their quality of life and limiting their daily life (including working and ability to provide self-care); **OR**
- The patient has documented neurologic deficit, progressive neurologic deficit or history, signs/symptoms/physical exam consistent with myelopathy; **OR**
- ◆ The procedure is a **lumbar total disc arthroplasty**, and **ALL** of the following are **TRUE**<sup>7-8</sup>:
  - The patient has symptomatic degenerative disc disease (DDD) with unremitting lower back pain and functional impairment; **AND**
  - Advanced imaging (MRI or CT) or radiographic studies reveal no more than grade I spondylolisthesis at the involved level (1% to 25% disc slippage); **AND**
  - Fourth to fifth lumbar spinal levels (L4-L5) or lumbar fifth to sacral first spinal levels (L5-S1) only; **AND**
  - No more than 1 level discectomy; **AND**
  - Anterior retroperitoneal approach; **AND**
  - Documented skeletal maturity (patient's age is greater than 18 years); **AND**
  - **ANY** of the following:
    - Failure of conservative management for greater than 6 months, including **ALL** of the following:
      - ◆ Anti-inflammatory medications, analgesics, or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **AND**
      - ◆ Physical therapy; **AND**
      - ◆ Epidural steroid injections (ESI) for **ANY** of the following:
        - If medically appropriate; **OR**
        - Corticosteroid injection is contraindicated; **OR**

- The patient's severe pain or disability is affecting their quality of life and limiting their daily life (including working and ability to provide self-care).

## Non-Indications

→ A **total disc arthroplasty** is not considered appropriate if **ANY** of the following is **TRUE**<sup>3-6</sup>:

- ◆ Active systemic infection or infection at operative site; **OR**
- ◆ Diagnosed osteoporosis or osteopenia; **OR**
- ◆ Allergy to implant materials; **OR**
- ◆ Severe facet joint syndrome or degeneration; **OR**
- ◆ Current or past trauma or disease has created significant deformity of the vertebral bodies at the index levels; **OR**
- ◆ Bridging osteophytes or bone spurs; **OR**
- ◆ Radiographic evidence of marked cervical instability as evidenced on imaging<sup>9-11</sup>:
  - Greater than 3 mm translation; **OR**
  - Greater than 11 degrees angular rotation; **OR**
  - Prior cervical decompression; **OR**
- ◆ Isolated lumbar radiculopathy, primarily due to herniated disc; **OR**
- ◆ Chronic radiculopathy (unrelenting pain with predominance of leg pain symptoms greater than back pain symptoms extending over at least 1 year); **OR**
- ◆ Myelopathy due to cervical stenosis from facet and/or posterior hypertrophy; **OR**
- ◆ Lumbar spinal stenosis; **OR**
- ◆ Scoliosis or other spinal deformity (e.g., focal lordosis, kyphosis at the level of the planned arthroplasty); **OR**
- ◆ Compromised vertebral bodies due to trauma or disease at the affected level; **OR**
- ◆ Facet joint degeneration; **OR**
- ◆ Greater than 50% decrease in disc height<sup>12-13</sup>; **OR**
- ◆ Abdominal pathology that would prevent an anterior retroperitoneal approach; **OR**
- ◆ Involved vertebral endplate not compatible with the artificial disc; **OR**
- ◆ Extruded disc material with sequestrum (e.g., free disc fragment); **OR**
- ◆ Ossification of the posterior longitudinal ligament (OPLL); **OR**

- ◆ Sensitivity or allergy to implant materials.

### **Level of Care Criteria**

Inpatient or Outpatient

### **Procedure Codes (CPT/HCPCS)**

| <b>CPT/HCPCS Code</b> | <b>Code Description</b>                                                                                                                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0095T                 | Removal of total disc arthroplasty (artificial disc), anterior approach, each additional interspace, cervical (List separately in addition to code for primary procedure)                                                                                |
| 0098T                 | Revision including replacement of total disc arthroplasty (artificial disc), anterior approach, each additional interspace, cervical (List separately in addition to code for primary procedure)                                                         |
| 0164T                 | Removal of total disc arthroplasty, (artificial disc), anterior approach, each additional interspace, lumbar (List separately in addition to code for primary procedure)                                                                                 |
| 0165T                 | Revision including replacement of total disc arthroplasty (artificial disc), anterior approach, each additional interspace, lumbar (List separately in addition to code for primary procedure)                                                           |
| 0202T                 | Posterior vertebral joint(s) arthroplasty (eg, facet joint[s] replacement), including facetectomy, laminectomy, foraminotomy, and vertebral column fixation, injection of bone cement, when performed, including fluoroscopy, single level, lumbar spine |
| 22856                 | Total disc arthroplasty (artificial disc), anterior approach, including discectomy with end plate preparation (includes osteophylectomy for nerve root or spinal cord decompression and microdissection); single interspace, cervical                    |

|       |                                                                                                                                                                                                                                                                                              |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22857 | Total disc arthroplasty (artificial disc), anterior approach, including discectomy to prepare interspace (other than for decompression); single interspace, lumbar                                                                                                                           |
| 22858 | Total disc arthroplasty (artificial disc), anterior approach, including discectomy with end plate preparation (includes osteophylectomy for nerve root or spinal cord decompression and microdissection); second level, cervical (List separately in addition to code for primary procedure) |
| 22860 | Total disc arthroplasty (artificial disc), anterior approach, including discectomy to prepare interspace (other than for decompression); second interspace, lumbar (List separately in addition to code for primary procedure)                                                               |
| 22861 | Revision including replacement of total disc arthroplasty (artificial disc), anterior approach, single interspace; cervical                                                                                                                                                                  |
| 22862 | Revision including replacement of total disc arthroplasty (artificial disc), anterior approach, single interspace; lumbar                                                                                                                                                                    |
| 22864 | Removal of total disc arthroplasty (artificial disc), anterior approach, single interspace; cervical                                                                                                                                                                                         |
| 22865 | Removal of total disc arthroplasty (artificial disc), anterior approach, single interspace; lumbar                                                                                                                                                                                           |

# Medical Evidence

Fiani et al. (2021) concluded that spinal disc arthroplasty is a viable alternative to standard decompression and fusion methods for the treatment of degenerative disc disease. Both cervical and lumbar arthroplasties may be safe and effective with improved segmental motion.<sup>1</sup>

Gupta et al. (2020) discuss the effectiveness of artificial disc replacement, which stabilizes and preserves segmental spinal motion. The anterior approach is most commonly used.<sup>2</sup>

The United States Food and Drug Administration (FDA) has approved several artificial intervertebral discs to for arthroplasty, including the following:

- The Simplify Cervical Artificial Disc (2021) is indicated for use in skeletally mature patients for disc reconstruction at one level from C3-C7 for intractable radiculopathy or myelopathy.<sup>4</sup>
- The activL Artificial Disc (2015) is intended for one-level disc reconstruction (L4, L5, or L5-S1) in skeletally mature patients with symptomatic degenerative disc disease with no more than grade I spondylolisthesis at the involved level.<sup>6</sup>

The North American Spine Society (NASS) has published the following related Coverage Policy Recommendations:

- *Cervical Artificial Disc Replacement* (2015) is indicated for two-level cervical disc replacement for radiculopathy related to nerve root compression in C3-C4 to C6-C7. The procedure is also recommended for myelopathy or myeloradiculopathy related to central spinal stenosis from one- or two-level degenerative disease in C3-C4 to C6-C7.<sup>3</sup>
- *Lumbar Artificial Disc Replacement* (2019) is recommended for discogenic low back pain at a single level for L3-L4, L4-L5, or L5-S1 in individuals who have failed at least 6 months of nonoperative treatment.<sup>5</sup>

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# Clinical Guideline Revision History/Information

|                                   |            |                                                                                                                                                                                                                                             |
|-----------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Original Date: September 29, 2023 |            |                                                                                                                                                                                                                                             |
| Review History                    |            |                                                                                                                                                                                                                                             |
| Version 2                         | 9/20/2024  | Updated language regarding conservative treatment.                                                                                                                                                                                          |
| Version 3                         | 12/19/2024 | <ul style="list-style-type: none"><li>• Annual review</li><li>• Indications updated</li><li>• Non-indications updated</li><li>• References updated</li><li>• Structure aligned to the template</li><li>• Medical evidence updated</li></ul> |



## **Cohere Medical Policy – Vertebral Body Tethering**

*Clinical Guidelines for Medical Necessity Review*

**Version: 3**

**Cohere Health UMC Approval Date: July 10, 2025**

Last Annual Review: July 10, 2025

Revision: Not Applicable

Next Annual Review: July 10, 2026

# Important Notices

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## Guideline Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Vertebral Body Tethering

**Type:** ☒ Adult (18+ yo) | ☐ Pediatric (0-17yo)

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# Medical Necessity Criteria

## ***Service: Vertebral Body Tethering***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive, or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the

patient's primary symptoms can be adequately assessed with a single study or procedure.

### **Description**

Vertebral body tethering (VBT) is a minimally invasive surgical procedure to treat growing, skeletally immature children with scoliosis.<sup>1</sup> VTB uses pedicle screws implanted in the vertebral bodies near the curved area of a spine with scoliosis. A cable is attached to the screws and tightened, providing some immediate straightening of the spine and possibly continued correction as the patient grows. VBT operates under the Hueter-Volkman law, which indicates that greater compression on a growth plate inhibits growth, whereas less compression (or distraction) can promote it.<sup>3</sup> Although the procedure has shown promising results, it lacks the long-term safety and efficacy data to recommend its use robustly.

### **Medical Necessity Criteria**

#### **Indications**

**Vertebral body tethering** is considered appropriate if **ANY** of the following is **TRUE**:

- This procedure is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

#### **Non-Indications**

**Vertebral body tethering** is not considered appropriate if **ANY/ALL** of the following is **TRUE**:

- This is not applicable, as there are no indications.

### **Level of Care Criteria**

None

### **Procedure Codes (CPT/HCPCS)**

| CPT/HCPCS Code | Code Description                                               |
|----------------|----------------------------------------------------------------|
| 0656T          | Vertebral body tethering, anterior; up to 7 vertebral segments |

|       |                                                                                                                                                                      |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0657T | Vertebral body tethering, anterior; 8 or more vertebral segments                                                                                                     |
| 0790T | Revision (eg, augmentation, division of tether), replacement, or removal of thoracolumbar or lumbar vertebral body tethering, including thoracoscopy, when performed |
| 22836 | Anterior thoracic vertebral body tethering, including thoracoscopy, when performed; up to 7 vertebral segments                                                       |
| 22837 | Anterior thoracic vertebral body tethering, including thoracoscopy, when performed; 8 or more vertebral segments                                                     |
| 22838 | Revision (eg, augmentation, division of tether), replacement, or removal of thoracic vertebral body tethering, including thoracoscopy, when performed                |
| 22899 | Unlisted procedure, spine                                                                                                                                            |

# Medical Evidence

In a recent umbrella review that included 11 relevant systematic reviews and meta-analyses, Lau et al. (2024) attempted to put together a comprehensive and diligent analysis of the current existing evidence of the effectiveness and safety of VBT for the management of adolescent idiopathic scoliosis, putting together the results from various systematic reviews and meta-analyses. They found that VBT has shown promising results for treating adolescent idiopathic scoliosis. However, because VBT is a relatively new procedure, it lacks thorough information on its long-term effects, and the rates of complications remain a significant concern.<sup>5</sup>

In 2019, the United States Food and Drug Administration (FDA) approved the Tether Vertebral Body Tethering System for skeletally immature patients with progressive idiopathic scoliosis after failing or not tolerating brace wear. The approval is under the Humanitarian Device Exemption (HDE). This FDA approval pathway allows marketing specific medical devices for rare diseases or conditions affecting 8,000 or fewer individuals in the U.S. annually.<sup>1</sup> In 2024, the FDA provided a safety update based on the post-market experience using the Tether Vertebral Body Tethering System in pediatric patients since the 2019 approval.<sup>2</sup>

Alasadi et al. (2024) conducted a comprehensive review of VBT for adolescent idiopathic scoliosis, a non-fusion alternative to anterior or posterior spinal fusion. They reviewed the literature and reports on radiographic outcomes, complications, and anesthetic considerations. Their review illustrates the potential benefits as well as the challenges of adolescent idiopathic scoliosis treatment with VBT. In their conclusions, they stress the importance of skeletal maturity concerning complications such as approach and procedure-related issues with pulmonary complications, device breakage, and high reoperation rates.<sup>4</sup>



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# Policy Revision History/Information

| Original Date: October 6, 2023 |            |                                                                                                                                                                |
|--------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                 |            |                                                                                                                                                                |
| Version 2                      | 04/26/2024 | Annual review.<br><br>Policy criteria and medical literature reviewed.                                                                                         |
| Version 3                      | 07/10/2025 | Annual review.<br><br>New description section.<br><br>No changes to procedure codes.<br><br>Literature review – The medical evidence section has been updated. |



## **Cohere Medical Policy – Vertebral Corpectomy**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 4  
**Effective Date:** January 2, 2025

# Important Notices

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## Guideline Information:

**Specialty Area:** Disorders of the Musculoskeletal System

**Guideline Name:** Cohere Medical Policy - Vertebral Corpectomy

**Date of last literature review:** 12/31/2024

**Document last updated:** 12/31/2024

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Vertebral Corpectomy***

### **Recommended Clinical Approach**

Corpectomy involves surgical removal of the central portion of a vertebral body and replacement with graft material.<sup>1</sup> Single or multi-level disc disease may be treated via an anterior approach (with fusion), as well as symptoms related to short-segment ossification of the posterior longitudinal ligament.<sup>2-3</sup> Other approaches (posterior, lateral, oblique) may be chosen based on the location of compression or if a contraindication to the anterior approach exists.<sup>4</sup> Vertebral corpectomy may be used to treat degenerative disease, infection, tumor, or fracture. Partial vertebral excision/partial corpectomy may be used based on the patient's anatomical presentation and degree of spinal compression.

### **Medical Necessity Criteria**

#### **Indications**

- A **full/partial vertebral corpectomy** is considered appropriate when **ANY** of the following is **TRUE**:
- ◆ The procedure is a **full/partial cervical corpectomy**, and **ALL** of the following are **TRUE**<sup>5</sup>:
    - **ANY** of the following radiographic findings on advanced imaging (magnetic resonance imaging [MRI] or computed tomography [CT] myelogram) are **TRUE**:
      - Ossified posterior longitudinal ligament causing cord compression; **OR**
      - Unstable cervical burst fracture; **OR**
      - Cervical vertebral osteomyelitis when **ANY** of the following is **TRUE**:
        - ◆ No response to nonoperative management (intravenous and oral antimicrobial therapy; **OR**
        - ◆ The infection is causing symptomatic cord compression); **OR**

- Ventral epidural abscess causing cord compression with myelopathy; **OR**
- Cervical vertebral body tumor; **OR**
- Correction of cervical kyphosis; **OR**
- Revision of failed cervical disc arthroplasty (such as disc replacement); **OR**
- Cervical vertebral body fracture related to previous surgery; **AND**
- **ANY** of the following is **TRUE**:
  - The patient has cervical myelopathy due to cord compression from disc, osteophyte, thickened or ossified posterior longitudinal ligament (PLL) behind the vertebral body, and **ANY** of the following is **TRUE**<sup>3.6</sup>:
    - ◆ **ANY** of the following symptoms:
      - Gait disturbance or abnormality; **OR**
      - Lower or upper extremity weakness; **OR**
      - Paresthesias or numbness in the upper extremities; **OR**
      - Loss of dexterity/coordination; **OR**
      - Bowel or bladder dysfunction; **OR**
    - ◆ **ANY** of the following physical examination findings:
      - Lhermitte's sign; **OR**
      - Hoffman's sign; **OR**
      - **ANY** of the following upper lower motor neuron (ULMN) findings in the upper extremities:
        - Weakness; **OR**
        - Atrophy; **OR**
      - **ANY** of the following ULMN findings in the lower extremities:
        - Hypertonicity; **OR**
        - Hyperreflexia; **OR**
        - Positive Babinski (extension of toes with distal to proximal plantar stimulation of foot); **OR**
        - Multiple beats or sustained clonus; **OR**

- Decreased sensation, proprioception, or vibratory sense; **OR**
  - Loss of sphincter tone; **OR**
- The patient has cervical radiculopathy due to cord or nerve root compression from disc, osteophyte, thickened or ossified PLL behind the vertebral body, and **ALL** of the following are **TRUE**:
  - ◆ **ANY** of the following symptoms:
    - Neck pain; **OR**
    - Arm pain; **OR**
    - Scapular pain; **OR**
    - Periscapular pain; **OR**
    - Anterior chest pain; **OR**
    - Weakness, numbness, or paresthesia in the upper extremity; **OR**
    - Headache; **AND**
  - ◆ **ANY** of the following positive specialty tests:
    - Spurling's test or maneuver or compression test (reproduction of symptoms with neck extension, lateral flexion, and downward compression or loading); **OR**
    - Shoulder abduction test (symptoms relieved with shoulder abduction); **AND**
  - ◆ **ANY** of the following is **TRUE**:
    - Failure of conservative management for greater than 6 weeks, including **ALL** of the following<sup>8</sup>:
      - Oral steroids, anti-inflammatory medications, or analgesics; **AND**
      - Physical therapy or physician-directed home exercise program; **AND**
      - Facet injections/medial branch blocks (MBBB); **AND**
      - Epidural steroid injections (ESI); **AND**
      - **ANY** of the following:



- ◆ Corticosteroid injection if medically appropriate; **OR**
  - ◆ Corticosteroid injection is contraindicated; **OR**
  - The patient has severe pain or disability that affects their quality of life and limits their daily life (such as working or ability to provide self-care); **OR**
- ◆ The procedure is a **full/partial thoracic corpectomy**, and **ANY** of the following radiographic findings on advanced imaging (MRI or CT myelogram) is **TRUE**:
  - Trauma (vertebral body fractures) in the thoracic region; **OR**
  - Tumor present in the thoracic region; **OR**
  - Thoracic vertebral osteomyelitis when **ANY** of the following is **TRUE**:
    - No response to nonoperative management (intravenous and oral antimicrobial therapy; **OR**
    - The infection is causing symptomatic cord compression); **OR**
- ◆ The procedure is a **full/partial lumbar corpectomy**, and **ANY** of the following, seen on advanced imaging (MRI or CT myelogram), is **TRUE**:
  - The patient has an unstable lumbar burst fracture; **OR**
  - Lumbar vertebral osteomyelitis when **ANY** of the following is **TRUE**:
    - No response to nonoperative management (intravenous and oral antimicrobial therapy; **OR**
    - The infection is causing symptomatic cord compression); **OR**
  - Lumbar vertebral body tumor; **OR**
  - Lumbar kyphosis; **OR**
  - Failure of previous lumbar surgery such as disc replacement; **OR**
  - Lumbar vertebral fracture related to previous surgery.

## Non-Indications

→ A **full/partial vertebral corpectomy** is not considered appropriate if **ANY** of the following is **TRUE**:

- ◆ There are no absolute non-indications for a vertebral corpectomy.

## Level of Care Criteria

Inpatient or Outpatient

## Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                                                                                                                                    |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22100          | Partial excision of posterior vertebral component (e.g., spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; cervical                                                                            |
| 22101          | Partial excision of posterior vertebral component (e.g., spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; thoracic                                                                            |
| 22102          | Partial excision of posterior vertebral component (e.g., spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; lumbar                                                                              |
| 22103          | Partial excision of posterior vertebral component (e.g., spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; each additional segment (List separately in addition to code for primary procedure) |
| 22110          | Partial excision of vertebral body, for intrinsic bony lesion, without decompression of spinal cord or nerve root(s), single vertebral segment; cervical                                                                            |
| 22112          | Partial excision of vertebral body, for intrinsic bony lesion, without decompression of spinal cord or nerve root(s), single vertebral segment; thoracic                                                                            |
| 22114          | Partial excision of vertebral body, for intrinsic bony                                                                                                                                                                              |

|       |                                                                                                                                                                                                                                                    |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | lesion, without decompression of spinal cord or nerve root(s), single vertebral segment; lumbar                                                                                                                                                    |
| 22116 | Partial excision of vertebral body, for intrinsic bony lesion, without decompression of spinal cord or nerve root(s), single vertebral segment; each additional vertebral segment (List separately in addition to code for primary procedure)      |
| 22899 | Unlisted procedure, spine                                                                                                                                                                                                                          |
| 63081 | Vertebral corpectomy (vertebral body resection), partial or complete, anterior approach with decompression of spinal cord and/or nerve root(s); cervical, single segment                                                                           |
| 63082 | Vertebral corpectomy (vertebral body resection), partial or complete, anterior approach with decompression of spinal cord and/or nerve root(s); cervical, each additional segment (List separately in addition to code for primary procedure)      |
| 63085 | Vertebral corpectomy (vertebral body resection), partial or complete, transthoracic approach with decompression of spinal cord and/or nerve root(s); thoracic, single segment                                                                      |
| 63086 | Vertebral corpectomy (vertebral body resection), partial or complete, transthoracic approach with decompression of spinal cord and/or nerve root(s); thoracic, each additional segment (List separately in addition to code for primary procedure) |
| 63087 | Vertebral corpectomy (vertebral body resection), partial or complete, combined thoracolumbar approach with decompression of spinal cord, cauda equina or nerve root(s), lower thoracic or lumbar; single segment                                   |
| 63088 | Vertebral corpectomy (vertebral body resection), partial or complete, combined thoracolumbar                                                                                                                                                       |

|       |                                                                                                                                                                                                                                                                                                                      |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | approach with decompression of spinal cord, cauda equina or nerve root(s), lower thoracic or lumbar; each additional segment (List separately in addition to code for primary procedure)                                                                                                                             |
| 63090 | Vertebral corpectomy (vertebral body resection), partial or complete, transperitoneal or retroperitoneal approach with decompression of spinal cord, cauda equina or nerve root(s), lower thoracic, lumbar, or sacral; single segment                                                                                |
| 63091 | Vertebral corpectomy (vertebral body resection), partial or complete, transperitoneal or retroperitoneal approach with decompression of spinal cord, cauda equina or nerve root(s), lower thoracic, lumbar, or sacral; each additional segment (List separately in addition to code for primary procedure)           |
| 63101 | Vertebral corpectomy (vertebral body resection), partial or complete, lateral extracavitary approach with decompression of spinal cord and/or nerve root(s) (e.g., for tumor or retropulsed bone fragments); thoracic, single segment                                                                                |
| 63102 | Vertebral corpectomy (vertebral body resection), partial or complete, lateral extracavitary approach with decompression of spinal cord and/or nerve root(s) (e.g., for tumor or retropulsed bone fragments); lumbar, single segment                                                                                  |
| 63103 | Vertebral corpectomy (vertebral body resection), partial or complete, lateral extracavitary approach with decompression of spinal cord and/or nerve root(s) (e.g., for tumor or retropulsed bone fragments); thoracic or lumbar, each additional segment (List separately in addition to code for primary procedure) |
| 63300 | Vertebral corpectomy (vertebral body resection),                                                                                                                                                                                                                                                                     |

|       |                                                                                                                                                                                                             |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | partial or complete, for excision of intraspinal lesion, single segment; extradural, cervical                                                                                                               |
| 63301 | Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; extradural, thoracic by transthoracic approach                                    |
| 63302 | Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; extradural, thoracic by thoracolumbar approach                                    |
| 63303 | Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; extradural, lumbar or sacral by transperitoneal or retroperitoneal approach       |
| 63304 | Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; intradural, cervical                                                              |
| 63305 | Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; intradural, thoracic by transthoracic approach                                    |
| 63306 | Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; intradural, thoracic by thoracolumbar approach                                    |
| 63307 | Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; intradural, lumbar or sacral by transperitoneal or retroperitoneal approach       |
| 63308 | Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; each additional segment (List separately in addition to codes for single segment) |

# Medical Evidence

In a 2022 systematic review, Piche et al. discuss the evolution of lumbar corpectomy, including the transition away from open procedures to less invasive mini-open procedures, often avoiding complications such as vascular injury, bowel and urogenital injury, nerve injury, etc. They briefly summarize indications for lumbar corpectomy, including trauma, spinal deformity, tumor, and lumbar infection. The authors of the report state that their preference is the transposas method in order to improve visualization during the corpectomy procedure.<sup>9</sup>

In a systematic review by Lannon et al. (2021), degenerative cervical myelopathy (DCM) is described as a leading cause of spinal cord injury and spinal stenosis with increasing incidence. Early surgical referral (e.g., discectomy, corpectomy, laminoplasty) is recommended, alongside conservative management, to prevent progressive neurologic compromise.<sup>13</sup> The authors note that symptomatic myelopathy, in combination with cord compression that is confirmed on imaging, and for which no comorbid pathology is the contributory cause of symptoms, is indicated for surgical management.

Tatter et al. (2021) concluded, in a case series of 119 patients, that anterior cervical corpectomy and fusion are safe and effective with low revision and complication rates for degenerative and traumatic spinal disorders. Single-level surgery does not require posterior fixation; however, multi-level procedures do require posterior fixation.<sup>10</sup>

In a retrospective study, Audat et al. (2018) concluded that surgical treatment is the ideal choice for cervical spondylotic myelopathy, and whether to use an anterior or posterior approach is controversial. The studies reviewed revealed little difference in outcomes between approach types.<sup>4</sup>

The North American Spine Society (NASS) published the following coverage recommendations:

- *Cervical Fusion* (2023): Anterior cervical corpectomy is recommended in cervical myelopathy; however, they state that instability may result from the procedure when used to treat spinal infection. Surgical

strategies exist to preserve the soft tissues and ligamentous structures without compromising decompression.<sup>8</sup>

- *Lumbar Fusion* (2021): Discusses predominantly lumbar fusion, mentioning the possibility of postoperative spinal instability when surgery is used to treat spinal infection.<sup>11</sup>

The American College of Radiology (ACR) Expert Panel on Neurological Imaging has published several guidelines related to myelopathic evaluation:

- Agarwal et al. (2021) updated the previous *Myelopathy Appropriate Use Criteria*, with MRI recommended as initial imaging for acute onset myelopathy as well as chronic or progressive myelopathy due to its superior resolution of soft tissue and ability to evaluate surrounding structures. CT is designated as May Be Appropriate in the ratings, with CT myelography of possible use prior to surgical intervention.<sup>7</sup>
- McDonald et al. (2018) recommended radiography, MRI, or CT for initial imaging in new or increasing nontraumatic neck pain, as well as in cervical radiculopathy. In patients with a history of cervical spine surgery, radiography, and non-contrast CT are primary recommendations, with a disagreement on the appropriateness of MRI (contrast and non-contrast). CT myelography is rated as May Be Appropriate.<sup>12</sup>
- The *Low Back Pain Appropriateness Criteria* (Hutchins et al., 2021) recommended non-contrast MRI as Usually Appropriate and radiography and CT as May Be Appropriate in low back pain with and without radiculopathy. This applied to surgical candidates with persistence or progression of symptoms, having failed six weeks of medical management. MRI, CT, and CT myelography were recommended for suspected cauda equina syndrome. In osteoporosis or chronic steroid use, radiography, non-contrast MRI, or CT was recommended as Usually Appropriate.<sup>13</sup>

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# Clinical Guideline Revision History/Information

| Original Date: September 29, 2023 |            |                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                    |            |                                                                                                                                                                                                                                                                                                                                      |
| Version 2                         | 11/17/2023 |                                                                                                                                                                                                                                                                                                                                      |
| Version 3                         | 9/20/2024  | Updated language regarding conservative treatment.                                                                                                                                                                                                                                                                                   |
| Version 4                         | 1/2/2025   | <ul style="list-style-type: none"><li>• Annual review.</li><li>• Standardized infection language throughout indications.</li><li>• Removed non-indications that are not absolute non-indications.</li><li>• Reviewed boolean logic.</li><li>• Literature review - Medical Evidence section updated (including references).</li></ul> |
|                                   |            |                                                                                                                                                                                                                                                                                                                                      |



## **Cohere Medical Policy – Viscosupplementation**

*Clinical Policy for Medical Necessity Review*

**Version: 2**

**Cohere Health UMC Approval Date: July 24, 2025**

Last Annual Review: July 24, 2025

Revision: Not applicable

Next Annual Review: July 24, 2026

# Important Notices

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## Policy Information:

**Specialty Area:** Musculoskeletal Care

**Policy Name:** Cohere Medical Policy - Viscosupplementation

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17 yo)

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# Medical Necessity Criteria

## ***Service: Viscosupplementation***

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched procedure, laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.

### **Description**

Viscosupplementation refers to the injection of hyaluronic acid into a knee joint to manage the pain, swelling, and immobility associated with osteoarthritis.<sup>1,2</sup> Prior to the administration of hyaluronic acid, a naturally occurring substance produced in the synovial membrane, the provider may inject a local anesthetic into the affected joint. Hyaluronic acid has antioxidative, anti-inflammatory, and pain-relieving properties, and is injected during viscosupplementation to minimize friction between articular cartilage.<sup>3-5</sup>

## Medical Necessity Criteria

### Indications

**Viscosupplementation** is considered appropriate if **ANY** of the following is **TRUE**<sup>3,6</sup>:

- Initial injection(s) are considered appropriate when **ALL** of the following are **TRUE**:
  - The site of the injection is the knee joint; **AND**
  - The patient is 18 years of age or older; **AND**
  - **ANY** of the following osteoarthritis symptoms<sup>3</sup>:
    - Painful range of motion or pain with activity attributable to osteoarthritis; **OR**
    - Functional impairment attributable to osteoarthritis; **OR**
    - Crepitus with range of motion; **OR**
    - Presence of popliteal cyst (Baker cyst)<sup>7</sup>; **AND**
  - Mild to moderate osteoarthritis diagnosis has been confirmed by radiography; **OR**
- Failure of conservative management for greater than 3 months, including **ALL** of the following:
  - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
  - Physical therapy or a physician-directed home exercise program; **AND**
  - **ANY** of the following:
    - Corticosteroid injection if medically appropriate; **OR**
    - Documentation that corticosteroid injection is contraindicated; **OR**
- Repeat injection(s) are considered appropriate when **ALL** of the following are **TRUE**<sup>3,8</sup>:
  - Initial injection criteria are met; **AND**
  - The patient's symptoms have recurred; **AND**
  - The patient experienced improvement in **ANY** of the following the previous injection(s):
    - Pain; **OR**
    - Functional improvement; **AND**
  - At least six months have passed since the prior injection.<sup>3</sup>

## Non-Indications

**Viscosupplementation** is not considered appropriate if **ANY** of the following is **TRUE**<sup>3,5</sup>:

- The site of injection is not the knee joint; **OR**
- The patient has known hypersensitivity to hyaluronate preparations; **OR**
- The patient has an active, infection or skin disease near the injection site or involving the knee joint.

## Level of Care Criteria

Outpatient

## Procedure Codes (CPT/HCPCS)

| CPT/HCPCS Code | Code Description                                                                                                                                                                 |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20610          | Arthrocentesis, aspiration and/or injection, major joint or bursa (eg, shoulder, hip, knee, subacromial bursa); without ultrasound guidance                                      |
| 20611          | Arthrocentesis, aspiration and/or injection, major joint or bursa (eg, shoulder, hip, knee, subacromial bursa); with ultrasound guidance, with permanent recording and reporting |
| J7318          | Hyaluronan or derivative, durolane, for intra-articular injection, 1 mg                                                                                                          |
| J7321          | Hyaluronan or derivative, hyalgan, supartz or visco-3, for intra-articular injection, per dose                                                                                   |
| J7322          | Hyaluronan or derivative, hymovis, for intra-articular injection, 1 mg                                                                                                           |
| J7323          | Hyaluronan or derivative, euflexxa, for intra-articular injection, per dose                                                                                                      |
| J7324          | Hyaluronan or derivative, orthovisc, for intra-articular injection, per dose                                                                                                     |
| J7325          | Hyaluronan or derivative, synvisc or synvisc-one, for                                                                                                                            |



|       |                                                                             |
|-------|-----------------------------------------------------------------------------|
|       | intra-articular injection, 1 mg                                             |
| J7326 | Hyaluronan or derivative, gel-one, for intra-articular injection, per dose  |
| J7327 | Hyaluronan or derivative, monovisc, for intra-articular injection, per dose |
| J7328 | Hyaluronan or derivative, gelsyn-3, for intra-articular injection, 0.1 mg   |
| J7329 | Hyaluronan or derivative, trivisc, for intra-articular injection, 1 mg      |
| J7331 | Hyaluronan or derivative, synojoynt, for intra-articular injection, 1 mg    |
| J7332 | Hyaluronan or derivative, triluron, for intra-articular injection, 1 mg     |

# Medical Evidence

A systematic review and meta-analysis of viscosupplementation for knee osteoarthritis, conducted by Pereira et al. (2022), found that the treatment resulted in small reductions in knee pain when compared with a placebo. The authors of the review concluded that, compared to placebo, viscosupplementation was associated with a statistically significant increased risk of serious adverse events, including major disability, life-threatening events, and death.<sup>9</sup>

Bączkiewicz et al. (2021) recruited 35 patients with knee arthritis and 50 without knee arthritis to evaluate the impact of viscosupplementation on the movement of the knee joint. While the research team found viscosupplementation to be effective, the arthrokinematic improvements patients gained from the treatment tended to be short-lived: Four weeks after the injection, vibroarthrographic signals collected during knee flexion and extension—which were found to have decreased considerably after two weeks—had returned to pre-injection levels.<sup>10</sup>

Peck et al. (2021) performed a systematic review of the literature related to viscosupplementation in osteoarthritis of the knee. A 2006 Cochrane review of 76 randomized controlled trials supported the use of viscosupplementation in knee osteoarthritis. Despite such robust conclusions, current recommendations are conflicting. The American Academy of Orthopedic Surgeons did not recommend viscosupplementation for osteoarthritis of the knee in their 2013 clinical practice guidelines. The Osteoarthritis Research Society International offered an “uncertain” recommendation in 2014, and the American College of Rheumatology did not recommend this treatment either.<sup>3</sup>

Legré-Boyer reviewed viscosupplementation techniques, indications, and results in 2014. They found moderate but significant efficacy (20%) in 60–70% of patients surveyed with knee osteoarthritis. The efficacy onset was found to be 1–4 weeks later than with corticosteroids with longer symptom relief and functional improvement, from six to up to 12 months. It was stated that some

meta-analyses created debate with discordant findings. Regarding technique, it was found that 10–30% of injections performed by senior physicians were known to be defective.<sup>7</sup>

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# Policy Revision History/Information

| Original Date: March 29, 2024 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Review History                |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Version 2                     | 07/24/2025 | <p>Annual review</p> <p>Added description of viscosupplementation (Page 4)</p> <p>Updated conservative management language in indications (Page 4)</p> <p>Added indication: "The patient is 18 years of age or older"</p> <p>Changed the contraindication "Intra-articular injections are contraindicated for current or past infections or skin diseases at the injection site" to "The patient has an active infection or skin disease at the injection site"—which aligns more closely with recent studies.</p> <p>Medical Evidence section updated (Pereira et al., 2022; Bączkiewicz et al., 2021).</p> <p>New references added: Conrozier et al. 2021; Pinto et al., 2024; Migliore et al., 2021; Abate et al., 2021; Altman et al., 2018; Pereira et al., 2022; Bączkiewicz et al., 2021)</p> |