

Cohere Medical Policy – Musculoskeletal Medicare Advantage

Clinical Guidelines for Medical Necessity Review

Consolidated Reference • 61 Policies

Updated on 05/26/2026

Important Notices

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Table of Contents

Important Notices 2

Table of Contents 3

Cohere Medical Policy - Omnibus (Musculoskeletal Care and Pain Management), v1, 04/09/2026	4
Cohere Medical Policy - Omnibus Codes (Musculoskeletal Care and Pain Management), v1, 04/09/2026	119
Cohere Medicare Advantage Policy - Ankle Arthrodesis (2), v1, 05/31/2024	200
Cohere Medicare Advantage Policy - Ankle Arthroplasty (1), v1, 05/28/2024	210
Cohere Medicare Advantage Policy - Bone Xenograft, v4, 05/21/2026	220
Cohere Medicare Advantage Policy - Bunionette Surgical Treatments, v1, 05/24/2024	231
Cohere Medicare Advantage Policy - Cervical Spinal Fusion (1), v3.1, 03/27/2025	239
Cohere Medicare Advantage Policy - Facet Injections, v2, 04/09/2026	259
Cohere Medicare Advantage Policy - Facet Joint Allograft Arthroplasty, v1, 05/29/2024	275
Cohere Medicare Advantage Policy - Genicular Nerve Procedures, v2.1, 03/18/2025	284
Cohere Medicare Advantage Policy - Great Toe Surgical Treatments (1), v1, 05/24/2024	297
Cohere Medicare Advantage Policy - Hammertoe, Claw Toe, or Mallet Toe Surgical Treatment with or without Fusion, v1, 05/24/2024	310
Cohere Medicare Advantage Policy - Hip Arthroplasty, v3, 02/20/2025	319
Cohere Medicare Advantage Policy - Hip Arthroscopy (2), v4, 09/11/2025	337
Cohere Medicare Advantage Policy - Hip Core Decompression With or Without Bone Grafting, v1, 03/20/2025	357
Cohere Medicare Advantage Policy - Interphalangeal Joint Arthroplasty, v3, 05/29/2025	369
Cohere Medicare Advantage Policy - Interspinous Process Devices with Open Decompression, v1, 05/31/2024	381
Cohere Medicare Advantage Policy - Interspinous Process Devices without Decompression (1), v1, 05/31/2024	390
Cohere Medicare Advantage Policy - Intradiscal biacuplasty, PIRFT, IDET, v3, 05/22/2025	399
Cohere Medicare Advantage Policy - Intradiscal Biacuplasty, PIRFT, or IDET, v1, 05/24/2024	410
Cohere Medicare Advantage Policy - Intrathecal Pain Pumps, v1, 05/31/2024	418
Cohere Medicare Advantage Policy - Knee Arthroplasty (9), v4, 05/22/2025	432
Cohere Medicare Advantage Policy - Knee Arthroscopy (4), v4, 05/22/2025	455
Cohere Medicare Advantage Policy - Knee Manipulation Under Anesthesia (MUA) (1), v2, 03/10/2026	480
Cohere Medicare Advantage Policy - Knee Open or Arthroscopic Bursectomy, v1, 03/20/2025	491
Cohere Medicare Advantage Policy - Kyphectomy (1), v1, 05/27/2024	501
Cohere Medicare Advantage Policy - Kyphoplasty and Vertebroplasty, v1, 04/17/2025	510
Cohere Medicare Advantage Policy - Lumbar Spinal Fusion (2), v2, 06/10/2024	523
Cohere Medicare Advantage Policy - Miscellaneous Musculoskeletal Procedures, v1, 06/26/2025	542
Cohere Medicare Advantage Policy - Open Meniscus Repair, v1, 03/20/2025	552
Cohere Medicare Advantage Policy - Open Shoulder Surgical Procedures, v1, 03/27/2025	563
Cohere Medicare Advantage Policy - Outpatient Speech Therapy, v2, 04/09/2026	577
Cohere Medicare Advantage Policy - Patellofemoral Reconstruction and Realignment, v1, 03/27/2025	593
Cohere Medicare Advantage Policy - Patellofemoral Reconstruction Realignment, v2, 03/26/2026	609
Cohere Medicare Advantage Policy - Pediatric Vertebral Body Tethering (VBT) and Vertical Expandable Prosthetic Titanium Rib (VEPTR), v1, 06/12/2025	625
Cohere Medicare Advantage Policy - Periacetabular Osteotomy Surgical Dislocation, v1, 03/20/2025	642
Cohere Medicare Advantage Policy - Physical and Occupational Therapy (PT/OT), v1, 04/17/2025	654
Cohere Medicare Advantage Policy - Physical and Occupational Therapy (PT OT), v1.1, 04/17/2025	681
Cohere Medicare Advantage Policy - Physical and Occupational Therapy, v2, 04/09/2026	709
Cohere Medicare Advantage Policy - Proximal Tibial Osteotomy - Google Docs, v1, 04/03/2025	740
Cohere Medicare Advantage Policy - Proximal Tibial Osteotomy, v2, 03/26/2026	753
Cohere Medicare Advantage Policy - Sacroiliac Joint Fusion (4), v4, 05/07/2026	768

Cohere Medicare Advantage Policy - Sacroiliac Joint Injections and Radiofrequency Ablation (3), v2.1, 03/20/2025	786
Cohere Medicare Advantage Policy - Sacroiliac Joint Injections and Radiofrequency Ablation (RFA) (1), v3.1, 03/10/2026	802
Cohere Medicare Advantage Policy - Shoulder Arthroplasty, v1, 05/29/2024	814
Cohere Medicare Advantage Policy - Shoulder Arthroscopy Client Version 2A, v2, 09/10/2024	825
Cohere Medicare Advantage Policy - Shoulder Arthroscopy, v2, 06/10/2024	845
Cohere Medicare Advantage Policy - Shoulder Biceps Tenodesis Tenotomy, v2, 03/26/2026	865
Cohere Medicare Advantage Policy - Shoulder Manipulation Under Anesthesia (1), v2, 03/26/2026	879
Cohere Medicare Advantage Policy - Spinal Cord Stimulators, v1, 04/10/2025	890
Cohere Medicare Advantage Policy - Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy) (1), v5, 05/21/2026	911
Cohere Medicare Advantage Policy - Spinal Osteotomy (1), v1, 04/10/2025	942
Cohere Medicare Advantage Policy - Subchondroplasty (1), v1, 05/27/2024	955
Cohere Medicare Advantage Policy - Tarsometatarsal Arthrodesis (1), v3, 05/22/2025	963
Cohere Medicare Advantage Policy - Thermal Ablation of the Intraosseous Basivertebral Nerve (BVN) (1), v1, 05/29/2024	975
Cohere Medicare Advantage Policy - Thoracolumbar Spinal Fusion with or without Pelvic Fixation, v3, 05/29/2025	986
Cohere Medicare Advantage Policy - Total Disc Arthroplasty (1), v1, 05/31/2024	1009
Cohere Medicare Advantage Policy - Vertebral Body Tethering, v1, 05/29/2024	1021
Cohere Medicare Advantage Policy - Vertebral Corpectomy, v1, 05/31/2024	1029
Cohere Medicare Advantage Policy - Xenograft Implantation (1), v1, 05/27/2024	1044
Cohere Medicare Advantage Policy - Spinal Cord Stimulators, v2, 04/09/2026	1051



Cohere Medical Policy – Omnibus Codes (Musculoskeletal Care and Pain Management)

Clinical Policy for Medical Necessity Review

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Table of Contents

Important Notices	2
Overview	6
Service: Omnibus Codes (Musculoskeletal & Pain)	6
Documentation Requirements	6
Category III Codes	7
Experimental & Investigational Codes	9
Unlisted Codes	10
Procedure Codes (CPT/HCPCS)	11
Category III Codes	11
Experimental & Investigational (E&I) Codes	20
Unlisted Codes	21
Medical Necessity Criteria and Medical Evidence	23
Category III Codes	23
Computer-Assisted Navigation (CAN) for Use with a Musculoskeletal Surgical Procedure	23
Extracorporeal Shock Wave Therapy (ESWT) for Musculoskeletal Conditions	25
Quantitative Sensory Testing (QST) and Interpretation	27
Percutaneous Sacral Augmentation (Sacroplasty)	29
Posterior Vertebral Joint(s) Arthroplasty	30
Facet Joint Injections	31
Placement of a Posterior Intrafacet Implant	33
Platelet-Rich Plasma (PRP) Injections	35
Intramuscular Autologous Bone Marrow Cell Therapy	37
Percutaneous Laminotomy/Laminectomy for Decompression of Neural Elements	39
Transcutaneous Electrical Modulation Pain Reprocessing (Scrambler Therapy)	41
Radiostereometric Analysis (RSA)	42
Percutaneous Cryoablation	43
Autologous White Blood Cell Concentrate (Autologous Protein Solution) Injections	44
Autologous Adipose-Derived Regenerative Cell Therapy for Scleroderma	45
Insertion, Removal, and Reinsertion of Sinus Tarsi Implants	47
Continuous Recording of Movement Disorder Symptoms	48
Bone-Material Quality Testing by Microindentation of the Tibia	50
Low-Level Laser Therapy (LLLT), Dynamic Phototonic, and Dynamic Thermokinetic Energies	51
Bone Strength and Fracture Risk Using Finite Element Analyses	52
Autologous Cellular Implant for Knee Osteoarthritis	55
Osteotomy of the Humerus, with Insertion of an Externally Controlled Intramedullary Lengthening Device	56
Noncontact Real-Time Fluorescence Wound Imaging for Bacterial Presence	58
Percutaneous Injection of Allogeneic Cellular and/or Tissue-Based Products	60
Noncontact Near-Infrared Spectroscopy	62

Anterior Lumbar or Thoracolumbar Vertebral Body Tethering	64
Artificial Intelligence (AI) and Computer-Based Analysis	66
Bone-Substitute Material Injections	67
Autologous Adipose-Derived Regenerative Cell (ADRC) Therapy for Partial-Thickness Rotator Cuff Repair	69
Posterior Vertebral Joint Replacement (Lumbar Spine)	71
Remote Real-Time, Motion Capture-Based Neurorehabilitative Therapy	73
Xenograft Implantation into the Articular Surface	75
Transcutaneous Magnetic Stimulation Using a Focused Low-Frequency Electromagnetic Pulse of a Peripheral Nerve	76
Real-Time Pressure-Sensing Epidural Guidance System	78
Surface Mechanomyography (sMMG)	80
Transcutaneous Auricular Neurostimulation	82
Spinal Neurostimulator Electrode Array with an Integrated Neurostimulator	83
Percutaneous Injection of a Calcium-Based Biodegradable Osteoconductive Material (Proximal Femur)	85
Ultrasound-Based Radiofrequency Echographic Multi-Spectrometry (REMS)	86
Bone-Density Studies and Fracture-Risk Assessments	86
Intraoperative Therapeutic Electrical Stimulation (TES)	87
Placement of a Bone Marrow Sampling Port	88
Orthopedic Implant Movement Analysis	89
Thumb Carpometacarpal (CMC) Arthroplasty	91
Experimental & Investigational (E&I) Codes	92
Percutaneous Decompression	92
Laminotomy (Hemilaminectomy) with Decompression of Nerve Root(s)	94
Radiofrequency Ablation (RFA) of the Sacroiliac Joint	96
Percutaneous Implantation of a Neurostimulator Electrode Array (Sacral Nerve)	98
Unlisted Codes	100
References	103
Policy Revision History/Information	116

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.¹ The codes apply to a procedure or service that is (or has been) performed on a patient and any of the following²:

- 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 following¹:

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 be¹:

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.¹

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. 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. 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. 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>

		<i>Osteotomy/Surgical Dislocation</i> for covered indications. Not covered for all other indications.
27599	Unlisted procedure, femur or knee	See <i>Knee Arthroplasty, Knee Arthroscopy, or Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder)</i> for covered indications. Not covered for all other indications.
28899	Unlisted procedure of foot and toes	See <i>Hammertoe, Claw Toe, or Mallet Toe Surgical Treatment with or without Fusion</i> for covered indications. Not covered for all other indications.
29999	Unlisted procedure, arthroscopy	See <i>Hip Arthroscopy, Knee Arthroscopy, Knee Arthroscopy, or Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder)</i> for covered indications. Not covered for all other indications.
64999	Unlisted procedure, nervous system	See <i>Carpal Tunnel Release, Epidural Steroid Injections (ESI), Facet Joint Injections, or Facet Joint Radiofrequency Ablation (RFA)</i> for covered indications. Not covered for all other indications.
97039	Unlisted modality (specify type and time if constant attendance)	See <i>Physical and Occupational Therapy</i> for covered indications. Not covered for all other indications.
97139	Unlisted therapeutic procedure (specify)	See <i>Physical and Occupational Therapy</i> for covered indications.

		Not covered for all other indications.
97799	Unlisted physical medicine/rehabilitation service or procedure	See <i>Physical and Occupational Therapy</i> for covered indications. 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.³

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.⁴

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 ± 42.1 min) than with CAN (112.5 ± 31.3 min). Dislocation rates did not differ significantly between the control (1.6%) and experimental group (0%).⁵

The American Academy of Orthopaedic Surgeons (AAOS) (2023) published a clinical practice guideline for the surgical management of osteoarthritis of the knee.^{6,7} 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

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.

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.⁸

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.⁹ 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.¹⁰

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.

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.¹¹ 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.¹²

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.¹³

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.^{14,15}

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.

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.¹⁶

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.¹⁷ 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.¹⁸

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.

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.¹⁹

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.^{20,21}

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.²²

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.²³ 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).²⁴

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.²⁵

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.²⁶ 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.²⁷ The North American Spine Society (NASS) noted that facet joint injections may be indicated in certain cases.²⁸

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.

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.²⁹

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.^{21,30}

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.³¹

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.

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.³²

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.³³

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.³⁴

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.³⁵⁻³⁷ 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.^{38,39} 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.^{40,41}

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.

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.⁴²

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.⁴³

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.⁴⁴

The American Academy of Orthopaedic Surgeons (AAOS) (2020) did not make a recommendation in its position statement for the Use of Emerging Biologic Treatment.⁴⁵ In the guideline for the management of glenohumeral joint osteoarthritis, the AAOS (2020) did not support the use of biologics.³⁷

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.

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.⁴⁶

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.⁴⁷

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).⁴⁸

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.

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.⁴⁹ 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.⁵⁰ 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.⁵¹

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.

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.⁵²

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.⁵³

The International Radiostereometry Society (2024) published guidelines that supported RSA and computed tomography (CT)-RSA for migration measurements.⁵⁴

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.

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.⁵⁵ 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.⁵⁶

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.⁵⁷

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.

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.⁵⁸ 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.⁵⁹ King et al. (2018) also noted that current research lacked high-quality randomized controlled trials (RCTs), especially cellular content for musculoskeletal conditions.⁶⁰

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.

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.⁶¹

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 ± 12.5 versus 8.9 ± 10.5 ; $P = 0.299$).⁶²

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.⁶³

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.

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.⁶⁴

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.⁶⁵

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.⁶⁶

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.

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.⁶⁷

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.⁶⁸

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.⁶⁹

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.

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.⁷⁰

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.⁷¹

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.⁷²

Low-Level Laser Therapy (LLLT), Dynamic Phototonic, and Dynamic Thermokinetic Energies

CPT/HCPCS Code	Code Description	Conclusion
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.⁷³

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.⁷⁴

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.⁷⁵

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.⁷⁶

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.⁷⁷

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.⁷⁸

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.

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.⁷⁹

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.⁸⁰

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.⁸¹

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.

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.⁸²

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.⁸³

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).⁸⁴

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.

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.⁸⁵

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.⁸⁶

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.⁸⁷

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.

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.⁸⁸

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.⁸⁹

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).⁹⁰

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.

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 cm² [IQR, 0.9 cm²–2.9 cm²]; $P = .0001$ versus 9.1 cm² [IQR, 4.2 cm²–11.7 cm²]). 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.⁹¹

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.⁹²

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.⁹³

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.

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.⁹⁴

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.⁹⁵

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.⁹⁶

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.⁹⁷

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.

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.⁹⁸

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.⁹⁹

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.¹⁰⁰

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.

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.¹⁰¹

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.¹⁰²

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.¹⁰³

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.

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.¹⁰⁴

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.¹⁰⁵

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.³⁵

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.

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.¹⁰⁶

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.¹⁰⁷

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.¹⁰⁸

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.¹⁰⁹

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.¹¹⁰

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).¹¹¹

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.

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.¹¹²

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.¹¹³

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.¹¹⁴

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.

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.¹¹⁵

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.¹¹⁶

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.¹¹⁷

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.

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.¹¹⁸

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.¹¹⁹

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.¹²⁰

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.

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.¹²¹

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.¹²²

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.¹²³

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.

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.¹²⁴

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.¹²⁵

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.¹²⁶

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.

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.¹²⁷

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.¹²⁸

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.¹²⁹

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.

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.¹³⁰

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.¹³¹

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.¹³²

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.

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.¹³³

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.¹³⁴

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.¹³⁵

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.

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.¹³⁶

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.¹³⁷

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.¹³⁸

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.

The Portomar™ bone marrow sampling port is currently undergoing clinical trials. No current published study results were found in a literature search.¹³⁹

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.

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.¹⁴⁰

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.¹⁴¹

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.¹⁴²

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).

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.¹⁴³

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]).¹⁴⁴

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.¹⁴⁵

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.¹⁴⁶

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.¹⁴⁷

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).⁴⁸

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.

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.¹⁴⁸

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.¹⁴⁷

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.¹⁴⁹

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.

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.¹⁵⁰

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.¹⁵¹

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.¹⁵²

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.

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.¹⁵³

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.¹⁵⁴

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.¹⁵⁵

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. 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. 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. 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. Not covered for all other indications.
27599	Unlisted procedure, femur or knee	See <i>Knee Arthroplasty, Knee Arthroscopy, or Pediatric</i>

		<i>Arthroscopy Procedures (Hip, Knee, Shoulder)</i> for covered indications. Not covered for all other indications.
28899	Unlisted procedure of foot and toes	See <i>Hammertoe, Claw Toe, or Mallet Toe Surgical Treatment with or without Fusion</i> for covered indications. Not covered for all other indications.
29999	Unlisted procedure, arthroscopy	See <i>Hip Arthroscopy, Knee Arthroscopy, Knee Arthroscopy, or Pediatric Arthroscopy Procedures (Hip, Knee, Shoulder)</i> for covered indications. Not covered for all other indications.
64999	Unlisted procedure, nervous system	See <i>Carpal Tunnel Release, Epidural Steroid Injections (ESI), Facet Joint Injections, or Facet Joint Radiofrequency Ablation (RFA)</i> for covered indications. Not covered for all other indications.
97039	Unlisted modality (specify type and time if constant attendance)	See <i>Physical and Occupational Therapy</i> for covered indications. Not covered for all other indications.
97139	Unlisted therapeutic procedure (specify)	See <i>Physical and Occupational Therapy</i> for covered indications. Not covered for all other indications.
97799	Unlisted physical medicine/rehabilitation service or procedure	See <i>Physical and Occupational Therapy</i> 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.¹⁵⁶

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 ± 4.1 mm preoperative to 9.2 ± 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.¹⁵⁷

The AAOS (2019) guideline for the management of rotator cuff injuries did not specifically mention tuberopecty.³⁵

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.¹⁵⁸

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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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Table of contents

Procedure Codes (CPT/HCPCS)	5
Important Notices	17
Overview	18
Service: Computer-Assisted Navigation (CAN) for Use with a Musculoskeletal Surgical Procedure	21
Service: Extracorporeal Shock Wave Therapy (ESWT) for Musculoskeletal Conditions	22
Service: Quantitative Sensory Testing (QST) and Interpretation	23
Service: Percutaneous Sacral Augmentation (Sacroplasty)	24
Service: Posterior Vertebral Joint(s) Arthroplasty	25
Service: Facet Joint Injections	26
Service: Placement of a Posterior Intrafacet Implant	28
Service: Platelet-Rich Plasma (PRP) Injections	29
Service: Intramuscular Autologous Bone Marrow Cell Therapy	30
Service: Percutaneous Laminotomy/Laminectomy for Decompression of Neural Elements	31
Service: Transcutaneous Electrical Modulation Pain Reprocessing (Scrambler Therapy)	32
Service: Radiostereometric Analysis (RSA)	33
Service: Percutaneous Cryoablation	34
Service: Autologous White Blood Cell Concentrate (Autologous Protein Solution) Injections	35
Service: Autologous Adipose-Derived Regenerative Cell Therapy for Scleroderma	36
Service: Insertion, Removal, and Reinsertion of Sinus Tarsi Implants	37
Service: Continuous Recording of Movement Disorder Symptoms	38
Service: Bone-Material Quality Testing by Microindentation of the Tibia	39
Service: Low-Level Laser Therapy (LLLT), Dynamic Phototonic, and Dynamic Thermokinetic Energies	40
Service: Bone Strength and Fracture Risk Using Finite Element Analyses	41

Service: Autologous Cellular Implant for Knee Osteoarthritis	43
Service: Osteotomy of the Humerus, with Insertion of an Externally Controlled Intramedullary Lengthening Device	44
Service: Noncontact Real-Time Fluorescence Wound Imaging for Bacterial Presence	45
Service: Percutaneous Injection of Allogeneic Cellular and/or Tissue-Based Products	46
Service: Noncontact Near-Infrared Spectroscopy	47
Service: Anterior Lumbar or Thoracolumbar Vertebral Body Tethering	48
Service: Artificial Intelligence (AI) and Computer-Based Analysis	49
Service: Bone-Substitute Material Injections	50
Service: Autologous Adipose-Derived Regenerative Cell (ADRC) Therapy for Partial-Thickness Rotator Cuff Repair	51
Service: Posterior Vertebral Joint Replacement (Lumbar Spine)	52
Service: Remote Real-Time, Motion Capture-Based Neurorehabilitative Therapy	53
Service: Xenograft Implantation into the Articular Surface	54
Service: Transcutaneous Magnetic Stimulation Using a Focused Low-Frequency Electromagnetic Pulse of a Peripheral Nerve	55
Service: Real-Time Pressure-Sensing Epidural Guidance System	56
Service: Surface Mechanomyography (sMMG)	57
Service: Transcutaneous Auricular Neurostimulation	58
Service: Spinal Neurostimulator Electrode Array with an Integrated Neurostimulator	59
Service: Percutaneous Injection of a Calcium-Based Biodegradable Osteoconductive Material (Proximal Femur)	60
Service: Ultrasound-Based Radiofrequency Echographic Multi-Spectrometry (REMS) Bone-Density Studies and Fracture-Risk Assessments	61
Service: Intraoperative Therapeutic Electrical Stimulation (TES)	62
Service: Placement of a Bone Marrow Sampling Port	63
Service: Orthopedic Implant Movement Analysis	64
Service: Thumb Carpometacarpal (CMC) Arthroplasty	65
Service: Percutaneous Decompression	66

Service: Laminotomy (Hemilaminectomy) with Decompression of Nerve Root(s)	67
Service: Radiofrequency Ablation (RFA) of the Sacroiliac Joint	68
Service: Percutaneous Implantation of a Neurostimulator Electrode Array (Sacral Nerve)	69
Service: Unlisted Codes	70
References	72
Policy Revision History/Information	81

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.¹ The codes apply to a procedure or service that is (or has been) performed on a patient and any of the following²:

- 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 following¹:

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 be¹:

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.¹

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.³

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.⁴

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 ± 42.1 min) than with CAN (112.5 ± 31.3 min). Dislocation rates did not differ significantly between the control (1.6%) and experimental group (0%).⁵

The American Academy of Orthopaedic Surgeons (AAOS) (2023) published a clinical practice guideline for the surgical management of osteoarthritis of the knee.^{6,7} 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.⁸

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.⁹ 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.¹⁰

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.¹¹ 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.¹²

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.¹³

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.^{14,15}

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.¹⁶

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.¹⁷ 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.¹⁸

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.¹⁹

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.^{20,21}

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.²²

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.²³ 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).²⁴

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.²⁵

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.²⁶ 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.²⁷ The North American Spine Society (NASS) noted that facet joint injections may be indicated in certain cases.²⁸

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.²⁹

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.^{21,30}

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.³¹

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.³²

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.³³

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.³⁴

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.³⁵⁻³⁷ 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.^{38,39} 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.^{40,41}

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.⁴²

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.⁴³

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.⁴⁴

The American Academy of Orthopaedic Surgeons (AAOS) (2020) did not make a recommendation in its position statement for the Use of Emerging Biologic Treatment.⁴⁵ In the guideline for the management of glenohumeral joint osteoarthritis, the AAOS (2020) did not support the use of biologics.³⁷

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.⁴⁶

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.⁴⁷

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).⁴⁸

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.⁴⁹

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.⁵⁰

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.⁵¹

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.⁵²

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.⁵³

The International Radiostereometry Society (2024) published guidelines that supported RSA and computed tomography (CT)-RSA for migration measurements.⁵⁴

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.⁵⁵

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.⁵⁶

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.⁵⁷

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.⁵⁸

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.⁵⁹

King et al. (2018) also noted that current research lacked high-quality randomized controlled trials (RCTs), especially cellular content for musculoskeletal conditions.⁶⁰

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.⁶¹

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 ± 12.5 versus 8.9 ± 10.5 ; $P = 0.299$).⁶²

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.⁶³

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.⁶⁴

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.⁶⁵

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.⁶⁶

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.⁶⁷

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.⁶⁸

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.⁶⁹

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.⁷⁰

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.⁷¹

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.⁷²

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.

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.⁷⁰

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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.⁷²

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.⁷⁶

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.⁷⁷

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.⁷⁸

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.⁷⁹

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.⁸⁰

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.⁸¹

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.⁸²

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.⁸³

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).⁸⁴

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.⁸⁵

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.⁸⁶

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.⁸⁷

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.⁸⁸

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.⁸⁹

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).⁹⁰

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 cm² [IQR, 0.9 cm²-2.9 cm²]; $P = .0001$ versus 9.1 cm² [IQR, 4.2 cm²-11.7 cm²]). 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.⁹¹

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.⁹²

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.⁹³

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.⁹⁴

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.⁹⁵

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.⁹⁶

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.⁹⁷

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.⁹⁸

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.⁹⁹

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.¹⁰⁰

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.¹⁰¹

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.¹⁰²

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.¹⁰³

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.¹⁰⁴

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.¹⁰⁵

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.³⁵

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.¹⁰⁶

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.¹⁰⁷

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.¹⁰⁸

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.¹⁰⁹

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.¹¹⁰

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).¹¹¹

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 Oettl 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.¹¹²

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.¹¹³

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.¹¹⁴

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.¹¹⁵

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.¹¹⁶

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.¹¹⁷

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.¹¹⁸

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.¹¹⁹

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.¹²⁰

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.¹²¹

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.¹²²

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.¹²³

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.¹²⁴

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.¹²⁵

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.¹²⁶

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.¹²⁷

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.¹²⁸

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.¹²⁹

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.¹³⁰

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.¹³¹

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.¹³²

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.¹³³

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.¹³⁴

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.¹³⁵

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.¹³⁶

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.¹³⁷

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.¹³⁸

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.¹³⁹

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.¹⁴⁰

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.¹⁴¹

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.¹⁴²

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.¹⁴³

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]).¹⁴⁴

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.¹⁴⁵

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.¹⁴⁶

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.¹⁴⁷

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).¹⁴⁸

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.¹⁴⁸

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.¹⁴⁷

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.¹⁴⁹

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.¹⁵⁰

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.¹⁵¹

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.¹⁵²

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.¹⁵³

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.¹⁵⁴

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.¹⁵⁵

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.¹⁵⁶

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 ± 4.1 mm preoperative to 9.2 ± 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.¹⁵⁷

The AAOS (2019) guideline for the management of rotator cuff injuries did not specifically mention tuberopecty.³⁵

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.¹⁵⁸

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Policy Revision History/Information

Clinical Policy Version	Date	Review History
Version 1	04/09/2026	New Policy.



Cohere Medicare Advantage Policy – Ankle Arthrodesis

Clinical Guidelines for Medical Necessity Review

Version: 1
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Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Ankle Arthrodesis

Date of last literature review: 5/29/2024

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Ankle Arthrodesis	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	5
Level of Care Criteria	5
Procedure Codes (HCPCS/CPT)	5
Medical Evidence	6
References	8
Clinical Guideline Revision History/Information	10

Medical Necessity Criteria

Service: Ankle Arthrodesis

Benefit Category

Not applicable.

Recommended Clinical Approach

Ankle arthrodesis is most 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.¹⁻²

Medical Necessity Criteria

Indications

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

- ◆ The patient has **ANY** of the following:
 - Musculoskeletal congenital or acquired dysfunction⁴⁻⁵; **OR**
 - Increased osteoarthritis pain due to at least **ANY** of the following:
 - Infection-related to septic (infectious) or reactive arthritis; **OR**
 - Trauma⁶⁻⁷; **OR**
 - Chronic instability; **OR**
 - Avascular necrosis of the talus (AVN)⁸⁻⁹; **OR**
 - Inflammatory arthropathy; **OR**
 - Primary osteoarthritis; **OR**
 - Neuropathic arthropathy; **OR**
 - Lower extremity tumor resection; **OR**
 - Failed ankle open reduction and internal fixation (ORIF)¹⁰⁻¹²; **OR**
 - Failed total ankle arthroplasty (TAA)¹³; **AND**

- ◆ Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement.

Non-Indications

→ **Ankle arthrodesis** is not considered appropriate if **ANY** of the following is **TRUE**¹⁵:

- ◆ The patient has an active infection at the surgical site.

Level of Care Criteria

Inpatient or Outpatient.

Procedure Codes (HCPCS/CPT)

HCPCS/CPT Codes	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

Dutra et al. (2020) performed a systematic review to analyze the subtalar arthrodesis technique with respect to improvement of American Orthopedic Foot and Ankle Society (AOFAS) scores, union rate, and complications. A total of 180 feet were included with an average postoperative follow-up of 18 months; before and after AOFAS scores ranged from 44 ± 6 and 79 ± 4 . The review demonstrates a notable improvement of AOFAS scores postoperatively. Patients range in age from 37.8 to 50.9 (mean age 45.2) however there is no association between age and other variables. While there is no agreement regarding a preferred technique for subtalar arthrodesis, studies show excellent results utilizing arthroscopy.¹⁵

Daniels et al. (2014) conducted a prospective study on the surgical treatment for 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% (232 ankles). Preoperatively, mean Ankle Osteoarthritis Scale (AOS) scores were 53.4 points - scores were 33.6 points at follow-up (arthrodesis group) and 51.9 to 26.4 points (ankle replacement group).⁸

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 range of motion can put additional stress on adjacent joints thus the joints may also 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.¹

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 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.²

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Cohere Medicare Advantage Policy – Ankle Arthroplasty

Clinical Guidelines for Medical Necessity Review

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Ankle Arthroplasty

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Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service:	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	4
Level of Care Criteria	4
Procedure Codes (CPT/HCPCS)	5
Medical Evidence	6
References	7
Clinical Guideline Revision History/Information	8

Medical Necessity Criteria

Service: Ankle Arthroplasty

Benefit Category

Not applicable.

Recommended Clinical Approach

Ankle arthroplasty is a treatment for end-stage arthritis of the ankle using an FDA-approved artificial implant to replace a damaged ankle joint due to severe arthritis or post-traumatic arthritis. Physical therapy increases expected outcomes post-surgery including reduced pain and improved mobility, quality of life, and function.¹⁻²

Medical Necessity Criteria

Indications

→ **Ankle arthroplasty** is considered medically necessary when **ALL** of the following are **TRUE**¹⁻²⁰:

- ◆ The patient has not smoked in greater than or equal to the last 6 weeks; **AND**
- ◆ **ANY** of the following is **TRUE**:
 - Initial ankle arthroplasty is considered medically necessary when **ALL** of the following are **TRUE**:
 - Degenerative joint disease is present with **ALL** of the following:
 - ◆ The patient is experiencing **ANY** of the following:
 - Moderate or severe pain that limits activities of daily living; **OR**
 - Reduction of mobility in the affected ankle; **AND**
 - ◆ Imaging findings are consistent with osteoarthritis of the ankle; **AND**
 - ◆ Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months.
Documentation should include detailed

- evidence of the measures taken, rather than solely a physician's statement; **AND**
- ◆ The patient is not a candidate for joint preserving procedures; **OR**
- Revision ankle arthroplasty is considered medically necessary when previous surgery has failed due to **ANY** of the following:
 - Implant failure; **OR**
 - Infection; **OR**
 - Incorrect positioning; **OR**
 - Periprosthetic fracture; **OR**
 - Aseptic loosening.

Non-Indications

- **Ankle arthroplasty** is not considered appropriate for patients with **ANY** of the following^{16, 21-23}:
- ◆ Absence of the distal part of the fibula; **OR**
 - ◆ Infection at the surgical site (with or without osteomyelitis or osteitis); **OR**
 - ◆ Instability due to incompetent ligaments; **OR**
 - ◆ Charcot foot; **OR**
 - ◆ The patient has smoked within the last 6 weeks.²⁴

Level of Care Criteria

Inpatient or Outpatient.

Procedure Codes (HCPCS/CPT)

HCPCS/CPT Codes	Code Description
C1776	Joint device (implantable)
27700	Arthroplasty, ankle
27702	Arthroplasty, ankle; with implant (total ankle)
27703	Arthroplasty, ankle; revision, total ankle
27704	Removal of ankle implant

Medical Evidence

Norvell et al. (2019) discuss a multisite prospective cohort on treatment methods 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 at 24 month follow-up among patients who underwent total ankle arthroplasty as compared to patients who underwent ankle arthrodesis. The authors conclude that both procedures are effective however, arthroplasty yields greater improved outcomes.¹⁶

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 range of motion can put additional stress on adjacent joints thus the joints may also 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.¹

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Clinical Guideline Revision History/Information

Original Date: May 28, 2024		
Review History		



Cohere Medicare Advantage Policy – Bone Xenograft

Clinical Policy for Medical Necessity Review

Version: 4

Policy Number: CHP-103-4

Cohere Health UMC Approval Date: May 21, 2026

Last Annual Review: May 21, 2026

Revision: Not Applicable

Next Annual Review: May 21, 2027

Important Notices

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Policy Information:

Specialty Area: Musculoskeletal Care

Policy Name: Cohere Medicare Advantage Policy - Bone Xenograft

Policy Number: CHP-103-4

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Bone Xenograft	4
Related Centers for Medicare & Medicaid Services (CMS) Documents	4
Description	5
Medical Necessity Criteria	5
Indications	5
Non-Indications	5
Procedure Codes (CPT/HCPCS)	6
Clinical Harms and Benefits	6
Medical Evidence	7
References	9
Policy Revision History/Information	11

Medical Necessity Criteria

Service: Bone Xenograft

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Bone Xenograft* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 – Related CMS Policies (NCDs or LCDs)

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Description

Bone xenografts are 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 repair procedure to replace naturally occurring damage resulting from trauma or disease.²⁻⁵

Medical Necessity Criteria**Indications**

Bone xenograft implantation is considered appropriate if **ANY** of the following is **TRUE**⁶⁻¹⁰:

- 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.

Procedure Codes (CPT/HCPCS)

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

Clinical Harms and Benefits

Cohere Health Medicare Advantage determinations are made in accordance with CMS's decisioning requirements outlined in 42 CFR 422.101. When CMS guidelines are not fully established, Cohere Health develops publicly accessible medical necessity criteria based on widely accepted medical society guidelines and/or robust clinical literature. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.¹

Internal coverage criteria in *Cohere Medicare Advantage Policy - Bone Xenograft* are developed to provide the following:

- Emphasis on patient safety and standard of care aligned with the best available evidence.
- Appropriate allocation of healthcare resources, such as mitigating avoidable use of emergency services and additional treatments.

Medical Evidence

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.¹¹

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.¹²

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.¹³

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.²

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.¹⁴

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Policy Revision History/Information

Original Date: May 27, 2024		
Review History		
Version 2	06/10/2024	422.101 Disclaimer added
Version 3	05/22/2025	Annual Review. Reformatted policy to align with 2025 format. Removed the Harms and Benefits section. Literature review – Medical Evidence section updated to support non-coverage based on a lack of evidence (Rastegar et al. 2022; Elder et al 2018; Moyad et al 2011).
Version 3.1	07/01/2025	Added Harms and Benefits section.
Version 4	05/21/2026	Annual review. Reviewed and updated References section.



Cohere Medicare Advantage Policy – Bunionette Surgical Treatments

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 24, 2024

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Bunionette Surgical Treatments

Date of last literature review: 5/24/2024

Document last updated: 5/24/2024

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service:	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	4
Level of Care Criteria	4
Procedure Codes (CPT/HCPCS)	5
Medical Evidence	6
References	7
Clinical Guideline Revision History/Information	8

Medical Necessity Criteria

Service: Bunionette Surgical Treatments

Benefit Category

Not applicable.

Recommended Clinical Approach

Bunionette is a deformity of the fifth metatarsal bone at the base of the little toe where it meets the metatarsal head.¹ Bunionette is usually caused by constraining footwear. Women are more likely to develop this deformity.² It is sometimes referred to as a “tailor’s bunion”.³ There is a prominence of the fifth metatarsal head projecting laterally. Although the occurrence is not as common as bunions, they are similar in symptoms and causes. Initial treatment may include footwear modification, padding, or shaving of the callus. Surgical treatment may include resection of the lateral aspect of the fifth metatarsal head or an osteotomy.

Medical Necessity Criteria

Indications

→ **Bunionette surgical treatments** are considered appropriate if **ALL** of the following are **TRUE**¹⁻⁵:

- ◆ The patient has **ANY** of the following positive findings:
 - Pain and swelling at the site of the lateral prominence of the fifth metatarsal head; **OR**
 - Callus formation laterally; **AND**
- ◆ Failure of conservative management (e.g., shoe modification, splinting, padding, rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician’s statement; **AND**
- ◆ Radiographic confirmation of **ANY** of the following²:
 - Bony prominence of the 5th metatarsal head; **OR**
 - 4th/5th IM angle greater than 9 degrees; **OR**
 - 5th MTP angle greater than 15 degrees.

Non-Indications

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

- ◆ Inadequate blood supply that could prevent healing; **OR**
- ◆ The patient has not reached skeletal maturity; **OR**
- ◆ Presence of active infection, untreated infection at the surgical site (may be necessary for a diabetic ulcer correction).

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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

Thomas et al. (2009) developed a Clinical Practice Guideline for the American College of Foot and Ankle Surgeons for 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 potential for plantar plate pathology.⁵

In a 2019 systematic review, Cooper, Granadillo and Coughlin state that the literature is limited regarding the success of nonsurgical treatment of bunions 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 resolved 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 are increasing in popularity in recent years with positive study outcomes.⁴

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 in the surgical technique to be used and in the perioperative protocol.³

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Clinical Guideline Revision History/Information

Original Date: May 24, 2024		
Review History		



Cohere Medicare Advantage Policy – Cervical Spinal Fusion

Clinical Guidelines for Medical Necessity Review

Version: 3.1

Cohere Health UMC Approval Date: March 27, 2025

Last Annual Review: March 27, 2025

Revision: September 29, 2025

Next Annual Review: March 27, 2026

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Cervical Spinal Fusion

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Cervical Spinal Fusion	4
Related CMS Documents	4
Recommended Clinical Approach	4
Evaluation of Clinical Benefits and Potential Harms	5
Medical Necessity Criteria	6
Indications	6
Non-Indications	10
Level of Care Criteria	10
Procedure Codes (CPT/HCPCS)	11
Medical Evidence	15
References	16
Clinical Guideline Revision History/Information	19

Medical Necessity Criteria

Service: Cervical Spinal Fusion

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.¹⁻⁷

- [Local Coverage Determination \(LCD\). Cervical fusion \(L39741\)](#)
- [Local Coverage Determination \(LCD\). Cervical fusion \(L39758\)](#)
- [Local Coverage Determination \(LCD\). Cervical fusion \(L39770\)](#)
- [Local Coverage Determination \(LCD\). Cervical fusion \(L39773\)](#)
- [Local Coverage Determination \(LCD\). Cervical fusion \(L39788\)](#)
- [Local Coverage Determination \(LCD\). Cervical fusion \(L39793\)](#)
- [Local Coverage Determination \(LCD\). Cervical fusion \(L39799\)](#)
- [Billing and Coding: Cervical fusion \(A59608\)](#)
- [Billing and Coding: Cervical fusion \(A59624\)](#)
- [Billing and Coding: Cervical fusion \(A59632\)](#)
- [Billing and Coding: Cervical fusion \(A59634\)](#)
- [Billing and Coding: Cervical fusion \(A59664\)](#)
- [Billing and Coding: Cervical fusion \(A59668\)](#)
- [Billing and Coding: Cervical fusion \(A59674\)](#)
- [Billing and Coding: Epidural steroid injections for pain management \(A56651\)](#)
- [Billing and Coding: Epidural steroid injections for pain management \(A56681\)](#)

Recommended Clinical Approach

Cervical spinal fusion (arthrodesis) may be necessary for conditions such as fracture or dislocation, spinal deformities or stenosis, infection, tumors, and degenerative changes. Fusion can be achieved via an anterior, posterior, or combined anterior and posterior approach and may provide more rapid relief than non-surgical treatment options, preventing further spinal cord dysfunction and neurological deficits. Advanced imaging is recommended prior to the surgical intervention.⁸⁻⁹

Evaluation of Clinical Benefits and Potential Harms

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of cervical spinal fusion. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Inadequate management of cervical spinal conditions can lead to the progression of degenerative joint disease, worsening of pain, or the progression of cervical myelopathy with permanent nerve injury and reduced mobility. For patients being treated conservatively for with cervical stenosis, minor trauma with neck hyperextension can worsen or cause myelopathic symptoms.¹⁰ Progressive myelopathic patients who are denied surgery can have permanent neurologic deficits.
- While uncommon, the risks associated with surgical fusion procedures include infection, bleeding requiring transfusion, injury to neurovascular structures, the inherent risks of anesthesia, and the need for repeated or additional procedures due to adjacent segment disease, hardware failure, pseudoarthrosis, or infected hardware requiring removal and revision. Other risks may include permanent neurologic compromise, osteomyelitis, discitis, meningitis, gait disturbance, quadriparesis, bowel or bladder dysfunction, C5 palsy, injury to the vertebral and/or carotid arteries resulting in stroke, dislodgement of bone grafts resulting in airway compromise, and adjacent segment disease.¹⁰⁻¹¹ Bydon et al. report reoperation rates for cervical spine fusions as 9.9% at 2.4 years. However, if patients had follow-up periods of longer than 2 years, the reoperation rate increased to 18.3%.¹²
- Smoking is a known risk factor for increased surgical complications. Nunna et al. evaluated 17 studies representing a combined cohort of 37,897 patients and found that smoking was associated with one or more major adverse events in ≤ 2 level fusions.¹³ Berman et al. identified that smoking significantly increases the risk of pseudoarthrosis for patients undergoing both lumbar and cervical fusions. Other perioperative complications such as infection, adjacent segment disease, and dysphagia are also increased.¹⁴

- Adverse effects from delayed or denied treatment can worsen patient outcomes, such as increased risk of chronic pain and disability.
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Degenerative cervical stenosis is a leading cause of cervical myelopathy.¹⁰ This can result in chronic spinal cord compression and neurologic disability. Patient outcomes can be improved by ensuring timely and appropriate access to cervical spinal fusion for the management of various spinal conditions. Buttermann et al. found patient-reported success rates for cervical fusion between 85–95%.¹⁵
- Reduction in complications and adverse effects from unnecessary procedures.
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits and helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

Cervical spinal fusion is considered appropriate if **ALL** of the following are **TRUE**:

- Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**

- **ANY** of the following:
 - 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 use¹⁶; **AND**
- **ANY** of the following is **TRUE**:
 - The procedure is for the decompression of symptomatic cervical nerve root impingement or central stenosis and **ANY** of the following is **TRUE**¹⁻⁷:
 - Concomitant myelopathy or myeloradiculopathy and **ANY** of the following¹⁷:
 - Cervical myelopathy characterized by objective weakness and difficulty walking or an inability to walk; **OR**
 - Progression of neurological deficits during the trial of conservative treatment; **OR**
 - Isolated radiculopathy and **ANY** of the following:
 - Presenting with progressive motor weakness; **OR**
 - Significant motor weakness interfering with activities of daily living (ADLs); **OR**
 - Severe radicular pain defined as pain limiting the ability to perform ADLs and greater than or equal to 7/10 on visual analog scale (VAS) or equivalent scale and associated with confirmatory imaging (computed tomography, magnetic resonance imaging) and clinical-radiological correlation¹⁸; **OR**
 - **ALL** of the following are **TRUE**:
 - Persistent or recurrent moderate or severe arm pain (4 or more on the visual analog scale or equivalent) present for a minimum of 12 weeks within the current episode of arm pain with documented failure to respond to multimodal conservative management¹; **AND**
 - Nerve compression negatively impacts ADLs; **AND**
 - All other potential sources of pain/neurological deficit have been excluded; **AND**
 - Imaging (MRI or CT) including radiologic report with evidence of central, lateral recess or foraminal stenosis at the level corresponding with clinical myotome signs or symptoms and **ANY** of the following:

- Cervical degenerative disc disease as indicated by the presence of **ANY** of the following findings:
 - Herniated nucleus pulposus; **OR**
 - Narrowing of the intervertebral disc; **OR**
 - Disc osteophytes; **OR**
 - Facet hypertrophy; **OR**
 - Synovial cysts; **OR**
- Tumors (primary or metastatic); **OR**
- Post-infection radiographic findings; **OR**
- Spinal instability as defined by subluxation or translation more than 3.5 mm on static lateral views or dynamic radiographs or sagittal plane angulation of more than 11 degrees between adjacent segments^{1,19}; **OR**
- The procedure is for the decompression of symptomatic cervical canal stenosis and **ANY** of the following is **TRUE**:
 - Persistent or recurrent moderate or severe arm pain (4 or more on the visual analog scale or equivalent) present for a minimum of 12 weeks within the episode of arm pain with documented failure to respond to multimodal conservative management (as tolerated) in the absence of exceptional circumstances (below); **OR**
 - Nerve compression negatively impacts ADLs; **OR**
 - **ALL** of the following are **TRUE**:
 - Spastic gait, loss of manual dexterity, problems with sphincter control; **AND**
 - All other potential sources of pain/neurological deficit have been excluded; **AND**
 - Imaging (MRI or CT) including radiologic report with evidence of central stenosis at the level corresponding with clinical signs or symptoms and including **ANY** of the following:
 - Cervical degenerative disc disease as indicated by the presence **ANY** of the following findings:
 - Herniated nucleus pulposus; **OR**
 - Narrowing of the intervertebral disc; **OR**
 - Disc osteophytes; **OR**
 - Facet hypertrophy; **OR**
 - Synovial cysts; **OR**
 - Congenital short pedicles; **OR**
 - Tumors (primary or metastatic); **OR**

- Post-infection radiographic findings; **OR**
- Ossification of the posterior longitudinal ligament; **OR**
- Spinal instability defined by subluxation or translation more than 3.5 mm on static lateral views or dynamic radiographs or sagittal plane angulation of more than 11 degrees between adjacent segments^{1,19}; **OR**
- Cord compression with or without increased cord signal; **OR**
- The procedure is for the decompression or stabilization of the cervical spine and **ANY** of the following is **TRUE**:
 - The patient has traumatic injuries (fractures, dislocations, fracture-dislocations, traumatic ligamentous disruption) and **ANY** of the following:
 - Fractures or dislocations that are likely to result in spinal instability without neurological defects; **OR**
 - Fractures or dislocations associated with neurological defects at the affected level; **OR**
 - Instability is present; **OR**
 - Tumors involving the spine or spinal canal and **ANY** of the following is **TRUE**²⁰:
 - Malignant or benign tumors have caused instability or neurologic deficit where treatment of the tumor will likely require stabilization of the spine²¹; **OR**
 - Expected treatment of the tumor will likely cause spinal instability or neurologic deficits²²; **OR**
 - Instability is present; **OR**
 - Imaging or other studies (MRI, biopsy, bone aspirate) demonstrate infection involving the spine in the form of discitis, osteomyelitis, or epidural abscess and **ANY** of the following²³:
 - Imaging evidence of vertebral body destruction; **OR**
 - Documentation that spinal debridement will cause vertebral instability²³⁻²⁴; **OR**
 - Instability is present; **OR**
 - Deformities that include the cervical spine that include **ANY** of the following²⁰:
 - Cervical kyphosis associated with cord compression or atlantoaxial (C1-C2) subluxation or basilar invagination of the odontoid process into the foramen magnum; **OR**

- Subaxial (C2-T1) instability kyphosis, head drop syndrome, post-laminectomy deformity; **OR**
- Symptomatic pseudarthrosis (non-union of prior fusion) with radiological report (e.g., CT or MRI) documenting non-union of prior fusion (lack of bridging bone or abnormal motion at fused segment) after 12 months since fusion surgery or with radiographic evidence of hardware failure (fracture or displacement); **OR**
- Spinal instability after laminectomy; **OR**
- Rheumatoid arthritis with associated instability; **OR**
- Cervical degenerative spondylolisthesis with spinal instability (anterolisthesis/posterolisthesis) and substantial functional limitation is present such as severe neck pain, difficulty ambulating, decreased ability to perform ADLs or ability to maintain forward gaze; **OR**
- Progression of deformity.

Non-Indications

Cervical spinal fusion is not considered appropriate if **ANY** of the following is **TRUE**:

- Isolated chronic axial cervical pain¹¹⁷; **OR**
- Asymptomatic myelopathy¹; **OR**
- Loss of bladder or bowel function due to cervical canal cord compression.¹

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
22850	Arthrodesis, lateral extracavitary technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic
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

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Medical Evidence

Reitman et al. (2021), using the RAND/UCLA appropriateness method, developed recommendations for the use of cervical fusion for the treatment of degenerative conditions of the cervical spine. The criteria, produced and vetted by trained thought leaders in relevant fields, were used to determine the final ratings for the appropriateness (recommendations were deemed appropriate, uncertain, or rarely appropriate) of cervical fusion in 263 clinical scenarios. Of the 263 scenarios, 47 were rated as rarely appropriate, 66 as uncertain, and the remaining 150 as appropriate. The authors found symptom type to be most strongly correlated with the final appropriateness rating—myelopathy or radiculopathy were most strongly associated with an “appropriate” rating, while axial pain without stenosis was most strongly associated with a “rarely appropriate” rating.¹⁶

Gutman et al. (2018) conducted a meta-analysis of randomized controlled trials to determine whether anterior cervical discectomy and fusion (ACDF), cervical disc replacement (CDR), or minimally invasive posterior cervical foraminotomy (MI-PCF) provided the best outcomes for patients with symptomatic cervical radiculopathy. The analysis found insufficient evidence to determine which technique provided the longest-lasting symptom relief. However, the three surgical procedures were effective in treating cervical radicular symptoms, with MI-PCF having the lowest rate of adverse events and CDR requiring the lowest rate of secondary procedures.²³

Elsabeh and Abrahams (2024) developed a set of best practice guidelines for the postoperative spine care of patients undergoing cervical and lumbar fusion. The authors compared 1010 pre-best practices protocol retrospective controls (BPP) with 750 patients enrolled in BPP. Compared to their pre-BPP counterparts, the BPP group experienced 52% fewer adverse outcomes—a reduction by 45% and 62% for lumbar fusion and cervical fusion, respectively. The authors conclude that the standardization of postoperative spine care is necessary to create uniformly accepted models for value-based care in spine surgery.²⁴

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<https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=39758>
3. Centers for Medicare & Medicaid Services. Local Coverage Determination (LCD) (L39770). Cervical fusion. Revision Effective Date January 30, 2025.
<https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=39770>
4. Centers for Medicare & Medicaid Services. Local Coverage Determination (LCD) (L39773). Cervical fusion. Revision Effective Date January 10, 2025.
<https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=39741&ver=8&>
5. Centers for Medicare & Medicaid Services. Local Coverage Determination (LCD) (L39788). Cervical fusion. Revision Effective Date December 26, 2024.
<https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=39788&ver=9&>
6. Centers for Medicare & Medicaid Services. Local Coverage Determination (LCD) (L39793). Cervical fusion. Revision Effective Date March 7, 2025.
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March 7, 2025.

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Clinical Guideline Revision History/Information

Original Date: May 24, 2024		
Review History		
Version 2	06/10/2024	422.101 Disclaimer added
Version 3	03/27/2025	Annual review. Replaced previous Cervical Spinal Fusion MA policy covered indication section with the indications and non-indications from L39741 Cervical Fusion, which are identical to those in L39758, L39762, L39770, L39773, L39788, L39793, and L39799. Included the following nicotine language in the indications: ANY of the following: "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." Added the qualifier "including radiologic report" to the following indication: Imaging (MRI or CT) including radiologic report with evidence of central stenosis at the level corresponding with clinical signs or symptoms Added additional references (#17-25)

		Added additional citations to references with values (mm, degrees, etc.) Replaced Medical Evidence section with updated studies.
Version 3.1	09/29/2025	Per CMS update for L39788, link to LCD and reference updated. No change to criteria. Removed L39762 and A59645 from policy-retired by CMS 09/11/2025

Cohere Medicare Advantage Policy – Facet Injections

Clinical Policy for Medical Necessity Review

CHP-071-2 Version 2

Cohere UMC Approval Date: April 9, 2026

Last Annual Review: April 9, 2026

Revision Date: Not applicable

Next Annual Review: April 9, 2027

Specialty: Musculoskeletal Care

Population Type: Adult (18+ years old), Pediatric (0-17 years old)

Table of contents

Procedure Codes (CPT/HCPCS)	3
Important Notices	5
Service: Facet Injections - Description	6
Service: Pars Injection - Medical Necessity Criteria	7
Service: Facet Joint Synovial Cyst Injection, Aspiration, or Rupture - Medical Necessity Criteria	9
Clinical Harms and Benefits	12
Medical Evidence	13
References	14
Policy Revision History/Information	16

Procedure Codes (CPT/HCPCS)

Service: Pars Injection

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)
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

Service: Facet Joint Synovial Cyst Injection, Aspiration, or Rupture

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)
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

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: Facet Injections - Description

Facet injections are used for diagnostic and therapeutic purposes to address chronic pain in the lumbar, thoracic, and cervical spinal regions.⁹⁻¹³ The facet joints are the bridges between vertebrae, containing medial branch nerves that transmit pain signals from these joints. Facet injections (facet joint intraarticular injections, facet blocks, or medial branch blocks [MBBs]), are local anesthetic injections, administered with or without steroid medication, into the facet joints or near the medial branch nerves, and are performed under computed tomography (CT) or fluoroscopy guidance to ensure accurate needle placement and precise medication delivery.¹³

Service: Pars Injection - Medical Necessity Criteria

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Facet Injections* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 - Related CMS Policies (NCDs or LCDs)²⁻⁸

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	Facet Joint Interventions for Pain Management	L33930	Not fully established	- Cyst aspiration - Pars injections - Non-indications for injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	Facet Joint Interventions for Pain Management	L34892	Not fully established	- Cyst aspiration - Pars injections - Non-indications for injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	Facet Joint Interventions for Pain Management	L35936	Not fully established	- Cyst aspiration - Pars injections - Non-indications for injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	Facet Joint Interventions for Pain Management	L38765	Not fully established	- Cyst aspiration - Pars injections - Non-indications for injections at the

				atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	Facet Joint Interventions for Pain Management	L38773	Not fully established	- Cyst aspiration - Pars injections - Non-indications for injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	Facet Joint Interventions for Pain Management	L38801	Not fully established	- Cyst aspiration - Pars injections - Non-indications for injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	Facet Joint Interventions for Pain Management	L38841	Not fully established	- Cyst aspiration - Pars injections - Non-indications for injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Indications

- A **pars injection** is considered appropriate if **ALL** of the following are **TRUE**^{14,15}:
 - Injection is requested for a diagnostic purpose to confirm that the primary back pain generator is a fracture in the pars interarticularis or pars defect; **AND**
 - Pain greater than or equal to 4 out of 10 on a pain scale (e.g. Visual Analogue Scale [VAS], Numerical Rating Scale [NRS]); **AND**
 - Imaging studies confirm the presence of pars defect or a pars interarticularis fracture; **AND**
 - Diagnostic injections are limited to two injections.

Non-Indications

- A **facet Injection** is not considered appropriate if **ANY** of the following is **TRUE**:
 - Diagnostic or therapeutic facet injection at the same level as a previously successful radiofrequency ablation (RFA); **OR**
 - Facet joint injection performed with biologics; **OR**
 - Facet joint injection performed with ultrasound guidance; **OR**
 - Facet joint injection performed without computed tomography (CT) or fluoroscopic guidance; **OR**
 - Facet joint prolotherapy injections; **OR**
 - Injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)^{17,18}; **OR**
 - Other types of spine injections are performed on the same date of service, unless medical necessity is documented in the chart.

Service: Facet Joint Synovial Cyst Injection, Aspiration, or Rupture - Medical Necessity Criteria

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

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For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

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Table 1 - Related CMS Policies (NCDs or LCDs)²⁻⁸

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NCD	No NCD available	N/A	N/A	N/A
LCD	Facet Joint Interventions for Pain Management	L33930	Not fully established	- Cyst aspiration - Pars injections - Non-indications for injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	Facet Joint Interventions for Pain Management	L34892	Not fully established	- Cyst aspiration - Pars injections - Non-indications for injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	Facet Joint Interventions for Pain Management	L35936	Not fully established	- Cyst aspiration - Pars injections - Non-indications for injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	Facet Joint Interventions for Pain	L38765	Not fully established	- Cyst aspiration - Pars injections

	Management			- Non-indications for injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	Facet Joint Interventions for Pain Management	L38773	Not fully established	- Cyst aspiration - Pars injections - Non-indications for injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	Facet Joint Interventions for Pain Management	L38801	Not fully established	- Cyst aspiration - Pars injections - Non-indications for injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	Facet Joint Interventions for Pain Management	L38841	Not fully established	- Cyst aspiration - Pars injections - Non-indications for injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Indications

- A **facet joint synovial cyst injection, aspiration, or rupture** is considered appropriate if **ALL** of the following are **TRUE**¹⁶:
 - Pain greater than or equal to 4 out of 10 on a pain scale (e.g., Visual Analogue Scale [VAS], Numerical Rating Scale [NRS]); **AND**
 - Imaging studies confirm the presence of a facet joint synovial cyst; **AND**
 - **ANY** of the following:
 - Initial facet synovial cyst injection, aspiration, or rupture; **OR**
 - Repeat facet cyst aspiration or rupture with **ALL** of the following:
 - At least 50% improvement in pain for 3 months or more from prior injection; **AND**
 - Repeat aspiration is limited to once per individual cyst.

Non-Indications

- A **facet Injection** is not considered appropriate if **ANY** of the following is **TRUE**:
 - Diagnostic or therapeutic facet injection at the same level as a previously successful radiofrequency ablation (RFA); **OR**
 - Facet joint injection performed with biologics; **OR**
 - Facet joint injection performed with ultrasound guidance; **OR**
 - Facet joint injection performed without computed tomography (CT) or fluoroscopic guidance; **OR**
 - Facet joint prolotherapy injections; **OR**
 - Injections at the atlanto-occipital joint (C0-C1) or atlanto-axial joint (C1-C2)^{17,18}; **OR**

- Other types of spine injections are performed on the same date of service, unless medical necessity is documented in the chart.

Clinical Harms and Benefits

Cohere Health Medicare Advantage determinations are made in accordance with CMS's decisioning requirements outlined in 42 CFR 422.101. When CMS guidelines are not fully established, Cohere Health develops publicly accessible medical necessity criteria based on widely accepted medical society guidelines and/or robust clinical literature. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.¹

The potential clinical harms of using these criteria for facet injections may include:

- Adverse effects from delayed or denied treatment, including increased pain or decreased mobility, which may reduce the ability to perform activities of daily living. Facet injection delay may also result in increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.¹⁵
- Serious complications including injection-site pain, swelling, numbness, bleeding, bruising, worsening neck or back pain, epidural hematoma, and infection.^{9,14}
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria for facet injections may include:

- Improved patient outcomes through timely and appropriate access to facet injections. Careful patient selection confers the best outcomes and can prevent adverse events.^{14,15}
- Appropriate management of facet joint disorders such as facet joint syndrome, facet joint cyst, arthritis, spondylitis, spondylolisthesis, or trauma.^{14,15}
- Enhanced overall patient satisfaction and healthcare experience.

Medical Evidence

Manchikanti et al. (2024) performed a systematic review and meta-analysis on the effectiveness of facet joint nerve blocks for chronic spinal pain. A total of nine randomized controlled trials and 12 non-randomized studies were included in the analysis. Outcomes were deemed clinically significant if patients had a 50% reduction in pain and function. Based on the analysis of evidence, nearly half of the studies were found to have moderate evidence to support the use of facet joint nerve blocks for chronic spinal pain, with only three studies showing high evidence and clinical applicability.¹⁹

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 injections. This analysis found a high risk of incorrect needle placement using ultrasound-guided MMB and facet injections when fluoroscopy or computed tomography (CT) is used to confirm. Technical limitations of ultrasound guidance, such as poor penetration, and individual patient characteristics, such as high body mass index, may be associated with incorrect needle placement. Although efforts have been made to increase ultrasound guidance, CT or fluoroscopy guidance remains the standard for MBB and facet injections.²⁰

Kershen et al. (2018) performed a retrospective comparative study on the effectiveness of intra-articular injections, periarticular steroid injections, and anesthetic injections on pain scores across preinjection, immediate, and 1-week postinjection time points. 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. Statistically significant changes in pain from preinjection to immediate pain were found in the intra-articular and periarticular groups, but not the anesthetic group. There was no significant difference in immediate or 1-week pain relief between the 3 groups.¹⁴

Manchikanti et al. (2015) performed a systematic review of the clinical efficacy of therapeutic facet joint interventions for individuals with chronic spinal pain. A literature review from 1966 through 2015 yielded 21 randomized controlled 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.²¹

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Policy Revision History/Information

Clinical Policy Version	Date	Review History
Version 1	04/09/2025	Original Date.
Version 1.1	06/07/2025	Per CMS update 05/16/2025, L38773 updated to mirror other related published LCDs. Updated LCD link and reference.
Version 2	04/09/2026	Annual Review. Updated template, including addition of "Table 1 - Related CMS Policies" that describes Cohere definition of which LCDs/NCDs are not fully established. Removed indications covered by fully established LCDs. Removed retired L38803. Added 4 references.



Cohere Medicare Advantage Policy – Facet Joint Allograft Arthroplasty

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 29, 2024

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Facet Joint Allograft Arthroplasty

Date of last literature review: 5/29/2024

Document last updated: 5/29/2024

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service:	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	4
Level of Care Criteria	4
Procedure Codes (CPT/HCPCS)	5
Medical Evidence	6
References	7
Clinical Guideline Revision History/Information	8

Medical Necessity Criteria

Service: Facet Joint Allograft Arthroplasty

Benefit Category

Not applicable.

Recommended Clinical Approach

Intrafacet allograft arthroplasty has been proposed as an alternative technique to surgical fusion. It involves the placement of an allograft dowel made from bone (from the femur or tibia) and placed surgically or via a minimally invasive procedure. The allograft, which is processed by licensed tissue banks, which must be compliant with FDA requirements for tissue processing, is not subject to FDA 510K clearance and can be marketed. There are no clinical trials that address the efficacy and safety of these implants. The report on six cases did not indicate efficacy.¹

Intrafacet implants are an alternative to surgical fusion to treat facet joint pain (also referred to as lumbar spondylosis or zygapophyseal joint pain). The minimally invasive procedure involves placing an allograft dowel derived from the femur or tibia. The allograft must originate from an FDA-compliant, licensed tissue bank. No clinical trials address allograft implants' efficacy and safety.²

Medical Necessity Criteria

Indications

→ **Facet joint allograft arthroplasty** (e.g., facet joint allograft, NuFix™, TruFUSE® allograft) is considered appropriate if **ALL** of the following are **TRUE**³:

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

Non-Indications

→ **Facet joint allograft arthroplasty** (e.g., facet joint allograft, NuFix™, TruFUSE® allograft) is not considered appropriate if **ALL** of the following are **TRUE**:

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

Level of Care Criteria

None

Procedure Codes (HCPCS/CPT)

HCPCS/CPT Code	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
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

The **American Society of Interventional Pain Physicians (ASIPP)** published guidelines for *Facet Joint Interventions in the Management of Chronic Spinal Pain*. Citing weak evidence, the ASIPP does not recommend facet joint injections.⁴

The following organizations have published guidelines however, they do not address facet joint allograft injections:

- **American College of Occupational and Environmental Medicine (ACOEM)** – *Invasive Treatments for Low Back Disorders*⁵
- **American Society of Pain and Neuroscience (ASPN)** – *Interventional Treatments for Low Back Pain*⁶
- **American Society of Regional Anesthesia (ASRA)** – *Interventions for Cervical Spine (Facet) Joint Pain*⁷
- **American Society of Regional Anesthesia (ASRA)** – *Interventions for Lumbar Facet Joint Pain*⁸
- **North American Spine Society (NASS)** – *Diagnosis and Treatment of Low Back Pain*⁹

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Clinical Guideline Revision History/Information

Original Date: May 29, 2024		
Review History		



Cohere Medicare Advantage Policy – Genicular Nerve Procedures

Clinical Guidelines for Medical Necessity Review

Version: 2.1

Revision Date: March 18, 2025

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Genicular Nerve Procedures

Date of last literature review: 6/10/2024

Document last updated: 3/18/2025

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Genicular Nerve Procedures	4
Benefit Category	4
Recommended Clinical Approach	4
Evaluation of Clinical Benefits and Potential Harms	4
Medical Necessity Criteria	6
Indications	6
Non-Indications	7
Level of Care Criteria	8
Procedure Codes (CPT/HCPCS)	8
Medical Evidence	9
References	11
Clinical Guideline Revision History/Information	13

Medical Necessity Criteria

Service: Genicular Nerve Procedures

Benefit Category

Not applicable.

Recommended Clinical Approach

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.¹⁻¹² Genicular nerve ablation involves using RFA to treat pain in the knee in patients with chronic, symptomatic knee osteoarthritis (Kellgren–Lawrence Grade 3 or 4). The Kellgren–Lawrence scale for the radiographic classification of osteoarthritis is as follows¹³:

- **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).

Evaluation of Clinical Benefits and Potential Harms

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of genicular nerve procedures. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals

reduces the risks associated with unnecessary procedures, such as complications from surgery, adverse reactions, and infection.

The potential clinical harms of using these criteria may include:

- Adverse effects from delayed or denied treatment: Delays or denials in genicular nerve procedures can lead to increased symptoms and complications, particularly in patients with chronic knee pain. Shanahan et al. emphasized the importance of genicular nerve block (GNB) in providing pain relief for knee osteoarthritis, noting that the effect diminishes over time.⁶
- Risks with inappropriate surgical procedures: This includes infection, bleeding requiring a transfusion, injury to neurovascular structures, anesthetic risk, and the need for repeat or additional procedures due to implant failure or complications. Fonkoue et al. noted that revised targets for GNB lead to more immediate pain relief and a higher proportion of successful responders shortly after the intervention.¹⁰
- Increased healthcare costs and complications: This includes inappropriate use of emergency services and additional treatments. Güler et al. reported that ultrasound-guided GNB is more beneficial in reducing pain and improving functional and physical capacity compared to physical therapy, particularly with longer-lasting effects observed at 12 weeks.⁹

The clinical benefits of using these criteria include:

- Improved patient outcomes: Ensuring timely and appropriate access to genicular nerve procedures for the patients selected for best outcomes. The goal is to provide accurate diagnostics and effective treatment planning, reducing the risk of complications and improving overall patient health. Ferreira-Dos-Santos et al. emphasized that up-to-date guides utilizing ultrasound guidance and peripheral nerve stimulation can standardize technique and improve outcomes.⁵
- Enhanced diagnostic accuracy: This is crucial for complex knee conditions such as chronic symptomatic knee osteoarthritis. Shanahan et al. stated that GNB offers short-term pain relief for knee OA.⁶
- Reduction in complications and adverse effects: Proper use of GNB criteria helps to avoid unnecessary interventions and their associated risks, thus safeguarding patient health. Fonkoue et al. highlighted the

importance of revised targets for GNB to achieve more immediate pain relief and a higher proportion of successful responders.¹⁰

- Enhanced overall patient satisfaction: Ensuring that GNB is used appropriately leads to better patient outcomes and higher satisfaction rates due to effective treatment and reduced complications. According to Güler et al., ultrasound-guided GNB significantly reduces pain levels and improves functional and physical capacity compared to physical therapy.⁹

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

→ **Genicular nerve procedures** are considered appropriate if **ALL** of the following are **TRUE**¹⁴⁻¹⁵:

- ◆ Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- ◆ Persistent chronic pain with pain intensity of greater than 6/10 or documentation of pain causing functional disability; **AND**
- ◆ The patient has **ANY** of the following^{6,16}:
 - Chronic, symptomatic knee osteoarthritis lasting greater than three months (Kellgren-Lawrence grade 3 or 4) and documentation from an orthopedic surgeon stating that the patient is not a candidate for surgery; **OR**
 - Previous knee surgery and **ALL** of the following:

- Documentation from an orthopedic surgeon stating that the patient is not a candidate for additional surgical procedures; **AND**
- **ANY** of the following:
 - ◆ Continued functional limitations; **OR**
 - ◆ Continued moderate to severe pain; **AND**
- ◆ **ANY** of the following:
 - For **genicular nerve injections**, the patient meets **ANY** of the following:
 - For a diagnostic genicular nerve block, the patient has tried and failed to improve with **ANY** of the following:
 - ◆ Intraarticular knee corticosteroid injection if medically appropriate; **OR**
 - ◆ Intraarticular knee corticosteroid injection is contraindicated; **OR**
 - Genicular nerve block injection is for preemptive analgesia or postoperative pain relief associated with a surgical procedure; **OR**
 - For **genicular radiofrequency ablation (RFA)**, the patient has received a diagnostic genicular block under fluoroscopy or ultrasound guidance, and RFA is indicated by **ALL** of the following:
 - At least 50% improvement in symptoms for the duration of local anesthetic used for the diagnostic block; **AND**
 - The patient has an improvement of at least 50% for at least 4 to 6 months from previous RFA (same knee) **AND**
 - Frequency limitation indicated: no more than two genicular RFA per knee in rolling 12 months.

Non-Indications

- **Genicular nerve procedures** are not considered appropriate if **ANY** of the following is **TRUE**¹⁴:
- ◆ Active local or systemic infection; **OR**
 - ◆ Coagulopathy or bleeding diathesis; **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**
- ◆ Knee trauma or injury that is recent; **OR**
- ◆ Pregnancy; **OR**
- ◆ Recent knee trauma or injury; **OR**
- ◆ Osteoarthritis KL grade 0-2.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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 (OA). 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.⁶

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.⁹

Fonkoue et al. (2021) performed a double-blind RCT to compare the effectiveness of GNB using traditional anatomical targets (CT) vs 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 one-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.¹⁰

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Clinical Guideline Revision History/Information

Original Date: May 31, 2024		
Review History		
Version 2.1	3/18/2025	• Updated policy per CMS revisions for 10/3/2024 • Updated Effective date • Updated Links and Bookmarks



Cohere Medicare Advantage Policy – Great Toe Surgical Treatments

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 24, 2024

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Great Toe Surgical Treatments

Date of last literature review: 5/24/2024

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Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service:	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	4
Level of Care Criteria	4
Procedure Codes (CPT/HCPCS)	5
Medical Evidence	6
References	7
Clinical Guideline Revision History/Information	8

Medical Necessity Criteria

Service: Great Toe Surgical Treatments

Benefit Category

Not applicable.

Recommended Clinical Approach¹⁻⁹

Great toe surgical procedures are commonly performed and typically relate either to bunion deformity correction or to address 1st metatarsophalangeal joint osteoarthritis. Arthritis of the 1st MTP joint is often referred to as hallux rigidus and is the most common arthritic disease of the foot. Most patients complain of pain in the MTP joint of the great toe and associated loss of motion. Bone spurs can develop around the joint (mainly dorsally in addition to a loss of the articular surface cartilage. A bunion deformity is a complex deformity of the first ray that develops on the inside of the foot at the great toe metatarsophalangeal joint and is more common in females.¹ It involves valgus deviation of the proximal phalanx in combination with varus position of the first metatarsal. Initial treatment for these conditions is non-operative (shoewear modifications, orthotics, splints, cushions/pads, corticosteroid injections, NSAIDs).⁹ In cases that progress and remain symptomatic, surgical treatment is indicated. Surgical treatment can involve soft tissue procedures, osteotomies, cheilectomy, fusion, or joint replacement.^{2-3, 5-9}

Medical Necessity Criteria

Indications

→ **Great toe surgical treatments** are considered appropriate if **ANY** of the following is **TRUE**:

- ◆ The procedure is a **simple bunionectomy**, and **ALL** of the following are **TRUE**:
 - The patient has **ANY** of the following positive findings:
 - Pain at the first metatarsophalangeal (MTP) joint; **OR**
 - May have limited range of motion (ROM) at the first MTP joint; **OR**
 - Swelling of the first 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; **OR**
 - Malunion or non-union of previous surgery; **AND**
- Failure of conservative management (e.g., shoe modification, splinting, padding, rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- Radiographic confirmation (must be weight-bearing radiographs of the foot) of **ALL** of the following:
 - **ANY** of the following:
 - ◆ A hallux valgus angle (HVA) greater than 15°; **OR**
 - ◆ Intermetatarsal (IM) angle greater than 9°; **AND**
 - None to mild degenerative changes to the MTP joint; **OR**
- ◆ The procedure is a **bunionectomy with osteotomy**, and **ALL** of the following are **TRUE**:
 - The patient has **ANY** of the following positive findings:
 - Pain at the first metatarsophalangeal (MTP) joint; **OR**
 - May have limited range of motion (ROM) at the first MTP joint; **OR**
 - Swelling of the first MTP joint; **OR**
 - Difficulty walking due to pain in the MTP joints; **OR**
 - Lateral deviation of the great toe; **AND**
 - Failure of conservative management (e.g., shoe modification, splinting, padding, rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - Radiographic confirmation (must be weight-bearing radiographs of the foot) of **ANY** of the following:
 - Intermetatarsal angle (IMA) greater than 9°; **OR**
 - A hallux valgus angle (HVA) greater than 20°; **OR**
- ◆ The procedure is a **cheilectomy of the great toe MTP joint**, and **ALL** of the following are **TRUE**:

- The patient has **ANY** of the following positive findings:
 - Pain on the top of the first MTP joint; **OR**
 - Swelling and stiffness around the first toe metatarsophalangeal (MTP) joint; **OR**
 - Limited motion in the sagittal plane of the first MTP joint; **AND**
- Failure of conservative management (e.g., shoe modification, splinting, padding, rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- Radiographic findings of osteoarthritis of the first MTP joint (e.g., dorsal osteophyte, joint space narrowing, subchondral cysts); **OR**
- ◆ The procedure is an **arthrodesis of the great toe MTP joint**, and **ALL** of the following are **TRUE**:
 - The patient has **ANY** of the following positive findings:
 - Pain on the top of the first MTP joint; **OR**
 - Swelling and stiffness around the first toe metatarsophalangeal (MTP) joint; **OR**
 - Limited motion in the sagittal plane of the first MTP joint; **AND**
 - Failure of conservative management (e.g., shoe modification, splinting, padding, rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - Radiographic findings of advanced stages of osteoarthritis (e.g., dorsal osteophyte, joint space narrowing, subchondral cysts); **OR**
- ◆ The procedure is a **great toe MTP joint arthroplasty**, and **ALL** of the following are **TRUE**:
 - The patient has **ANY** of the following positive findings:
 - Pain on the top of the first MTP joint; **OR**

- Swelling and stiffness around the first toe metatarsophalangeal (MTP) joint; **OR**
- Limited motion in the sagittal plane of the first MTP joint; **AND**
- Failure of conservative management (e.g., shoe modification, splinting, padding, rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- Radiographic findings of advanced stages of osteoarthritis (e.g., dorsal osteophyte, joint space narrowing, subchondral cysts).

Non-Indications

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

- ◆ The patient has not reached skeletal maturity; **OR**
- ◆ Inadequate blood supply that would prevent healing; **OR**
- ◆ Presence of active, untreated infection at the surgical site (may be necessary for a diabetic ulcer correction).

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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
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

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).¹⁰

Ilfeld et al. (2021) performed a randomized controlled trial 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.¹¹

Daniels et al. (2019) conducted a prospective, randomized, double-blind, multicenter, placebo-controlled factorial clinical trial (ClinicalTrials.gov Identifier: NCT02689063). The study aimed to assess the effectiveness and safety of a combination of ibuprofen and acetaminophen (multimodal analgesia) administered intravenously for managing postoperative pain following bunionectomy. While oral fixed-dose combinations (FDCs) are available, the study focused on the IV route, which may be necessary in certain clinical situations. The study demonstrated that a combination of

ibuprofen and acetaminophen given intravenously provided superior pain relief compared to either medication alone, as evidenced by reduced opioid usage rates. The safety profile of the combination was similar to that of ibuprofen or acetaminophen alone. The study suggests that this combination therapy could effectively manage pain with fewer adverse events.¹²

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Cohere Medicare Advantage Policy – Hammertoe, Claw Toe, or Mallet Toe Surgical Treatment with or without Fusion

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 24, 2024

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Hammertoe, Claw Toe, or Mallet Toe Surgical Treatment with or without Fusion

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service:	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	4
Level of Care Criteria	4
Procedure Codes (CPT/HCPCS)	5
Medical Evidence	6
References	7
Clinical Guideline Revision History/Information	8

Medical Necessity Criteria

Service: Hammertoe, Claw Toe, or Mallet Toe Surgical Treatment with or without Fusion

Benefit Category

Not applicable

Recommended Clinical Approach

Surgery may be appropriate for a hammertoe, claw toe, or mallet toe deformity that is not alleviated by conservative management. Surgical treatment may consist of arthrodesis, arthroplasty, amputation, or tendon release/transfer. Surgical repair for cosmetic purposes only is not recommended.¹⁻³

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**:

- ◆ The patient has **ANY** of the following clinical presentations or positive findings:
 - Pain; **OR**
 - Difficulty walking; **OR**
 - The toe bends downwards or appears clawlike; **OR**
 - Balance may be affected; **OR**
 - Inability to flex or wiggle toes; **OR**
 - Callosities on toe; **OR**
 - Crossing over of lesser toes; **AND**
- ◆ The patient has **ANY** of the following⁵:
 - Bursitis; **OR**
 - Ankylosis of PIP or DIP; **OR**
 - Interdigital neuroma from the deformity; **OR**
 - Lateral MTP capsular tear caused by the deformity; **OR**
 - Subluxation or dislocation of the MTP joint from the deformity; **OR**
 - MTP plantar plate tear; **OR**

- Synovitis/capsulitis of the MTP joint; **OR**
 - Ulceration at the apex of the deformity; **AND**
- ◆ Failure of conservative management (e.g., shoe modification, splinting, padding, rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - ◆ Radiographic confirmation of hammertoe or mallet toe deformity³.

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**:

- ◆ There is poor circulation that could affect surgical healing; **OR**
- ◆ The patient has an active, uncontrolled infection (does not apply to chronic infections that are managed).

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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

Thomas et al. (2009) developed a Clinical Practice Guideline for the American College of Foot and Ankle Surgeons for 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 potential for plantar plate pathology.¹

Shirzad and colleagues performed a systematic review of the literature in 2011 regarding lesser toe deformities. The group stated that in mallet toe, good results had been reported with distal interphalangeal (DIP) joint resection arthroplasty or fusion with a 72% fusion rate in one study of 50 patients with 97% of patients reporting satisfactory pain relief. Flexor digitorum longus (FDL) tendon transfer study patients reported 90% satisfaction in correction of MTP joint instability or subluxation. Other studies in this area reported complete correction of subluxation in only 54% of patients, and in the largest published series of FDL tendon transfers, 34 of 38 patients were satisfied with the procedure. In proximal interphalangeal resection arthroplasty, fusion rates of 81 to 100% were reported, with additional studies reporting high success rates.²

Mizel and Yodlowski (1995) discuss disorders of the lesser metatarsophalangeal joints including, claw toe, hammer toe, plantar keratoses, Freiberg's infraction and cock-up fifth toe. Claw toe often results from hyperextension at the metatarsophalangeal joint with flexion deformities at the interphalangeal joints. Along with hammer toe, these conditions are usually acquired and progressive, often involving multiple toes. Freiberg's infraction patients present with pain at the metatarsophalangeal (MTP) joint that is usually exacerbated by activity. Magnetic resonance imaging results often appear as suspected avascular necrosis.³

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Cohere Medicare Advantage Policy – Hip Arthroplasty

Clinical Guidelines for Medical Necessity Review

Version: 3
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Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Hip Arthroplasty

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Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Hip Arthroplasty	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	4
Evaluation of Clinical Benefits and Potential Harms	5
Medical Necessity Criteria	6
Indications	6
Non-Indications	9
Level of Care Criteria	9
Procedure Codes (CPT/HCPCS)	9
Medical Evidence	11
References	13
Clinical Guideline Revision History/Information	18

Medical Necessity Criteria

Service: Hip Arthroplasty

Benefit Category

Not applicable.

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.¹⁻⁷

- [Local Coverage Determination. Total Joint Arthroplasty \(L36039\)](#)
- [Local Coverage Determination. Major Joint Replacement \(Hip and Knee\). \(L33618\)](#)
- [Local Coverage Determination. Total Joint Arthroplasty. \(L33456\)](#)
- [Local Coverage Determination. Lower Extremity Major Joint Replacement \(Hip and Knee\). \(L36007\)](#)
- [Local Coverage Determination. Total Joint Arthroplasty. \(L39911\)](#)
- [Local Coverage Determination. Total Hip Arthroplasty. \(L34163\)](#)
- [Local Coverage Determination. Total Hip Arthroplasty. \(L36573\)](#)

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.⁸⁻¹¹

Evaluation of Clinical Benefits and Potential Harms

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of hip arthroplasty procedures. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, adverse reactions, and infection.

The potential clinical harms of using these criteria may include:

- Adverse effects from delayed or denied treatment, such as increased pain and decreased mobility, can worsen patient outcomes. Hip replacement surgery has been shown to be a cost-effective treatment when nonsurgical means do not offer pain relief.⁸ Therefore, surgical delay may worsen their outcomes with ongoing persistent pain that could result in opioid dependence, emergency room visits, increased healthcare utilization, and decreased quality of life.⁸
- Risks with inappropriate surgical procedures include infection, bleeding requiring a transfusion, injury to neurovascular structures, anesthetic risk, and need for repeat or additional procedures due to implant failure, periprosthetic fracture, and ongoing pain. The average time to revision of a primary total hip arthroplasty is 8.51 years.¹² If a patient has an inappropriate initial total hip arthroplasty, this can lead to additional surgeries; therefore, careful patient selection is in the patient's best interest.
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The potential clinical benefits of using these criteria include:

- Improved patient outcomes by ensuring timely and appropriate access to hip arthroplasty. In general, careful patient selection confers the best outcomes and can prevent revision surgery.^{8,12} The most common indications for hip arthroplasty include pain that cannot be controlled by conservative therapy, functional deficit, and radiologic changes with evidence of joint degeneration.
- Reduction in complications or adverse effects from unnecessary procedures. Given the high rate of revision surgery, with the average time to revision of a primary total hip arthroplasty of only 8.51 years, it is crucial to avoid unnecessary surgery, as in the future, it may result in additional invasive management.¹²

- Appropriate management of orthopaedic trauma. Hip arthroplasty is indicated for adults with a femoral neck fracture. Patients with a hip fracture who have surgery performed within 24 to 48 hours of admission have better outcomes.⁹ This criteria allows approval for patients with an acute fracture of the femoral head or neck without requiring any additional treatment in order to expedite their treatment.
- Enhanced overall patient satisfaction with the healthcare experience and return of function. Positive patient-reported outcomes include reduced pain, improved function, and increased quality of life for individuals.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

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

- ◆ The procedure is a **total hip arthroplasty** and **ALL** of the following are **TRUE**:
 - **ANY** of the following is true:
 - If a bilateral total hip arthroplasty is performed, documentation of advanced joint disease must be present in both hips¹⁴⁻¹⁷; **OR**
 - Not applicable (i.e., single-hip arthroplasty); **AND**
 - **ANY** of the following is **TRUE**:
 - Advanced joint disease and **ALL** of the following¹⁴⁻¹⁷:
 - ◆ Pain or functional disability¹⁴⁻¹⁷; **AND**

- ◆ Failure of conservative management for greater than 3 months, including **ANY** of the following^{1,4-7}:
 - Rest or activity restriction as is reasonable^{2,4}; **OR**
 - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated^{2,4}; **OR**
 - Flexibility and muscle-strengthening exercises^{2,4}; **OR**
 - Physical therapy or physician-directed exercise program^{2,4}; **OR**
 - Assistive device use^{2,4}; **OR**
 - **ANY** of the following:
 - Corticosteroid injection if medically appropriate^{2,4}; **OR**
 - Documentation that injection is contraindicated^{2,4}; **OR**
 - Weight reduction as appropriate^{2,4}; **OR**
 - Documentation indicating that conservative, non-surgical management would be ineffective or counterproductive, including **ANY** of the following^{2,4}:
 - 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**
- ◆ **ANY** of the following:
 - Radiographic-supported evidence¹⁻⁷; **OR**
 - When conventional radiography is not adequate, magnetic resonance imaging

(MRI) or computed tomography (CT) (in situations when MRI is non-diagnostic or not able to be performed)-supported evidence (i.e., subchondral cysts, subchondral sclerosis, periarticular osteophytes, joint subluxation, joint space narrowing, avascular necrosis)¹⁻⁷; **OR**

- Malignancy of the joint involving the bones or soft tissues of the pelvis or proximal femur^{4,6-7}; **OR**
- Avascular necrosis^{4,6-7}; **OR**
- Femoral neck fracture^{4,6-7}; **OR**
- Non-union or malunion of the femoral neck^{4,6-7}; **OR**
- Acute fracture of the femoral head or neck that is untreatable with open reduction and internal fixation (ORIF)^{4,6-7}; **OR**
- Acetabular fracture^{4,6-7}; **OR**
- Nonunion or failure of prior hip fracture surgery^{4,6-7}; **OR**
- Malunion of acetabular or proximal femur fracture^{4,6-7}; **OR**

◆ The procedure is a **partial hip arthroplasty (hip**

hemiarthroplasty) and **ANY** of the following is **TRUE**:

- Displaced femoral head or neck fracture^{9,13-14}; **OR**
- Acute fracture of the femoral head or neck that is untreatable with open reduction and internal fixation (ORIF)⁹; **OR**
- Fracture dislocation of the hip untreatable with ORIF^{8,9}; **OR**
- Avascular necrosis of the femoral head^{8,9}; **OR**
- Non-union fracture of the femoral neck^{8,9}; **OR**
- Degenerative arthritis of the femoral head only in which the acetabulum does not need replacement^{8,9}; **OR**

◆ The procedure is a **replacement/revision of prior arthroplasty** and **ANY** of the following is **TRUE**:

- Surgical management of total joint infection¹⁴⁻⁷; **OR**
- Instability¹⁴⁻⁷; **OR**
- Loosening of the prosthesis¹⁴⁻⁷; **OR**
- Failure of the prosthesis¹⁴⁻⁷; **OR**
- Periprosthetic fracture¹⁴⁻⁷; **OR**
- Recurrent or irreducible hip dislocation¹⁴⁻⁷; **OR**
- Tissue or systemic reaction to implant¹⁴⁻⁷; **OR**

- Clinically significant leg-length inequality not amenable to conservative management^{1,4-7}; **OR**
- Progressive or substantial bone loss^{1,4-7}; **OR**
- Bearing surface wear resulting in symptomatic synovitis^{1,4-7}; **OR**
- Clinically significant audible noise.^{1,4-7}

Non-Indications

→ **Hip Arthroplasty** is not considered appropriate if **ANY** of the following is **TRUE**^{4-9,11}:

- ◆ Active infection of the hip joint⁴⁻⁷; **OR**
- ◆ Active systemic bacteremia⁴⁻⁷; **OR**
- ◆ Active urinary tract or dental infection⁴⁻⁷; **OR**
- ◆ Active skin infection (exception of recurrent cutaneous staph infections)⁴⁻⁷; **OR**
- ◆ Open wound within the planned surgical site of the hip; **OR**
- ◆ Rapidly progressive neurological disease, unless a concomitant displaced femoral neck fracture is present⁴⁻⁷; **OR**
- ◆ Skeletal immaturity¹⁶; **OR**
- ◆ Neuropathic/neurotrophic arthritis⁴⁻⁷; **OR**
- ◆ Absence or relative insufficiency of abductor musculature.⁴⁻⁷

Level of Care Criteria

Inpatient or outpatient.

Procedure Codes (CPT/HCPCS)

HCPCS/CPT Code	Code Description
26990	Drainage of abscess or blood accumulation in pelvis or hip joint
26991	Incision of infected fluid-filled sac (bursa) of pelvis or hip joint
27030	Incision of hip joint with drainage
27125	Hemiarthroplasty, hip, partial (eg, femoral stem prosthesis, bipolar arthroplasty)
27130	Replacement of thigh bone and hip joint prosthesis
27132	Conversion of previous replacement of thigh bone and hip

	joint prosthesis
27134	Revision of thigh bone and hip joint prosthesis
27137	Revision of hip joint prosthesis
27138	Revision of femoral component of total hip arthroplasty; Revision of femoral component of total hip arthroplasty with allograft
27236	Open treatment of femoral fracture, proximal end, neck, internal fixation or prosthetic replacement
27250	Treatment of hip dislocation
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.¹³

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.¹⁷

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.⁹ 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.⁹ *Management of Osteoarthritis of the Hip*, adopted in 2023, provides a robust set of clinical indications for surgical management of osteoarthritis, including hip arthroplasty.¹¹ 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

outcomes.¹¹ 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.¹⁸ 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.^{19,20} 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 (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.

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.²¹⁻²⁴ Other ongoing research interrogates the impacts that biological sex, race, and socioeconomic status have on hip arthroplasty utilization and outcomes.²⁶⁻³⁰

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Clinical Guideline Revision History/Information

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Review History		
Version 2	6/10/2024	422.101 Disclaimer added
Version 3	2/20/2025	Annual policy review & restructure: • Improved and expanded references. • Updated recommended clinical approach to the current format. • Medical evidence section and references updated to reflect the current literature and professional society guidelines. • Updated conservative care language to better reflect current standard language • Reordered indications to place total hip arthroplasty first • Conservative management criteria reorganized to better align with CMS guidance. • Fracture indications for THA expanded - not more stringent than CMS. Revision indications expanded - not more stringent than CMS. • Defined clinical scenarios where nonsurgical management would be harmful or ineffective - not more stringent than CMS. • Conservative care language modified to reflect non-opioid pain control. • Modified steroid injection language for clarity.



Cohere Medicare Advantage Policy – Hip Arthroscopy

Clinical Policy for Medical Necessity Review

Version: 4

Cohere Health UMC Approval Date: September 11, 2025

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Next Annual Review: April 17, 2026

Important Notices

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Policy Information:

Specialty Area: Musculoskeletal Care

Policy Name: Cohere Medicare Advantage Policy - Hip Arthroscopy

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Hip Arthroscopy	4
Related CMS Documents	4
Description	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	5
Definitions	5
Level of Care Criteria	5
Procedure Codes (CPT/HCPCS)	5
Evaluation of Clinical Harms and Benefits	6
Medical Evidence	7
References	8
Clinical Guideline Revision History/Information	9

Medical Necessity Criteria

Service: Hip Arthroscopy

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

- There are no applicable NCDs and/or LCDs for hip arthroscopy.

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.¹

Medical Necessity Criteria

Indications

Hip arthroscopy is considered appropriate if **ANY** of the following is **TRUE**¹:

- **Diagnostic hip arthroscopy** is considered appropriate if the patient has **ALL** of the following^{1,2}:
 - 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^{1,2}:
 - 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;
- **Arthroscopic labral debridement/repair** is considered appropriate with **ALL** of the following:
 - Labral tearing is visible on advanced imaging¹⁻⁴; **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^{1,2}:
 - **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^{1,2}:
 - 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^{1,2,5}:

- 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 impingement⁶; **OR**
 - Ischiofemoral impingement^{6,7}; **OR**
 - Residual impingement remains after first arthroscopy^{1,8}; **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:^{1,2}
 - Ligamentum teres disorder⁹; **OR**
 - Proximal hamstring injury indicated by **ANY** of the following⁹⁻¹¹:
 - 2-tendon injury with greater than 2 centimeters of retraction; **OR**
 - 3-tendon injury; **OR**
 - Acute infection/joint sepsis¹; **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 injury¹²; **OR**
 - **ALL** of the following:
 - **ANY** of the following:
 - Sciatic nerve entrapment¹³; **OR**
 - Psoas tendon disorder; **OR**
 - Atraumatic instability that is felt to be resolvable with arthroscopic capsular plication^{14,15}; **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**^{1,2}:

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

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

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; Surgical arthroscopy of hip with debridement of articular cartilage, abrasion arthroplasty, and resection of labrum; Surgical arthroscopy of hip with debridement of articular cartilage, and abrasion arthroplasty; 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; Surgical arthroscopy of hip with femoroplasty for cam lesion
29915	Surgical arthroscopy of hip with acetabuloplasty; Surgical arthroscopy of hip with acetabuloplasty for pincer lesion
29916	Surgical arthroscopy of hip with labral repair
29999	Unlisted arthroscopic procedure

Disclaimer: S codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.

Evaluation of Clinical Benefits and Potential Harms

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of hip arthroscopy procedures. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, adverse reactions, and infection.

The **clinical harms** of using these criteria may include:

- Inadequate management of hip conditions, potentially resulting in progressive degenerative joint disease, worsening pain, or impaired mobility. Decreased mobility can result in medical comorbidities. An undertreated, unstable hip labral tear can lead to early degenerative changes within the hip joint, leading to chronic pain and placing patients at risk for possible opioid dependency.¹
- Risks with inappropriate surgical procedures include infection, bleeding, injury to neurovascular structures, injury to the articular cartilage, implant (anchor) migration, anesthetic risk, and the need for repeat or additional procedures. Other risks include iatrogenic injury due to intraoperative traction, damage due to misplaced anchors, fluid extravasation, avascular necrosis of the femoral head, adhesions, fracture of the femoral head, and tendinitis. If a patient has an inappropriate hip arthroscopy, this can lead to additional complications, necessitating further invasive management; therefore, careful patient selection is in the patient's best interest.¹

- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The **clinical benefits** of using these criteria may include:

- Improved patient outcomes by ensuring timely and appropriate access to hip arthroscopy for managing those hip pathologies that are best treated through hip arthroscopy. Hip arthroscopy is minimally invasive, decreases the risk of neurovascular injury, and requires a shorter recovery time as compared to open procedures. By appropriately managing intra-articular abnormalities within the hip joint, further joint damage can be prevented or slowed.¹
- Reduction in adverse effects of non-indicated, unnecessary procedures. It is crucial to avoid unnecessary surgery, as in the future, it may result in additional invasive management.¹
- Appropriate management of acute orthopaedic trauma and acute infection. Early arthroscopic repair is indicated for adults with certain traumatic injuries and infections to optimize outcomes. These criteria allow for approval of patients with acute trauma or infection of the hip joint without requiring any additional treatment so as to expedite their treatment.¹
- Enhanced overall patient satisfaction with the healthcare experience and return of function. Positive patient-reported outcomes include reduced pain, improved function, and increased quality of life for individuals.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

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.¹⁶

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.¹⁷

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.¹²

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.¹⁸ 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.^{19,20} 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.²¹⁻²³

Other ongoing research interrogates the impacts that biological sex, race, and socioeconomic status have on hip arthroscopy utilization and outcomes. [24-33](#)

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Policy Revision History/Information

Original Date: May 22, 2024		
Review History		
Version 2	06/10/2024	422.101 Disclaimer added
Version 3	04/17/2025	Annual policy review & restructure: Adjusted Recommended Clinical Approach to current format Added indications for gluteal repair and hip bursectomy based on physician feedback Removed weight reduction requirement in accordance with professional society guidelines 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 Updated references Updated medical evidence section Conservative care language modified to reflect non-opioid pain control. Modified steroid injection language for clarity.

Version 4	09/11/2025	Specified that gluteal repair may be arthroscopic or open (indications did not change) Combined indication for pincer impingement and subspine impingement to reflect the current classification of these clinical entities



Cohere Medicare Advantage Policy – Hip Core Decompression With or Without Bone Grafting

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: March 20, 2025

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Hip Core Decompression With or Without Bone Grafting

Date of last literature review: 3/7/2025

Document last updated: 3/20/2025

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Hip Core Decompression With or Without Bone Grafting	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	4
Evaluation of Clinical Harms and Benefits	4
Medical Necessity Criteria	6
Indications	6
Non-Indications	6
Level of Care Criteria	7
Procedure Codes (CPT/HCPCS)	7
Medical Evidence	8
References	10
Clinical Guideline Revision History/Information	12

Medical Necessity Criteria

Service: Hip Core Decompression With or Without Bone Grafting

Benefit Category

Not applicable.

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

- There are no applicable NCDs and/or LCDs for hip core decompression with or without bone grafting.

Recommended Clinical Approach

Core decompression (CD) is a technique used to treat early (stage I-II) osteonecrosis of the hip. This minimally invasive surgery 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. The procedure is an effective method with an overall success rate of 65% up to 54 months follow-up, depending on the disease stage of the femoral head. Surgical treatment depends on the severity and location of the disease, which is determined by advanced imaging. CD is recommended for pre-collapse osteonecrosis if the lesion is less than 30% of the femoral head volume.^{1,2} Encouraging results are found when CD is performed for small lesions in the early (pre-collapse) stages of femoral head osteonecrosis.³ Bone grafting may provide mechanical support for the osteonecrotic lesion, and delivery of bone marrow cells into the necrotic femoral head in early-stage osteonecrosis lowers the conversion rate to total hip replacement.^{1,2} CD has limited efficacy in patients over the age of 50 or with an advanced stage of necrosis.⁴

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of hip core decompression with or without

bone grafting. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Surgical complications of hip core decompression that have been reported include intertrochanteric fracture, seromas and wound infections, femoral head fractures, deep vein thrombosis, and pulmonary embolus.⁵ The risk of complications may be lower in procedures with bone grafts.^{1,6,7}
- As with any surgical procedure, there is a risk of incision site infection as well as adverse reactions to anesthesia or other medications used.
- Inappropriate patient selection may increase the risk of treatment failure. For example, one study reported significant risk factors for treatment failure, including age over 50 years, corticosteroid intake, and advanced stage of necrosis.⁴
- Delays or denials in surgical treatment can increase the risk of femoral head collapse and potentially worsen other patient outcomes.^{8,9}
- Increased healthcare costs and complications from the inappropriate use of emergency services or additional treatments.

The clinical benefits of using these criteria include:

- Improved patient outcomes through timely and appropriate access to a hip core decompression procedure.
- Reduction in complications and adverse effects from unnecessary procedures, such as total hip replacement.^{8,10}
- Hip core decompression can reduce the risk of femoral head collapse, necessitating total hip replacement.⁸
- Addressing the underlying causes of hip core decompression can help prevent or delay the development of osteonecrosis.¹¹ Lifestyle factors such as a healthy diet and physical activity are essential for bone health.
- Timely performance of the hip core compression after symptom onset can maximize benefits, such as improved pain and mobility.⁸

- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

- **Hip core decompression with or without bone grafting** is considered medically appropriate if **ALL** of the following are **TRUE**^{7,12}:
- ◆ The patient has hip pain or functional disability^{8,12,13}; **AND**
 - ◆ Advanced imaging shows **ALL** of the following^{3,14}:
 - Osteonecrosis (stage I-II)¹⁵; **AND**
 - Minimal to no collapse of the femoral head (stage I-III).¹⁵

Non-Indications

- **Hip core decompression with or without bone grafting** is not considered medically appropriate if **ANY** of the following is **TRUE**³:
- ◆ Imaging shows moderate or severe arthritis; **OR**
 - ◆ Advanced imaging shows advanced stages of osteonecrosis (stage III-IV¹⁵); **OR**
 - ◆ The patient is over the age of 50.¹⁶

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
20933	Partial hemicortical intercalary allograft of bone
26992	Incision of bone cortex of pelvis; Incision of bone cortex of pelvis and hip joint; Incision of bone cortex of hip joint for bone abscess; Incision of bone cortex of hip joint for osteomyelitis; Incision of bone cortex of pelvis for bone abscess; Incision of bone cortex of pelvis for osteomyelitis; Incision of bone cortex of hip joint; Incision of bone cortex of pelvis and hip joint for bone abscess; Incision of bone cortex of pelvis and hip joint for osteomyelitis
27071	Deep craterization of wing of ilium; Deep partial excision of wing of ilium; Intramuscular craterization of wing of ilium; Subfascial craterization of wing of ilium; Deep craterization of greater trochanter of femur; Deep craterization of symphysis pubis; Deep partial excision of greater trochanter of femur; Deep partial excision of symphysis pubis; Intramuscular craterization of great trochanter of femur; Intramuscular craterization of symphysis pubis; Subfascial craterization of great trochanter of femur; Subfascial craterization of symphysis pubis
27170	Bone grafting
27299	Unlisted procedure on hip joint; Unlisted procedure on pelvis
S2325	Hip core decompression

Disclaimer: G, S, I, and N Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Medical Evidence

Kang et al (2018) performed a matched pair control study to compare the outcomes of core decompression (CD) alone vs CD combined with bone marrow mesenchymal stem cell (BMMSC) implantation for patients with osteonecrosis of the femoral head (ONFH). One hundred patients (106 hips) were analyzed; the CD+BMMSC group had a lower total hip replacement arthroplasty (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 group, up to 10 years 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.¹

Zalavras and Lieberman (2014) reviewed the literature for the American Academy of Orthopedic Surgeons (AAOS) regarding the evaluation and treatment of osteonecrosis of the femoral head. 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.³

Hu et al (2023) performed a network meta-analysis of 18 randomized controlled trials to analyze surgical interventions for ONFH. All trials were in non-traumatic ONFH, and most included outcomes for improvement in Harris hip score (HHS) or rate of conversion to THA. While 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.⁷

Andronic et al (2021) conducted a systematic review to evaluate 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.⁸

Osteonecrosis outcomes following CD treatment, including pain relief, conversion to THA, osteonecrosis stage, and lesion size, are “poor,” “fair,” or “good.”¹² While hip CD is often the first line of treatment, there is no consensus for the treatment of osteonecrosis of the femoral head to date.^{7,9,11,12,17} 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 as well as more well-designed, prospective, multicenter clinical trials for the treatment of hip CD.

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Clinical Guideline Revision History/Information

Original Date: March 20, 2025		
Review History		



Cohere Medicare Advantage Policy – Interphalangeal Joint Arthroplasty

Clinical Policy for Medical Necessity Review

Version: 3

Revision: May 29, 2025

Important Notices

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Policy Information:

Specialty Area: Musculoskeletal Care

Policy Name: Interphalangeal Joint Arthroplasty

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Interphalangeal Joint Arthroplasty	4
Related CMS Documents	4
Description	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	5
Level of Care Criteria	6
Procedure Codes (CPT/HCPCS)	6
Evaluation of Clinical Harms and Benefits	6
Medical Evidence	8
References	10
Clinical Guideline Revision History/Information	12

Medical Necessity Criteria

Service: Interphalangeal Joint Arthroplasty

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

- There are no applicable NCDs and/or LCDs for interphalangeal joint arthroplasty.

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

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^{4,5}:
 - 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 function and activities of daily living (ADLs)⁶; **AND**
- Radiographic confirmation with image report of advanced joint disease of the proximal interphalangeal (PIP) joint, including **ANY** of the following³:
 - Joint degeneration, such as PIP joint space narrowing or bone deformities⁷; **OR**
 - Osteophytes^{7,8}; **OR**
 - Subchondral sclerosis or cysts^{7,8}; **OR**
 - Fracture-dislocations or fracture-subluxations^{9,10}; **AND**
- **ANY** of the following:
 - Failure of conservative management for greater than 3 months, including **ALL** of the following^{6,11}:
 - 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 ADLs.^{9,10}

Non-Indications

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

- Persistent infection at the surgical site¹²; **OR**
- Skin defect or loss¹³; **OR**
- The procedure is a distal interphalangeal (DIP) joint arthroplasty with implant⁸; **OR**
- The procedure is an interphalangeal joint replacement of the thumb.¹⁴

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
26535	Arthroplasty, interphalangeal joint; each joint
26536	Arthroplasty, interphalangeal joint; with prosthetic implant, each joint

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established." When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.

The potential clinical harms of using these criteria for interphalangeal joint arthroplasty may include:

- Adverse effects from delayed or denied treatment, such as progression of joint disease and increased pain. Progression of hand osteoarthritis may lead to decreased grip strength, and progression of foot osteoarthritis may lead to decreased ambulation, both of which can interfere with activities of daily living.^{3,15}

The clinical benefits of using these criteria for interphalangeal joint arthroplasty may include:

- Improved patient selection, resulting in better long-term outcomes. Ideal candidates should generally not have excess weight (BMI greater than or equal to 40), diabetes mellitus, nicotine abuse, or alcohol abuse, as these patients may be the most at risk of infection at the surgical site.¹²
- Maintenance of rigorous patient safety standards aligned to best available evidence. For example, there is limited evidence that interphalangeal joint arthroplasty is appropriate for the thumb.¹⁴ Patients with osteoarthritis or other joint disorders of the thumb who undergo interphalangeal joint replacement are at risk for osteolysis, which may lead to loosening of the prosthesis, or bone formation around the joint, which may cause blockage.¹⁴

Medical Evidence

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.⁶

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.⁸

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.⁹

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fracture-dislocations: A systematic review of the literature. *J Hand Microsurg*. 2020;12(Suppl 1):S9–S15. doi:10.1055/s-0040-1713323

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Clinical Guideline Revision History/Information

Original Date: May 24, 2024		
Review History		
Version 2	6/10/2024	422.01 Disclaimer Added
Version 3	05/29/2025	Annual review. No changes to procedure codes. Updated standard language for nicotine and conservative care indications. Broadened "PIP joint space narrowing" to "Joint degeneration, such as PIP joint space narrowing or bone deformities." Added indication for "fracture-dislocations or fracture-subluxations." 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 ADLs." Removed non-indication: "Non-reconstructable or irreparable extensor or flexor tendon mechanism." Literature review showed that extensor mechanism dysfunction is a common reason for reoperation, but small joint replacements may still provide pain relief and maintain range of motion. Evaluation of extensor or flexor mechanisms should be left to the physician. Literature review – Description, Harms & Benefits, and Medical Evidence sections updated (including references).



Cohere Medicare Advantage Policy – Interspinous Process Devices with Open Decompression

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 31, 2024

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Interspinous Process Devices with Open Decompression

Date of last literature review: 5/29/2024

Document last updated: 5/31/2024

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service:	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	4
Level of Care Criteria	4
Procedure Codes (CPT/HCPCS)	5
Medical Evidence	6
References	7
Clinical Guideline Revision History/Information	8

Medical Necessity Criteria

Service: Interspinous Process Devices with Open Decompression

Benefit Category

Not applicable.

Recommended Clinical Approach

Designed as an alternative to lumbar fusion or decompression, interspinous spacers were developed to provide a less invasive surgical treatment for LSS with intermittent neurogenic claudication (NC).¹ 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 lumbar stenosis. 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.² The first of these devices was given US Food and Drug Administration (FDA) approval in 2005.³

Medical Necessity Criteria

Indications

→ **Interspinous process devices** are considered appropriate if **ALL** of the following are **TRUE**⁴⁻⁶:

- ◆ Skeletally mature patients suffering from pain, numbness, or cramping in the legs (intermittent neurogenic claudication) secondary to a diagnosis of mild to moderate degenerative lumbar spinal stenosis, with or without grade 1 spondylolisthesis; **AND**
- ◆ Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- ◆ Advanced imaging (MRI or CT) demonstrating **ALL** of the following:

- Evidence of mild to moderate (50% or less) central canal stenosis; **AND**
- The stenosis is confined to one or two lumbar levels.

Non-Indications

→ **Interspinous process devices** are not considered appropriate if **ANY** of the following are **TRUE**⁵⁻⁷:

- ◆ 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**
 - L5-S1 intervertebral space; **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, such as **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, defined as neural compression causing neurogenic bladder or bowel dysfunction; **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, defined as a body mass index (BMI) greater than 40.

Level of Care Criteria

Outpatient.

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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

The United States Food and Drug Administration (FDA) approved the VertiFlex Superior interspinous spacer in 2015, intended for moderate degenerative lumbar spinal stenosis.⁵

Deer et al. (2018) formulated several recommendations for minimally invasive spine treatment related to lumbar spinal stenosis. 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.⁴

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.¹

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 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.²

References

1. North American Spine Society (NASS). Coverage Policy Recommendations. Interspinous devices without fusion. <https://www.spine.org>. Published May 2014. Accessed August 14, 2023.
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Clinical Guideline Revision History/Information

Original Date: May 31, 2024		
Review History		



Cohere Medicare Advantage Policy – Interspinous Process Devices without Decompression

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 31, 2024

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Interspinous Process Devices without Decompression

Date of last literature review: 5/29/2024

Document last updated: 5/31/2024

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service:	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	4
Level of Care Criteria	4
Procedure Codes (CPT/HCPCS)	5
Medical Evidence	6
References	7
Clinical Guideline Revision History/Information	8

Medical Necessity Criteria

Service: Interspinous Process Devices without Decompression

Benefit Category

Not applicable.

Recommended Clinical Approach

Designed as an alternative to lumbar fusion or decompression, interspinous spacers were developed to provide a less invasive surgical treatment for LSS with intermittent neurogenic claudication (NC).¹ 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 lumbar stenosis. 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.² The first of these devices was given US Food and Drug Administration (FDA) approval in 2005.³

Medical Necessity Criteria

Indications

→ **Interspinous process devices without decompression** are considered appropriate if **ALL** of the following are **TRUE**⁴⁻⁷:

- ◆ Skeletally mature patients suffering from pain, numbness, or cramping in the legs (intermittent neurogenic claudication) secondary to a diagnosis of mild to moderate degenerative lumbar spinal stenosis, with or without grade 1 spondylolisthesis;

AND

- ◆ Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**

- Advanced imaging (MRI or CT) demonstrating **ALL** of the following:

- Evidence of mild to moderate (50% or less) central canal stenosis; **AND**
- The stenosis is confined to one or two lumbar levels.

Non-Indications

→ **Interspinous process devices** are not considered appropriate if **ANY** of the following is **TRUE**⁵⁻⁸:

- ◆ 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**
 - L5-S1 intervertebral space; **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, such as **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, defined as neural compression causing neurogenic bladder or bowel dysfunction; **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, defined as a body mass index (BMI) greater than 40.

Site of Service Criteria

None.

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
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

The United States Food and Drug Administration (FDA) approved the VertiFlex Superior interspinous spacer in 2015, intended for moderate degenerative lumbar spinal stenosis.⁵

Deer et al. (2018) formulated several recommendations for minimally invasive spine treatment related to lumbar spinal stenosis. 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.⁴

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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 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.⁷

References

1. North American Spine Society (NASS). Coverage Policy Recommendations. Interspinous devices without fusion. <https://www.spine.org>. Published May 2014. Accessed August 14, 2023.
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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
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;19(3):250–274.
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Clinical Guideline Revision History/Information

Original Date: May 31, 2024		
Review History		



Cohere Medicare Advantage Policy – Intradiscal Biacuplasty, Percutaneous Intradiscal Radiofrequency Thermocoagulation (PIRFT), or Intradiscal Electrothermal Therapy (IDET)

Clinical Policy for Medical Necessity Review

Version: 3

Revision: May 22, 2025

Important Notices

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Policy Information:

Specialty Area: Musculoskeletal Care

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

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Intradiscal Biacuplasty, Percutaneous Intradiscal Radiofrequency Thermocoagulation (PIRFT), or Intradiscal Electrothermal Therapy (IDET)	4
Related CMS Documents	4
Description	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	5
Level of Care Criteria	5
Procedure Codes (CPT/HCPCS)	5
Medical Evidence	7
References	9
Clinical Guideline Revision History/Information	11

Medical Necessity Criteria

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

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.¹

- [National Coverage Determination \(NCD\). Thermal intradiscal procedures \(TIPs\) \(150.11\).](#)¹
 - [National Coverage Analysis \(NCA\). Decision Memo: Thermal intradiscal procedures \(CAG-00387N\).](#)²

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.²⁻⁴

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

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

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.⁴

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.⁵

In 2009, the Centers for Medicare and Medicaid Services (CMS) issued a National Coverage Determination announcing noncoverage of all percutaneous intradiscal procedures that use radiofrequency or electrothermal energy to treat pain.¹ The list of specific noncovered procedures was extensive and included biacuplasty, PIRFT, and IDET. The accompanying decision memo cites a lack of clinical evidence supporting the use of these thermal intradiscal procedures for pain relief. Notably, clinical

trials have been inconsistent and have not shown any efficacy in critical patient groups, including those over the age of 60 years.²

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 were both 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.^{6,7} 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.⁸ 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).⁹ 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.¹⁰ 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.^{11,12}

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Clinical Guideline Revision History/Information

Original Date: MAY 24, 2024		
Review History		
Version 2	6/10/2024	422.101 Disclaimer Added
Version 3	05/22/2025	Annual review. Added in CPT code 62287. No changes to medical necessity criteria. Medical Evidence updated.



Cohere Medicare Advantage Policy – Intradiscal Biacuplasty, PIRFT, or IDET

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 24, 2024

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Intradiscal Biacuplasty, PIRFT, or IDET

Date of last literature review: 5/24/2024

Document last updated: 5/24/2024

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Intradiscal Biacuplasty, PIRFT, or IDET	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	4
Level of Care Criteria	4
Procedure Codes (CPT/HCPCS)	4
Medical Evidence	6
References	7
Clinical Guideline Revision History/Information	8

Medical Necessity Criteria

Service: Intradiscal Biacuplasty, PIRFT, or IDET

Benefit Category

Physician's services

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.¹

Recommended Clinical Approach

This service is clinically unproven and not medically necessary.

Medical Necessity Criteria

Indications

- **Intradiscal Biacuplasty, Percutaneous Intradiscal Radiofrequency Thermocoagulation (PIRFT), or Intradiscal Electrothermal Therapy (IDET)** are considered appropriate if **ALL** of the following are **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)** may not be appropriate if **ALL** of the following are **TRUE**:
- ◆ This procedure is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness.

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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
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 and update 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 controlled trials (RCTs) with positive results indicate 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 provide moderate evidence (Level III) for its use in this condition. Evidence supporting the use of discTRODE is limited, categorized as Level V. Percutaneous biacuplasty demonstrates strong evidence (Level I) for its effectiveness in treating chronic, refractory discogenic pain, suggesting it may be a first-line treatment option. In contrast, IDET shows moderate evidence (Level III) of efficacy for this condition. Evidence for the efficacy of discTRODE in treating chronic, refractory discogenic pain is limited (Level V).²

Lu et al. (2014) performed a systematic review of current non-surgical management for treating discogenic low back pain. Eleven RCTs focused on injections, ablative techniques, and traction therapy. Six clinical studies did not find significant differences between active therapies and sham/placebo treatments. Five studies that included intradiscal biacuplasty demonstrated significant differences in clinical outcomes favoring intervention over sham treatment. PIRFT did not demonstrate any advantages of the intervention over the 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), raises doubts about whether the conclusions from these RCTs are applicable to the broader patient population with discogenic pain. The authors conclude that additional research is needed to establish the efficacy of these treatments.³

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Clinical Guideline Revision History/Information

Original Date: May 24, 2024		
Review History		



Cohere Medicare Advantage Policy – Intrathecal Pain Pumps

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 31, 2024

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Intrathecal Pain Pumps

Date of last literature review: 5/29/2024

Document last updated: 5/31/2024

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Intrathecal Pain Pumps	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	7
Level of Care Criteria	8
Procedure Codes (CPT/HCPCS)	8
Medical Evidence	12
References	13
Clinical Guideline Revision History/Information	15

Medical Necessity Criteria

Service: Intrathecal Pain Pumps

Benefit Category

Durable medical equipment

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.¹

Recommended Clinical Approach

An intrathecal drug delivery system (IDDS) involves a surgically implanted pump that delivers medication to a patient with cancer-related pain, muscle spasticity, or chronic non-malignant pain. The IDD 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.

Medical Necessity Criteria

Indications

→ **Intrathecal pain pumps** to administer opiates, non-opiate analgesics, or anti-spasmodics for painful spasms are considered appropriate if

ANY of the following is **TRUE**:

◆ **Malignant cancer-related pain** as evidenced by **ANY** of the following¹⁻⁴:

● **ALL** of the following are **TRUE**:

- Presence of cancer-related pain; **AND**
- Documented life expectancy of three months or more; **AND**
- Oral, transdermal, or subcutaneous opioids failed or side effects are not tolerable⁵; **AND**
- **ANY** of the following is **TRUE**:
 - The request is for an intrathecal pain pump trial; **OR**
 - The request is for a permanent intrathecal pain pump, and the initial injection or infusion demonstrates adequate pain relief prior to

- permanent implantation, minimal side effects, and patient tolerance; **OR**
- Replacement of an intrathecal pain pump is medically necessary when **ANY** of the following is **TRUE**:
 - The device is not functioning, and the rationale is documented in the chart (e.g., pump interrogation report, imaging reports, pump flow study, end of battery life); **OR**
 - Device recalled by the manufacturer; **OR**
 - Notification received from the pump indicating an impending failure; **OR**
- ◆ **Chronic, non-malignant pain** as evidenced by **ANY** of the following⁹⁻¹¹:
 - **ALL** of the following are **TRUE**:
 - Severe chronic, intractable pain of non-malignant origin; **AND**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - The patient's history must indicate that he/she would not respond adequately to noninvasive methods of pain control, such as systemic opioids (oral, transdermal, or subcutaneous opioids failed or side effects are not tolerable)⁴; **AND**
 - **ANY** of the following:
 - The request is for an intrathecal pain pump trial; **OR**
 - The request is for a permanent intrathecal pain pump, and the initial injection or infusion demonstrates an improvement of at least 50% pain relief (including effects on the activities of daily living) prior to permanent implantation, minimal side effects, and patient tolerance; **OR**
 - Replacement of an intrathecal pain pump is medically necessary when **ANY** of the following is **TRUE**:

- The device is not functioning, and the rationale is documented in the chart (e.g., pump interrogation report, imaging reports, pump flow study, end of battery life); **OR**
- Device recalled by the manufacturer; **OR**
- Notification was received from the pump indicating an impending failure; **OR**

◆ **Painful spasticity** as evidenced by **ANY** of the following¹⁶⁻⁷:

- Chronic intractable painful spasticity in patients who have proven unresponsive to less invasive medical therapy as determined by **ANY** of the following criteria:
 - There must be at least a 6-week trial; the patient cannot be maintained on non-invasive methods of spasm control, such as oral anti-spasmodic drugs, either because these methods fail to control adequately the spasticity; **OR**
 - Non-invasive anti-spasmodics produce intolerable side effects; **OR**
- Replacement of an intrathecal pain pump is medically necessary when **ANY** of the following is **TRUE**:
 - The device is not functioning, and the rationale is documented in the chart (e.g., pump interrogation report, imaging reports, pump flow study, end of battery life); **OR**
 - Device recalled by the manufacturer; **OR**
 - Notification was received from the pump indicating an impending failure.

NOTE: Ziconotide ([Prialt®](#)) intrathecal infusion documentation must meet the Food and Drug Administration (FDA)-approved indication that the patient is intolerant of or refractory to other treatment, such as systemic analgesics, adjunctive therapies or intrathecal therapy morphine in the treatment of severe, chronic pain.

Non-Indications

→ **Intrathecal pain pumps** to administer opiates or non-opiate analgesics are **NOT** considered appropriate if **ANY** of the following is **TRUE**¹:

◆ **ANY** of the following contraindications:

- Presence of a known allergy or hypersensitivity to the drug being used (e.g., oral baclofen, morphine, etc.); **OR**
 - Patients with an active infection; **OR**
 - Whose body size is insufficient to support the weight and bulk of the device; **OR**
 - With other implanted programmable devices since crosstalk between devices may inadvertently change the prescription; **OR**
- ◆ Requests for a replacement or upgrade if the current device is functional despite newer technology being available.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Codes	Code Description
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)
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

Stearns et al. (2020) analyzed data from a prospective, long-term, multicenter registry of patients who received intrathecal drug delivery systems (IDDSs) for cancer-related pain. The Product Surveillance Registry (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 in the literature, including patients late stage cancer. Efficacy is reported in randomized controlled clinical trials (RCTs) yet overall utilization is low.⁴

Schultz et al. (2021) also analyzed data from the PSR. A total of 4646 patients were included who had chronic, non-malignant pain and were treated with a drug delivery system. Adverse events, product performance, and device replacement are discussed. Literature supports the use of drug delivery systems as an option in lieu of systemic opioids.¹⁰

Carvajal et al. (2018) performed an observational study of patients diagnosed with pancreatic cancer. Prevalence rates of pain range from 47% to 82%. Results from 11 years of data were analyzed based on the utilization of intrathecal drug delivery systems (IDDS). A total of 10,300 IDDS days were included. Prior to IDDS implantation severe pain was reported (median presurgical NRS, 8 [interquartile range, 7-9]) despite receiving a daily dose of oral morphine of 360 mg. With respect to 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, ≥ 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 complication were low and align with existing literature findings. The authors suggest that long-term IDDS are effective and safe for managing refractory pancreatic cancer pain.¹²

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Cohere Medicare Advantage Policy – Knee Arthroplasty

Clinical Guidelines for Medical Necessity Review

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

Important Notices

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Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Knee Arthroplasty	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	4
Evaluation of Clinical Benefits and Potential Harms	5
Medical Necessity Criteria	7
Indications	7
Non-Indications	12
Level of Care Criteria	12
Procedure Codes (CPT/HCPCS)	12
Medical Evidence	14
References	17
Clinical Guideline Revision History/Information	22

Medical Necessity Criteria

Service: Knee Arthroplasty

Benefit Category

Not applicable.

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.¹⁻⁷

- [Local Coverage Determination. Total Joint Arthroplasty \(L36039\)](#)
- [Local Coverage Determination. Major Joint Replacement \(Hip and Knee\). \(L33618\)](#)
- [Local Coverage Determination. Total Knee Arthroplasty. \(L36575\)](#)
- [Local Coverage Determination. Total Joint Arthroplasty. \(L33456\)](#)
- [Local Coverage Determination. Lower Extremity Major Joint Replacement \(Hip and Knee\). \(L36007\)](#)
- [Local Coverage Determination. Total Knee Arthroplasty. \(L36577\)](#)
- [Local Coverage Determination. Total Joint Arthroplasty. \(L39911\)](#)

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.⁸⁻¹⁰ 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.¹¹

Evaluation of Clinical Benefits and Potential Harms

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of knee arthroplasty procedures. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, adverse reactions, and infection.

The potential clinical harms of using these criteria may include:

- Adverse effects from delayed or denied treatment, such as increased pain and decreased mobility, can worsen patient outcomes. According to Katz, patients with knee osteoarthritis are more sedentary and have more comorbidities than those patients without knee arthritis, resulting in a 20% higher age-adjusted mortality.¹² Therefore, inadequate management of severe knee conditions due to inappropriate denials can result in comorbidities or mortality.
- Risks with inappropriate surgical procedures include infection, bleeding requiring a transfusion, injury to neurovascular structures, anesthetic risk, and need for repeat or additional procedures due to implant failure, periprosthetic fracture, and ongoing pain. Bin et al. reviewed the literature and reported that the risk for postoperative complications, revisions, and reoperations is highest with knee joint distraction and lowest with unicompartmental knee arthroplasty and total knee arthroplasty.¹³ Papakostidis et al. described the most serious adverse events (SAEs) for joint arthroplasty, including repeat operative intervention, death, coma, venous thromboembolism, deep infection,

cerebrovascular accident, or pneumonia.¹⁴ For total knee arthroplasty, the most common SAEs were venous thromboembolism and urinary complications.

- Increased healthcare costs and complications from the inappropriate use of emergency services, and any additional treatments.

The clinical benefits of using these criteria include:

- Improved patient outcomes by ensuring timely and appropriate access to knee arthroplasty. The goal of total knee arthroplasty is to alleviate pain and improve patient function and mobility.
- Unicompartmental knee arthroplasty is an option for patients with isolated unicompartmental arthritis due to osteonecrosis. It is not appropriate for arthritis in more than one compartment of the knee. Careful patient selection is needed to ensure optimal outcomes. According to Chalmers et al., the unicompartmental knee survivorship was 89% at 5 years and 76% at 10 years.¹⁵ The most common reason to convert to a total knee arthroplasty was progressive knee degeneration.
- Patellofemoral knee arthroplasty is a surgical option for isolated patellofemoral arthritis. The most common reason for failure is due to progression of knee arthritis requiring conversion to a total knee arthroplasty. Ennis et al. reported a 5 and 10-year knee survivorship of 91.7% and 83.3%, respectively, with an annual revision rate of 2.18%.¹⁶
- Enhanced overall patient satisfaction with the healthcare experience and return of function. Positive patient-reported outcomes include reduced pain, improved function, and increased quality of life for individuals.¹⁷

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

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

- ◆ The procedure is a **primary total knee arthroplasty**, and **ALL** of the following are **TRUE**¹⁻⁷:
 - **ANY** of the following is true:
 - If a bilateral total knee arthroplasty is performed, documentation of advanced joint disease must be present in both knees¹; **OR**
 - Not applicable (i.e., single-knee arthroplasty); **AND**
 - **ANY** of the following is **TRUE**:
 - Advanced joint disease and **ALL** of the following:
 - ◆ Pain or functional disability¹⁻³; **AND**
 - ◆ Failure of conservative management for greater than 3 months, including **ANY** of the following:
 - Rest or activity restriction as is reasonable²⁻⁴; **OR**
 - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated²⁻⁴; **OR**
 - Flexibility and muscle-strengthening exercises^{3,4}; **OR**
 - Physical therapy or physician-directed exercise program^{3,4}; **OR**
 - Assistive device use^{3,4}; **OR**
 - **ANY** of the following:
 - ◆ Corticosteroid injection if medically appropriate^{3,4}; **OR**
 - ◆ Documentation that injection is contraindicated^{3,4}; **OR**
 - Weight reduction as appropriate^{3,4}; **OR**
 - Documentation indicating that conservative, non-surgical management

would be ineffective or counterproductive based on **ANY** of the following^{3,4}:

- ◆ 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; **AND**
- ◆ **ANY** of the following:
 - Radiographic-supported evidence¹⁻³; **OR**
 - When conventional radiography is not adequate, magnetic resonance imaging (MRI) or computed tomography (CT) (in situations when MRI is non-diagnostic or not able to be performed)-supported evidence (i.e., subchondral cysts, subchondral sclerosis, periarticular osteophytes, joint subluxation, joint space narrowing, avascular necrosis)¹⁻³; **OR**
- Failure of a previous osteotomy^{1,2}; **OR**
- Distal femur fracture^{1,2}; **OR**
- Malignancy of **ANY** of the following:
 - ◆ Distal femur^{1,2}; **OR**
 - ◆ Proximal tibia^{1,2}; **OR**
 - ◆ Knee joint or adjacent soft tissues^{1,2}; **OR**
- Failure of previous unicompartmental knee replacement^{1,2}; **OR**
- Avascular necrosis of the knee^{1,2}; **OR**

- Proximal tibia fracture^{1,2}; **OR**
 - Bone-on-bone articulation³; **OR**
 - Intractable pain or significant disabling interference with activities of daily living (ADLs)³; **OR**
 - Severe deformity³; **OR**
- ◆ The procedure is a **repeat or revision TKA**, and **ANY** of the following is **TRUE**^{13,28-36}:
- Loosening of one or more components^{1,2}; **OR**
 - Fracture or mechanical failure of one or more components^{1,2}; **OR**
 - Infection; **OR**
 - Treatment of periprosthetic fracture of distal femur, proximal tibia, or patella^{1,2}; **OR**
 - Progressive or substantial periprosthetic bone loss^{1,2}; **OR**
 - Bearing surface wear leading to symptomatic synovitis^{1,2}; **OR**
 - Implant or knee misalignment^{1,2}; **OR**
 - Knee stiffness (arthrofibrosis)^{1,2}; **OR**
 - Tibiofemoral instability^{1,2}; **OR**
 - Extensor mechanism instability or disruption^{1,2}; **OR**
 - Dislocation of the knee joint^{1,2}; **OR**
- ◆ The procedure is a **unicompartmental knee arthroplasty**, and **ANY** of the following is **TRUE**^{11,18-22}:
- Unicompartmental knee degenerative joint disease and **ALL** of the following are **TRUE**:
 - Disabling pain and/or functional disability limits activities of daily living (ADLs)^{11,18-22}; **AND**
 - Failure of conservative management for greater than 3 months, including **ANY** of the following:
 - ◆ Rest or activity restriction as is reasonable²⁻⁴; **OR**
 - ◆ Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated²⁻⁴; **OR**
 - ◆ Flexibility and muscle-strengthening exercises^{3,4}; **OR**
 - ◆ Physical therapy or physician-directed exercise program^{3,4}; **OR**

- ◆ Assistive device use^{3,4}; **OR**
- ◆ **ANY** of the following:
 - Corticosteroid injection if medically appropriate^{3,4}; **OR**
 - Documentation that injection is contraindicated^{3,4}; **OR**
- ◆ Weight reduction as appropriate^{3,4}; **OR**
- ◆ Documentation indicating that conservative, non-surgical management would be ineffective or counterproductive based on **ANY** of the following^{3,4}:
 - 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**
- **ANY** of the following:
 - ◆ Radiographic-supported evidence in a single compartment¹⁻³; **OR**
 - ◆ When conventional radiography is not adequate, magnetic resonance imaging (MRI) or computed tomography (CT) (in situations when MRI is non-diagnostic or not able to be performed)-supported evidence (i.e., subchondral cysts, subchondral sclerosis, periarticular osteophytes, joint subluxation, joint space narrowing, avascular necrosis)¹⁻³; **AND**
- Documentation of attempted weight loss or weight loss counseling if BMI is greater than 40^{25,26}; **OR**
- Unicompartamental osteonecrosis¹¹; **OR**
- Unicompartamental post-traumatic joint destruction^{11,18-22}; **OR**
- Partial resection of the knee needed for treatment of malignancy^{11,18-22}; **OR**

- ◆ The procedure is **patellofemoral arthroplasty** and **ANY** of the following is **TRUE**^{11,16,18,22-23}:
 - Knee patellofemoral degenerative joint disease and **ALL** of the following are **TRUE**:
 - Isolated pain in the front of the knee^{11,18}; **AND**
 - Disabling pain and/or functional disability limit activities of daily living (ADLs)^{11,18}; **AND**
 - Failure of conservative management for greater than 3 months, including **ANY** of the following:
 - ◆ Rest or activity restriction as is reasonable²⁻⁴; **OR**
 - ◆ Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated²⁻⁴; **OR**
 - ◆ Flexibility and muscle-strengthening exercises^{3,4}; **OR**
 - ◆ Physical therapy or physician-directed exercise program^{3,4}; **OR**
 - ◆ Assistive device use^{3,4}; **OR**
 - ◆ **ANY** of the following:
 - Corticosteroid injection if medically appropriate^{3,4}; **OR**
 - Documentation that injection is contraindicated^{3,4}; **OR**
 - ◆ Weight reduction as appropriate^{3,4}; **OR**
 - ◆ Documentation indicating that conservative, non-surgical management would be ineffective or counterproductive based on **ANY** of the following^{3,4}:
 - 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**

- **ANY** of the following:
 - ◆ Radiographic-supported evidence in the patellofemoral compartment¹⁻³; **OR**
 - ◆ When conventional radiography is not adequate, magnetic resonance imaging (MRI) or computed tomography (CT) (in situations when MRI is non-diagnostic or not able to be performed)-supported evidence (i.e., subchondral cysts, subchondral sclerosis, periarticular osteophytes, joint subluxation, joint space narrowing, avascular necrosis)¹⁻³; **AND**
- Documentation of attempted weight loss or weight loss counseling if BMI is greater than 40^{25,26}; **OR**
- Patellofemoral post-traumatic destruction (i.e., history of patella fracture)^{11,18}; **OR**
- Dysplasia of the trochlea.^{11,18}

Non-Indications

→ **Knee arthroplasty** is not considered appropriate if **ANY** of the following is **TRUE**^{11,18,24}:

- ◆ Active infection of the knee joint¹²; **OR**
- ◆ Active systemic bacteremia¹²; **OR**
- ◆ Active urinary tract or dental infection¹²; **OR**
- ◆ Active skin infection (except recurrent cutaneous staph infections)¹²; **OR**
- ◆ Open wound within the planned surgical site of the knee¹²; **OR**
- ◆ Rapidly progressive neurological disease⁵.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Codes	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

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

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), bicompartmental 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.¹³

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.¹⁴

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.²⁴

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%.¹¹ 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 patients with obesity, with knee survivorship and satisfactory results generally lower than primary TKA.¹¹ 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%.¹¹

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.²⁷ 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.²⁷ 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.²⁷ Statements 1040 and 1184 discuss the impact of obesity on musculoskeletal conditions.^{25,26} 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.^{[25,26](#)} 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.^{[37-39,43-46](#)} Other ongoing research interrogates the impacts that biological sex, race, and socioeconomic status have on TKA utilization and outcomes.^{[41-42](#)}

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Clinical Guideline Revision History/Information

Original Date: May 29, 2024		
Review History		
Version 2	6/10/2024	422.101 Disclaimer added
Version 3	2/21/2025	Annual policy review & restructure: • Improved references • Separated out non-indications for readability. • Reordered UKA, patellofemoral arthroplasty indications for readability. • Removed note regarding exception to conservative management and instead absorbed that information into the appropriate indications. • Expanded medical evidence to reflect current literature. • Conservative management criteria reorganized to better align with CMS guidance. • UKA, PKA indications taken from current commercial version of policy as CMS is silent on these subservices. • Clarified language of indication for surgical management of infection to avoid confusion with non-indication of active infection. • Conservative care language standardized across TKA, UKA, PFA – not more stringent than CMS. Revision indications expanded – not more stringent than CMS. • Defined clinical scenarios where nonsurgical management may be harmful or ineffective – not more stringent than CMS. • Conservative care language modified to reflect non-opioid pain control. • Provided avenue to approve without conservative care for specific UKA, PKA scenarios.

		Modified steroid injection language for clarity.
Version 3.1	3/21/2025	- Updated policy per CMS revisions for 2/28/2025 - Updated Effective date - Updated Links and Bookmarks
Version 4	5/22/2025	Added CPT code: 27488. No associated criteria change. Removal of “disabling pain, functional disability” as revision indications due to concern for inappropriate approval.



Cohere Medicare Advantage Policy – Knee Arthroscopy

Clinical Guidelines for Medical Necessity Review

Version: 4
Revision Date: May 22, 2025

Important Notices

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Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Knee Arthroscopy	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	4
Evaluation of Clinical Harms and Benefits	4
Medical Necessity Criteria	6
Indications	6
Non-Indications	11
Level of Care Criteria	11
Procedure Codes (CPT/HCPCS)	12
Medical Evidence	15
References	18
Clinical Guideline Revision History/Information	24

Medical Necessity Criteria

Service: Knee Arthroscopy

Benefit Category

Incident to a physician's professional Service
Inpatient Hospital Services
Physicians' Services

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.¹

- [National Coverage Determination. Arthroscopic Lavage and Arthroscopic Debridement for the Osteoarthritic Knee. \(150.9\)](#)

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.²⁻⁸

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of knee arthroscopy. This process helps to

prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Inadequate management of knee pathology which may ultimately result in progression of degenerative joint disease, worsening pain, and impaired mobility. Decreased mobility is associated with medical comorbidities. Certain injuries, including acute meniscus tears, can lead to knee instability if untreated or undertreated, which may increase fall risk.²⁹
- Risks with inappropriate surgical procedures include infection, bleeding, injury to neurovascular structures, injury to the articular cartilage, implant (anchor) migration, anesthetic risk, and the need for repeat or additional procedures. Other risks include iatrogenic injury due to intraoperative traction, damage due to misplaced anchors, fluid extravasation, adhesions, and pyogenic arthritis. If a patient has an inappropriate knee arthroscopy, this can lead to additional complications, necessitating further invasive management; therefore, careful patient selection is in the patient's best interest.²⁹
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The potential clinical benefits of using these criteria include:

- Improved patient outcomes by ensuring timely and appropriate access to care for conditions that are optimally treated with knee arthroscopy. Adequate treatment of a meniscus tear, for example, can result in decreased pain, improved mobility, and prevention of early degenerative changes. Many patients are able to return to their prior level of activity and/or participation in sport after proper, timely treatment of acute knee injury or other pathology that is optimally managed arthroscopically.²⁹
- Reduction in adverse effects of non-indicated, unnecessary procedures. It is crucial to avoid unnecessary surgery, as in the future, it may result in additional invasive management. Knee arthroscopy can result in damage to the articular cartilage, thus worsening degenerative changes in the knee.²⁹

- Appropriate management of acute trauma and acute infection. Early arthroscopic intervention is indicated for specific traumatic injuries and infections with limited self-healing capacity in order to optimize patient outcomes. These criteria allow for approval of patients with certain acute trauma or infection of the knee joint without requiring any additional treatment so as to expedite their treatment.^{2,9}
- Enhanced overall patient satisfaction and healthcare experience. Positive patient-reported outcomes include reduced pain, better function, and improved quality of life.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

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**⁹⁻¹³:

- **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)¹⁴; **OR**
- Recurrent effusion¹⁵; **OR**
- Plica syndrome¹⁵; **OR**
- Hemophilic joint disease¹⁶; **OR**
- Lipoma arborescens (synovial lipomatosis)¹⁵; **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**⁹:
 - **ANY** of the following:
 - Infected joint (septic arthritis)^{10,11}; **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 cm²) with **ALL** of the following^{3,17,18}:
 - ◆ 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 following⁸:
 - ◆ 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**^{9,19-23}:
 - 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**^{24,25}:
 - 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**^{4,9}:
 - 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** [2,26-34](#):
 - **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**⁹:
 - 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**⁹:
 - 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**⁹:

- ◆ Osteoarthritis of the knee that is moderate or severe (or KL [Kellgren-Lawrence] grade III or grade IV)^{1,26,28,31}; **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

Disclaimer: S codes are non-covered per CMS guidelines due to their experimental or investigational nature.

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).²

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.³⁵

The Academy of Orthopaedic Surgeons (AAOS) has published four clinical guidelines to direct the management of patients with disease and damage to the knee that may be treated with arthroscopy. *Diagnosis and Treatment of Osteochondritis Dissecans* was published in 2023.²⁵ 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.³⁴ 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 2022.²⁰ 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.²⁰ *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.²⁶

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.³⁶ 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.^{37,38} 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.³⁷ 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.³⁸

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.³⁹⁻⁴⁵ Other ongoing research interrogates the impacts that biological sex, race, and socioeconomic status have on knee arthroscopy utilization and outcomes.⁴⁶⁻⁵⁴

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Clinical Guideline Revision History/Information

Original Date: May 24, 2024		
Review History		
Version 2	6/10/2024	422.101 Disclaimer added
Version 3	4/17/2025	Annual policy review & restructure: - Removed requirement for “young, active patient” for medial or lateral meniscal tears - Permitted osteochondritis dissecans to be visualized on plain radiograph per professional society guideline - Removed qualifier for “due to patient's occupation” on ACL reconstruction per professional society guidelines - Removed requirement for conservative management of greater than 3 months for ACL tear per professional society guidelines - Modified indications for meniscus allograft transplantation for clarity and to better reflect the referenced source - Removed redundant synovectomy indication for Lyme arthritis, which was already captured in prior indication - Removed redundant synovectomy indication for tenosynovial giant cell tumor, which was already captured in prior indication - Added indications for synovectomy: synovial hemangioma, degenerative synovitis, plica syndrome - Added an “out” for conservative management requirement for plica syndrome and PVNS - Adjusted chondral lesion size for optimal ACI treatment to reflect appropriate arthroscopic management versus open arthrotomy - Added minimum age of 12 for optimal ACI treatment

		• Removed requirement for grade III or grade IV osteochondral defect for optimal arthroscopic ACI treatment versus open arthrotomy • Moved debridement of articular cartilage lesion indication beneath existing indications for debridement • Removed hemangioma indication under diagnostic arthroscopy as this indication was better covered elsewhere • Added indication for arthroscopic management of certain fracture types • Removed BMI requirement for meniscus allograft as it is not an absolute contraindication • Consolidated all indications which require three months of conservative care for policy's ease of use. • Updated conservative care to current internal standard language. • Conservative care language modified to reflect non-opioid pain control. • Modified steroid injection language for clarity. • Added references. • Updated medical evidence section.
Version 4	5/22/2025	• Added CPT codes: 27405, 27407, 27409, 27427 • 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

Cohere Medicare Advantage Policy – Knee Manipulation Under Anesthesia (MUA)

Clinical Policy for Medical Necessity Review

CHP-047-2 Version 2

Cohere UMC Approval Date: March 10, 2026

Last Annual Review: March 10, 2026

Revision Date: Not applicable

Next Annual Review: March 10, 2027

Specialty: Musculoskeletal Care

Population Type: Adult (18+ years old), Pediatric (0-17 years old)

Table of contents

Procedure Codes (CPT/HCPCS)	3
Important Notices	4
Service: Knee Manipulation Under Anesthesia (MUA) - Description	5
Service: Knee Manipulation Under Anesthesia (MUA) - Medical Necessity Criteria	6
Evaluation of Clinical Harms and Benefits	8
Medical Evidence	9
References	10
Policy Revision History/Information	11

Procedure Codes (CPT/HCPCS)

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

Important Notices

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Service: Knee Manipulation Under Anesthesia (MUA) - Description

Knee manipulation under anesthesia (MUA) is a non-invasive technique utilized to treat scar tissue and stiffness (arthrofibrosis) following surgery, fracture, or anterior cruciate ligament repair. During MUA, scar tissue is broken up by applying gentle pressure to the leg while the patient is sedated, often in combination with a femoral nerve block.²⁻⁴ After the procedure, a continuous passive motion machine is employed to maintain range of motion and prevent adhesion.^{5,6}

Service: Knee Manipulation Under Anesthesia (MUA) - Medical Necessity Criteria

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Knee Manipulation Under Anesthesia (MUA)* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 - Related CMS Policies (NCDs or LCDs)

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	No LCD available	N/A	N/A	N/A
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Indications

- **Knee manipulation under anesthesia (MUA)** is considered appropriate if **ALL** of the following are **TRUE**:
 - Arthrofibrosis occurring after **ANY** of the following^{2,7,8}:
 - Acute knee injury; **OR**
 - Fracture; **OR**
 - Knee surgery; **OR**
 - Total knee arthroplasty; **AND**
 - Documented limited range of motion, either flexion or extension; **AND**
 - Failure of conservative management^A, 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 appropriate⁸; **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**:^{2,9-11}
 - Bone cancer; **OR**
 - Local infection; **OR**
 - Radiographically confirmed severe osteopenia.⁹

Definitions and Notes

^A 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.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.¹

The potential clinical harms of using these criteria for knee manipulation under anesthesia may include:

- Adverse effects from delayed or denied treatment. Akhtar et al. (2024) noted a high risk of revision (total knee arthroplasty) TKA when knee MUA was delayed.¹¹
- Continued knee stiffness. Range of motion (ROM) will not improve without treatment, which may include knee MUA. Scar tissue is also a concern following MUA.²⁻⁴
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria for knee manipulation under anesthesia may include:

- Improved patient selection for knee manipulation under anesthesia resulting in better long-term outcomes.
- Improved patient outcomes through timely and appropriate access to the procedure. Knee MUA may provide better patient outcomes, including increased ROM and pain management.^{2,3} Patients with early MUA demonstrated a mean gain of flexion almost double that of patients who reported later MUA. Delayed MUA also resulted in a high-risk of complications, including revision TKA.¹¹
- Reduction in complications and adverse effects from unnecessary procedures. Proper use of diagnostic criteria can prevent unnecessary surgeries and associated risks.
- Enhanced overall patient satisfaction and healthcare experience.

Medical Evidence

Akhtar et al. (2024) conducted a meta-analysis and systematic review of clinical outcomes of early manipulation under anesthesia (MUA) compared to delayed MUA for patients following total knee arthroplasty (TKA). Fourteen studies were included, representing 13,445 knees - 72.1% had early MUA and 27.8% had delayed MUA. Ten studies 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 showed greater pre-MUA knee flexion; however, both groups showed 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 approximately 50% greater than that of the delayed group.¹¹

Abdel et al. (2024) conducted a multicenter randomized clinical trial (RCT) to examine the effects of MUA combined with adjuvant anti-inflammatory medications and physical therapy on range of motion (ROM) outcomes. The 124 patients who had undergone TKAs developed stiffness following the procedure. 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 received MUA and physical therapy, the treatment group underwent MUA, physical therapy, and received one 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.¹²

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.¹³

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.¹⁴

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Policy Revision History/Information

Clinical Policy Version	Date	Review History
Version 1	03/20/2025	Original Date.
Version 2	03/10/2026	Annual Review. Updated template, including addition of "Table 1 - Related CMS Policies" that describes Cohere definition of which LCDs/NCDs are not fully established. Cohere MA criteria updated for internal alignment across policies. Reworded and rearranged indications for clarity and concision. Added reference (#2).



Cohere Medicare Advantage Policy – Knee Open or Arthroscopic Bursectomy

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: March 20, 2025

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Knee Open or Arthroscopic Bursectomy

Date of last literature review: 3/18/2025

Document last updated: 3/19/2025

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Knee Open or Arthroscopic Bursectomy	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	4
Evaluation of Clinical Harms and Benefits	4
Medical Necessity Criteria	6
Indications	6
Non-Indications	6
Level of Care Criteria	6
Procedure Codes (CPT/HCPCS)	6
Medical Evidence	7
References	9
Clinical Guideline Revision History/Information	10

Medical Necessity Criteria

Service: Knee Open or Arthroscopic Bursectomy

Benefit Category

Not applicable.

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.

Related CMS Documents

There are no applicable NCDs and/or LCDs for knee open or arthroscopic bursectomy. Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

Recommended Clinical Approach

Prepatellar bursitis, the inflammation of the bursa in front of the kneecap, may result from repetitive injury, acute trauma, or inflammatory conditions, including gout, syphilis, tuberculosis, or rheumatoid arthritis.¹ Often, prepatellar bursitis can be treated with aspiration, immobilization, and antibiotic therapy—in the case of septic bursitis—or with non-steroidal anti-inflammatory drugs for non-septic bursitis.¹² An open or endoscopic knee bursectomy may be necessary when conservative treatment fails. An endoscopic bursectomy is a minimally invasive surgery, typically performed as an outpatient procedure, in which a small incision is made to remove the bursa, resulting in restored or improved function and pain relief. After surgery, patients should forego vigorous physical exertion for 2 weeks.³

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of knee open or arthroscopic bursectomy. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- A retrospective analysis of 536 patients treated for traumatic lesions of the olecranon and prepatellar bursa found a 6.3% and 6.7% rate of infections and wound healing disturbances, respectively. Other, less common complications included keloid scar formation, hematoma, seroma, recurrent bursitis, and swelling.⁴
- Other studies have found that patients undergoing a knee bursectomy are at risk of surgical site morbidities, including sub-optimal healing of the incision, decreased sensation, atrophic skin changes, and tenderness or pain around the scarring.^{3,5-7}
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- A systematic review conducted by Brown et al. (2021) to establish the optimal management for prepatellar bursitis found that endoscopic knee bursectomy was associated with improved patient morbidity, restored range of motion, and reduced pain.⁷
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

→ A **knee open or arthroscopic bursectomy** is considered appropriate if **ANY** of the following is **TRUE**¹⁻⁸:

- ◆ Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **OR**
- ◆ Suspected septic prepatellar knee bursitis/infection when symptoms have not improved significantly within 36–48 hours after initiation of antibiotic treatment.⁹

Non-Indications

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

- ◆ There are no published contraindications.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
27340	Excision, prepatellar bursa

Disclaimer: G, S, I, and N Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

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.⁷

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.⁸

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.⁹

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Clinical Guideline Revision History/Information

Original Date: March 20, 2025		
Review History		



Cohere Medicare Advantage Policy – Kyphectomy

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 27, 2024

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Kyphectomy

Date of last literature review: 5/27/2024

Document last updated: 5/27/2024

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service:	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	4
Level of Care Criteria	4
Procedure Codes (CPT/HCPCS)	5
Medical Evidence	6
References	7
Clinical Guideline Revision History/Information	8

Medical Necessity Criteria

Service: Kyphectomy

Benefit Category

Not applicable.

Recommended Clinical Approach

Kyphectomy is effective for the correction of kyphosis. The three types of kyphosis include postural, Scheuermann's, and congenital. Nearly 50% of patients have a complication, notably skin and wound breakdown. Patients with myelomeningocele have an increased risk of complications compared to patients with idiopathic scoliosis. Over 40% of patients experience failure of fusion; infection rates are also over 40%.¹

Medical Necessity Criteria

Indications

→ **Kyphectomy** is considered appropriate if **ANY** of the following is **TRUE**¹⁻³:

◆ **Cervical spine deformity (including myelomeningocele, kyphosis, head-drop syndrome, post-laminectomy deformity)** when **ANY** of the following is **TRUE**²:

- The patient has a clinically significant deformity that makes the patient unable to maintain a forward gaze; **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;**OR**

◆ **Lumbar spine deformity (e.g., scoliosis restricted to the lumbar spine or a thoracolumbar deformity that ends in the lumbar spine)** when **ANY** of the following is **TRUE**³:

- Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented, including detailed evidence of the measures taken, rather than solely a physician's statement; **OR**

- The patient has a substantial functional limitation (e.g., severe back pain, difficulty ambulating, decreased ability to perform activities of daily living); **OR**
- **ANY** of the following is **TRUE**:
 - 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; **OR**
 - Sagittal or coronal imbalance of at least 5 cm is present (as measured on long-plate, standing radiographs of the entire spine); **OR**
- ◆ **Scheuermann's kyphosis** when **ANY** of the following is **TRUE**⁴:
 - Thoracic kyphosis greater than 75 degrees causing unacceptable deformity⁸; **OR**
 - Thoracic kyphosis greater than 75 degrees associated with pain⁸; **OR**
 - Functionally progressive curve; **OR**
 - Neurologic deficit/spinal cord compression; **OR**
 - Symptomatic kyphotic deformity that is unresponsive to documented conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids), including detailed evidence of the measures taken, rather than solely a physician's statement.

Non-Indications

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

- ◆ Cervical radiculopathy from isolated foraminal stenosis treated with a partial medial facetectomy/foraminotomy².

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

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 to repair an intact skin envelope to allow more comfort when sitting in a wheelchair. Complications of surgery for patients with myelomeningocele were analyzed, as well as if patients requiring an unplanned re-operation experienced additional complications compared to patients with a single procedure. Overall, 17 patients achieved seating balance and skin problems resolved; seven patients required re-operations and operations to treat late infection, pseudarthrosis, implant-related sacral pressure sore, and future extension of proximal fusion after growth.⁵

Samagh et al. (2011) performed a retrospective review of kyphectomy surgical outcomes in patients with myelomeningocele or lumbar kyphosis. These include surgical results, complications, and short-term and midterm outcomes. Preoperative, the mean extent of kyphosis among patients was 115.6° (range, 77–176°); correction was 13.0° (range, 0–32°) post-operatively, a reduction of 88.7%. Pre-operatively, patients could not lie supine; post-operatively, all patients could lie in this position.⁶

The **American Academy of Orthopaedic Surgeons (AAOS)** published a clinical practice guideline on the *Treatment of Symptomatic Osteoporotic Spinal Compression Fractures*. Recommendations are not provided for kyphectomy.⁷

The **North American Spine Society (NASS)** published two recommendations for *Cervical Fusion* and *Lumbar Fusion* which establish support for kyphectomy.²⁻³

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Clinical Guideline Revision History/Information

Original Date: May 27, 2024		
Review History		



Cohere Medicare Advantage Policy – Kyphoplasty and Vertebroplasty

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: April 17, 2025

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Guideline Information:

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

Guideline Name: Cohere Medicare Advantage Policy - Kyphoplasty and Vertebroplasty

Literature review current through: 04/17/2025

Document last updated: 04/17/2025

Type: ☒ Adult (18+ years of age) | ☒ Pediatric (0-17 years of age)

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Kyphoplasty and Vertebroplasty	4
Benefit Category	4
Recommended Clinical Approach	4
Evaluation of Clinical Harms and Benefits	5
Medical Necessity Criteria	6
Indications	6
Non-Indications	7
Level of Care Criteria	7
Procedure Codes (HCPCS/CPT)	7
Medical Evidence	9
References	10
Clinical Guideline Revision History/Information	13

Medical Necessity Criteria

Service: Kyphoplasty and Vertebroplasty

Benefit Category

Not applicable.

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.¹⁻²

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

- [Local Coverage Determination \(LCD\). Percutaneous vertebral augmentation \(PVA\) for vertebral compression fracture \(VCF\) \(L34976\)](#)
 - [Billing and Coding: Percutaneous vertebral augmentation \(PVA\) for osteoporotic vertebral compression fracture \(VCF\) \(A57872\)](#)
- [Local Coverage Determination \(LCD\). Percutaneous vertebral augmentation \(PVA\) for osteoporotic vertebral compression fracture \(VCF\) \(L33569\)](#)
 - [Billing and Coding: Percutaneous vertebral augmentation \(PVA\) for osteoporotic vertebral compression fracture \(VCF\) \(A56178\)](#)

Recommended Clinical Approach

Vertebral compression fractures (VCF) can cause debilitating back pain which may negatively impact activities of daily living. Treatments for VCF include conservative treatment (e.g., physical therapy, rest, medication management) and surgical procedures. Kyphoplasty and vertebroplasty are minimally invasive procedures that involve injecting bone cement into a vertebral body due to a VCF or a disease process that has replaced the normal bony architecture.³ Traditionally, vertebroplasty involves instilling bone cement directly into the vertebral body, while kyphoplasty involves creating several cavities with inflatable balloons, bone tamps, or osteotomes to attempt more controlled cement delivery and improved cement interdigitation.⁴ The cement provides stability to the damaged vertebra, which may result in reduced pain and improved function.

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of kyphoplasty and vertebroplasty. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Reduced life expectancy. Although rare, serious complications such as infection, loss of bone mass, deep venous thrombosis, and pulmonary embolism can occur.⁵
- Further progression of symptoms. Untreated VCF can lead to spinal deformities, increased pain scores, height loss, and nerve damage.⁶
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Improved function and reduction in pain scores.⁶
- Significant survival and morbidity benefits compared to nonsurgical intervention.⁷
- Reduction of narcotic use and reduced length of hospital stay.
- Reduction in complications and adverse effects from unnecessary procedures. Proper use of diagnostic criteria can prevent unnecessary surgeries and associated risks.
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

→ **Kyphoplasty and vertebroplasty** is considered appropriate if **ANY** of the following are **TRUE**:

- ◆ Painful osteoporotic vertebral fracture(s) as evidenced by **ALL** of the following¹⁻²:
 - Acute (less than 6 weeks) or subacute (6-12 weeks) osteoporotic VCF (T1 – L5), based on symptom onset, and documented by **ANY** of the following advanced imaging findings:
 - Bone marrow edema on MRI; **OR**
 - Bone scan/SPECT/CT uptake; **AND**
 - Symptomatic as evidenced by **ANY** of the following²:
 - Hospitalized with severe pain (Numeric Rating Scale [NRS] or Visual Analog Scale [VAS] pain score greater than or equal to 8)⁸⁻¹¹; **OR**
 - Non-hospitalized patients 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 following⁵:
 - ◆ Worsening pain noted; **OR**
 - ◆ Stable to improved pain (but NRS or VAS still greater than or equal to 5) as evidenced by **AT LEAST TWO** 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 (Roland Morris Disability Questionnaire [RDQ] of at least 17); **AND**

- Continuum of care is required and includes **ANY** of the following⁵:
 - Referral to evaluation of bone mineral density; **OR**
 - Referral to osteoporosis education for subsequent treatment as indicated; **OR**
 - Referral to an osteoporosis prevention/treatment program; **OR**
- ◆ The patient has **ANY** of the following:
 - Osteolytic vertebral metastasis or myeloma with severe back pain related to a destruction of the vertebral body, not involving the major part of the cortical bone¹; **OR**
 - Painful and/or aggressive vertebral hemangioma.²²⁻²⁵

Non-Indications

- **Kyphoplasty and vertebroplasty** are not indicated if **ANY** of the following is **TRUE**¹⁻²:
- ◆ Current back pain is not primarily due to the identified acute or subacute VCF(s)³⁻⁹; **OR**
 - ◆ Pregnancy; **OR**
 - ◆ Osteomyelitis, discitis, active systemic or surgical site infection^{3-6,10,12}; **OR**
- **Kyphoplasty and vertebroplasty** may not be indicated if **ANY** of the following is **TRUE**¹⁻²:
- ◆ Greater than three vertebral fractures per procedure; **OR**
 - ◆ Neurologic deficit; **OR**
 - ◆ Neural impingement; **OR**
 - ◆ Retropulsion/canal compromise; **OR**
 - ◆ Spinal instability; **OR**
 - ◆ Uncorrectable coagulopathy¹²; **OR**
 - ◆ Allergy to bone cement or opacification material.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
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

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Medical Evidence

Clark et al. (2016) performed a double-blind, randomized controlled trial (RCT) of vertebroplasty in patients with one or two osteoporotic vertebral fractures of less than 6 weeks in duration and Numeric Rated Scale (NRS) back pain greater than or equal to 7 out of 10. The goal of this RCT was to test whether vertebroplasty provides effective analgesia for patients with poorly controlled pain and osteoporotic spinal fractures. The primary outcome was the proportion of patients with NRS pain below 4 out of 10 at 14 days post-intervention. In total, 120 patients were enrolled. 61 patients were assigned to undergo vertebroplasty and 59 were assigned to the placebo group. Vertebroplasty was performed with the adequate vertebral fill technique and the placebo procedure with simulated vertebroplasty. 24 patients in the vertebroplasty group and 12 in the control group had an NRS pain score below 4 out of 10 at 14 days. In total, there were 2 serious adverse events in each group, related to the procedure (vertebroplasty group) and the fracture (placebo group). The authors concluded that vertebroplasty is superior to placebo intervention for pain reduction in patients with acute osteoporotic spinal fractures of less than 6 weeks in duration.⁹

Daher et al. (2023) conducted a meta-analysis in patients requiring treatment for osteoporotic VCF (OVCF). The goal of this analysis was to review qualified studies in order to compare balloon kyphoplasty to vertebroplasty in the management of OVCF. A total of 8 studies were included, which assessed clinical outcomes consisting of complications (cement leakage and adjacent level fractures), VAS pain scores, Oswestry disability index, kyphotic wedge angle, and vertebral body height restoration. PubMed, Cochrane, and Google Scholar were used for the literature review in accordance with PRISMA guidelines. In total, 619 subjects were involved in this study. 325 subjects were placed in the kyphoplasty group and 294 were placed in the vertebroplasty group. The authors concluded that kyphoplasty can increase postoperative vertebral body height and decrease the risk of cement leakage to a greater extent than vertebroplasty while the rest of the analyzed outcomes were not significantly different in either group.¹⁸

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Review History		



Cohere Medicare Advantage Policy – Lumbar Spinal Fusion

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Lumbar Spinal Fusion

Date of last literature review: 6/10/2024

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Lumbar Spinal Fusion	4
Benefit Category	4
Recommended Clinical Approach	4
Evaluation of Clinical Benefits and Potential Harms	4
Medical Necessity Criteria	6
Indications	6
Non-Indications	11
Level of Care Criteria	11
Procedure Codes (CPT/HCPCS)	11
Medical Evidence	16
References	17
Clinical Guideline Revision History/Information	20

Medical Necessity Criteria

Service: Lumbar Spinal Fusion

Benefit Category

Not applicable

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.¹ Advanced imaging is recommended prior to surgical intervention.

Evaluation of Clinical Benefits and Potential Harms

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of lumbar spinal fusion. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Inadequate management of spinal conditions, leading to complications like progression of degenerative joint disease, worsening lumbar condition resulting in cauda equina with potential permanent deficits, worsening low back pain, and reduced mobility. In addition, reduced mobility can result in medical comorbidities. Patients with chronic low back pain are at risk for opioid dependence. Low back conditions can be hard to diagnose. Dhillon reports that specific spinal pathology is seen in 1-2% of patients, radiculopathy from disc disease or stenosis occurs in 5% of patients, and non-specific low back pain occurs in 85-95% of patients.¹³ Therefore, diagnosis is crucial in order for good outcomes.
- Risks with inappropriate surgical procedures include infection, bleeding requiring a transfusion, injury to neurovascular structures, anesthetic risk and need for repeat or additional procedures due to adjacent

segment disease, hardware failure, pseudoarthrosis or infected hardware requiring removal and revision, and in some cases hospital readmission. According to Evanview et al, lumbar fusion is associated with a 19% rate of adverse events or complications.¹⁴ The most common complication is pseudoarthrosis which requires additional surgery. Ruffilli et al evaluated 392 patients who had a lumbar fusion and noted 7.9% of patients had a postoperative surgical site infection within 30 days of surgery.¹⁵ 3.8% of patients had proximal junction disease requiring revision surgery. Understanding the risk factors for these known complications is important for patient selection, and illustrates the need for surgical guidelines. They identified osteopenia and sarcopenia as the biggest risk factors. Marchbacher et al evaluated age and outcomes from lumbar fusion.¹⁶ They reviewed 707 surgical cases and found a lower complication rate in younger patients, 7% complications compared to 17.5% in the older population. Careful consideration of age-related conditions and risks is necessary.

- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Improved patient outcomes by ensuring timely and appropriate access to lumbar spinal fusion for managing various spinal conditions. Evanview et al noted that lumbar fusion for degenerative disc disease results in a clinically significant improvement of low back pain.¹⁴ Marchbacher et al noted better outcomes from lumbar fusion in younger patients.¹⁶ Mancuso et al reviewed 422 patients and found that pain relief was varied, two years after surgery 11% had no improvement in pain, 28% reported little to moderate improvement, 44% reported a lot of improvement, and 17% had complete improvement in pain.¹⁷ Setting patient's expectations for the expected surgical outcomes is important.
- Smoking is a known risk factor for increased surgical complications. Nunna et al evaluated 17 studies for a combined cohort of 37,897 patients and identified smoking was associated with one or more major adverse events in 2-level fusions.¹⁸ Berman et al identified that smoking significantly increases the risk of pseudoarthrosis for patients undergoing both lumbar and cervical fusions.¹⁹ In addition to nonunion, the other perioperative complications such as infection, adjacent segment disease, and dysphagia are also increased. They recommend

smoking cessation for 4 weeks prior to surgery, and consideration of additional support for fusion, such as BMPs.

- Reduction in complications and adverse effects from unnecessary procedures.
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

→ **Lumbar spinal fusion** is considered appropriate if **ALL** of the following is **TRUE**²:

◆ **ANY** of the following is **TRUE**:

- The patient has not smoked in greater than or equal to the last 6 weeks²; **OR**
- The patient is a smoker with an acute or traumatic lumbar spine condition; **AND**

◆ **ANY** of the following:

- When one or more levels are involved in a lumbar spinal fusion procedure, there must be medical record documentation of radiographic or clinical evidence of instability due to **ANY** of the following³:
 - Congenital deformities; **OR**
 - Trauma; **OR**
 - Fractures; **OR**
 - Chronic degenerative conditions; **OR**
 - Tumor; **OR**

- Infection; **OR**
- Erosive conditions; **OR**
- Space-occupying lesions; **OR**
- Iatrogenic causes, including expected instability as a consequence of another medically necessary spine procedure; **OR**
- The patient is experiencing symptomatic spinal deformity (in the absence of instability or neural compression) with **ALL** of the following:
 - The patient has a functional limitation in daily activities due to back pain or discomfort; **AND**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 12 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - Spinal deformity with **ANY** of the following:
 - ◆ Sagittal or coronal imbalance by at least 5 cm as measured on radiographic imaging of the entire spine; **OR**
 - ◆ Progression of the deformity by at least 10 degrees; **OR**
 - ◆ Scoliotic curvature of greater than 30 degrees; **OR**
- Revision surgery for pseudarthrosis following an initial spine surgery when **ALL** of the following are met:
 - The patient experienced reduced pain initially following surgery; **AND**
 - One year has elapsed since the prior surgery; **AND**
 - There is clear radiographic evidence of pseudoarthrosis; **AND**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 12 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**

- There is documentation in the patient's medical record that counseling has been provided that the procedure is being performed as a last resort treatment option, and that the patient agrees to undergo surgery following informed consent; **OR**
- Disc excision for decompression due to symptomatic compression of neural elements with medical record documentation of the neural elements for each level fused; **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**⁴⁻⁵:
 - The patient has signs or symptoms of a potential cauda equina syndrome and **ALL** of the following⁶:
 - ◆ 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 **lumbar stenosis** and **ALL** of the following are **TRUE**:
 - ◆ **ANY** of the following **lumbar stenosis symptoms**⁵:
 - 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 be 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 lumbar stenosis **physical examination** findings⁷⁻⁸:
 - 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 following⁹:
 - The patient fails to show significant improvement in pain or disability level due to symptoms, despite receiving conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 6 weeks. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **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; **OR**
- The patient has **lumbar radiculopathy** and **ALL** of the following are **TRUE**:
 - ◆ **ANY** of the following **lumbar radiculopathy** symptoms:
 - 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** findings⁷⁻⁸:
 - 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; **AND**
- ◆ **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 following⁹:
 - The patient fails to show significant improvement in pain or disability level due to symptoms, despite receiving conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 6 weeks. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **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**:

- ◆ The patient has smoked within the last 6 weeks (exception for acute or traumatic lumbar spine conditions).³

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
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, methyl methacrylate) 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 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.¹⁰

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.¹² 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.¹¹

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Cohere Medicare Advantage Policy – Miscellaneous Musculoskeletal Procedures

Clinical Policy for Medical Necessity Review

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Important Notices

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Policy Information:

Specialty Area: Musculoskeletal Care

Policy Name: Cohere Medicare Advantage Policy - Miscellaneous Musculoskeletal Procedures

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Miscellaneous Musculoskeletal Procedures	4
Related CMS Documents	4
Description	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	5
Level of Care Criteria	5
Procedure Codes (CPT/HCPCS)	5
Evaluation of Clinical Harms and Benefits	6
Medical Evidence	8
References	9
Clinical Guideline Revision History/Information	10

Medical Necessity Criteria

Service: Miscellaneous Musculoskeletal Procedures

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

- There are no applicable NCDs and/or LCDs for the following:
 - Capsulectomy or capsulotomy (hip) (CPT 27036)
 - Removal of a foreign body in the thigh or knee (CPT 27372)

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).¹⁻³

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 removal⁴; **OR**
- Pathological synovium or process requiring biopsy; **OR**
- Large, irreparable labral tears when there is a risk of postoperative anterior hip instability²; **OR**
- Iatrogenic instability.³

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)

CPT/HCPCS Code	Code Description
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

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.

The potential clinical harms of using these criteria for **capsulectomy or capsulotomy (hip)** may include:

- Adverse effects from delayed or denied treatment include progression of joint damage and continued pain. In addition, not performing the surgery can impede visualization of the anatomy while performing a procedure, such as hip arthroscopy.²

The clinical benefits of using these criteria for **capsulectomy or capsulotomy (hip)** may include:

- Improved patient selection results in better long-term outcomes, such as increased hip rotation and flexibility.⁶
- Appropriate allocation of healthcare resources at the individual beneficiary and population levels.

The potential clinical harms of using these criteria for **removal of a foreign body in the thigh or knee** may include:

- Adverse effects from delayed or denied treatment include increased pain and tissue damage. Depending on the location, the patient may have limited mobility and function. Infection (including cellulitis and soft tissue abscess) is the most common complication, while deeper infections such as osteomyelitis and septic arthritis, are less common.⁷

The clinical benefits of using these criteria for the **removal of a foreign body in the thigh or knee** may include:

- Improved patient selection results in better long-term outcomes, such as pain relief, improved function or mobility, and improved healing.
- Appropriate allocation of healthcare resources at the individual beneficiary and population levels.

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.² 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”.⁵ Abrams et al. (2015) analyzed hip rotation following capsulotomy, capsulectomy, and capsular repair. Notably, external rotation increased with capsulectomy and T-capsulotomy.⁶

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.⁷ 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.⁸ 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.⁹

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Cohere Medicare Advantage Policy – Open Meniscus Repair

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy – Open Meniscus Repair

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Open Meniscus Repair	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	4
Evaluation of Clinical Harms and Benefits	4
Medical Necessity Criteria	5
Indications	5
Non-Indications	6
Level of Care Criteria	6
Procedure Codes (CPT/HCPCS)	7
Medical Evidence	8
References	9
Clinical Guideline Revision History/Information	11

Medical Necessity Criteria

Service: Open Meniscus Repair

Benefit Category

Not applicable.

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.

Related CMS Documents

There are no applicable NCDs and/or LCDs for open meniscus repair. Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

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. While open meniscus repair has almost entirely been replaced by arthroscopic meniscus repair, open repair may still be useful or performed in combination with arthroscopic repair.¹⁻⁴

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of open meniscus repair. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Meniscus repair failure: A systematic review conducted by Nepple et al (2012) found that open meniscal repair failure rates after five or more years ranged between 16% and 29%.⁵ The review found that meniscus retears were particularly common among patients with unstable

knees.⁵ A study conducted by Dehaven et al (1995) documented an 18% retear rate among open meniscus repair patients 10 years after their surgery.⁶

- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Medium and long-term survival rates of repaired menisci: Muellner et al (1999) reviewed the clinical, radiographic, and magnetic resonance imaging results of open meniscal repairs after 12-year follow-ups. The authors found that the repaired menisci had a 91% long-term survival rate.⁷ A review of clinical outcomes in open meniscus repair of horizontal tears among young patients, conducted by Pujol et al (2012), found the procedure effective in young and active patients at midterm follow-up. These patients could return to contact sports after 6 months. However, for patients over 30, the functional results of the surgery declined significantly.⁸
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

→ **Open meniscus repair** is considered appropriate if **ANY** of the following is **TRUE**⁹⁻¹¹:

- ◆ Advanced imaging documentation of a meniscus tear in a young, active patient¹²; **OR**

- ◆ The tear is a recurrent tear or failed repair demonstrated on advanced imaging¹; **OR**
- ◆ **ALL** of the following are **TRUE**:
 - The patient has **ANY** of the following advanced imaging findings¹:
 - 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 tear¹; **AND**
 - The patient has **ANY** of the following:
 - Mechanical symptoms following an acute tear; **OR**
 - A chronic tear with **ALL** of the following:
 - ◆ Persistent mechanical symptoms; **AND**
 - ◆ Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement.

Non-Indications

- **Open meniscus repair** is not considered appropriate if **ANY** of the following is **TRUE**⁹:
- ◆ Degenerative tears; **OR**
 - ◆ Isolated meniscus repair in an unstable knee¹³⁻¹⁶; **OR**
 - ◆ Osteoarthritis of the knee in the same compartment (moderate, severe, or Kellgren Lawrence grade III or IV).^{17,18}

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
27403	Arthrotomy with meniscus repair, knee

Disclaimer: G, S, I, and N Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Medical Evidence

Kopf et al (2020) facilitated an expert consensus on the management of traumatic meniscus tears; using a formal consensus process, the group of surgeons and scientists determined that preservation of the meniscus should be the first line of treatment when possible. The experts also agreed that clinical and radiological long-term outcomes are worse after partial meniscectomy as opposed to meniscus preservation. Finally, it was concluded that meniscal repair types previously considered irreparable should be repaired, including older tears, tears in patients with obesity, long tears, etc.¹

Maffulli et al (2010) concluded that meniscal tissue should be preserved whenever possible in meniscal tears. When repair is not possible, partial meniscal resection would be indicated, as well as consideration of meniscal transplantation.²

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. Patients typically present with co-existing arthritis; treatment is based on severity. When there is early or minimal arthritis, root repair can restore meniscal function and improve symptoms.¹⁶

A systematic review 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.¹⁹

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Cohere Medicare Advantage Policy – Open Shoulder Surgical Procedures

Clinical Guidelines for Medical Necessity Review

Version: 1
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Important Notices

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Guideline Information:

Specialty Area: Diseases & Disorders of the Musculoskeletal System

Guideline Name: Open Shoulder Surgical Procedures

Date of last literature review: 3/26/2025

Document last updated: 3/26/2025

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Open Shoulder Surgical Procedures	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	4
Evaluation of Clinical Harms and Benefits	4
Medical Necessity Criteria	6
Indications	6
Non-Indications	9
Level of Care Criteria	9
Procedure Codes (CPT/HCPCS)	9
Medical Evidence	10
References	12
Clinical Guideline Revision History/Information	16

Medical Necessity Criteria

Service: Open Shoulder Surgical Procedures

Benefit Category

Not applicable.

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

- There are no applicable NCDs and/or LCDs for open-shoulder surgical procedures.

Recommended Clinical Approach

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. An incision is made to access the shoulder joint. 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 for coexisting shoulder pathologies and when there is a high likelihood that arthroscopic surgery will fail.¹

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of open-shoulder surgical procedures. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Infection. Surgical site infections are among the most serious postoperative complications after shoulder surgery. In surgery involving prosthetics, infections have been reported to occur in 0.2%–3.8% of patients postoperatively. However, continuous local antibiotic perfusion against surgical site infections has successfully preserved implants and grafts¹⁴.
- Other complications of rotator cuff repair. Deltoid detachment has an incidence of 8%¹⁷. Tendon re-tear in rotator cuff tear surgical procedures is also common. Routledge et al (2023) concluded that the risk of a postoperative re-tear is 14%.¹⁸
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Pain relief. Relief from shoulder pain is a primary goal of open-shoulder surgical procedures, which are more invasive and require a larger incision. However, these procedures have benefits such as the direct visualization of the joint, which allows for a broader range of procedures and better access to complex repairs. Large prosthetic materials require open shoulder surgery. Menekse (2024) found that patients treated with the open method reported slightly lower pain levels than those treated with arthroscopic procedures.¹⁹
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with minimizing potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

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**²:

- Acute rotator cuff tear with **ALL** of the following after an inciting event or injury:
 - **AT LEAST TWO** of the following positive diagnostic tests³⁻⁴:
 - ◆ Jobe/empty can test; **OR**
 - ◆ Belly-press test; **OR**
 - ◆ Lift-off/Gerber's test; **OR**
 - ◆ External rotation lag test; **OR**
 - ◆ Hornblower's sign; **OR**
 - ◆ Bear hug test; **OR**
 - ◆ Full can test; **OR**
 - ◆ Hawkins/Hawkins-Kennedy; **OR**
 - ◆ Painful arc test; **OR**
 - ◆ Neer/Neer impingement test; **OR**
 - ◆ Drop arm test; **AND**
 - Significantly impacted activities of daily living (ADLs); **AND**
 - Magnetic resonance imaging (MRI) or computed tomography (CT) 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 following⁵:
 - ◆ 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**
 - **AT LEAST TWO** positive diagnostic tests³⁻⁴:
 - ◆ Jobe/empty can test; **OR**
 - ◆ Belly-press test; **OR**

- ◆ Lift-off/Gerber's test; **OR**
- ◆ External rotation lag test; **OR**
- ◆ Hornblower's sign; **OR**
- ◆ Bear hug test; **OR**
- ◆ Full can test; **OR**
- ◆ Hawkins/Hawkins-Kennedy; **OR**
- ◆ Painful arc test; **OR**
- ◆ Neer/Neer impingement test; **OR**
- ◆ Drop arm test; **AND**
- Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken rather than solely a physician's statement; **AND**
- MRI or CT demonstrates **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 **TRUE⁶**:
 - MRI or CT demonstrates evidence of a recurrent rotator cuff tear; **OR**
 - Suspected postsurgical complication; **OR**
- ◆ **Open distal clavicle resection** is considered appropriate if **ALL** of the following are **TRUE⁷**:
 - The patient has significant pain and/or functional impairment that impacts ADLs; **AND**
 - Localized tenderness to palpation of the acromioclavicular (AC) joint and **ANY** of the following positive orthopedic tests on physical examination when compared to the non-involved side:
 - Cross-body adduction test; **OR**
 - Resisted AC joint extension test; **OR**
 - Neer impingement test; **OR**
 - Hawkins-Kennedy impingement test; **AND**
 - Failure of conservative management (e.g., rest, analgesics,

physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months.

Documentation should include detailed evidence of the measures taken rather than solely a physician's statement;

AND

- Plain radiographs demonstrate **ANY** of the following findings consistent with pathology in the subacromial space or at the AC joint⁸:
 - 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**⁹:

- The procedure coincides with the indicated repair of a rotator cuff injury; **OR**
- There is a need for decompression after a full-thickness rotator cuff tear¹⁰; **OR**
- The patient has subacromial impingement syndrome, including **ALL** of the following⁸:
 - Significant pain and/or functional impairment that impacts ADLs; **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 (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken rather than solely a physician's statement; **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.

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 osteoarthritis¹¹; **OR**
- ◆ Use of subacromial balloon spacer to treat irreparable rotator cuff tear²⁰; **OR**
- ◆ Presence of active infection; **OR**
- ◆ Rotator cuff arthropathy.²¹

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
23120	Claviculectomy; partial
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)

Disclaimer: G, S, I, and N Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Medical Evidence

The American Academy of Orthopaedic Surgeons (AAOS) published a 2019 guideline for managing 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.¹¹

In a 2017 prospective study, Jain et al examined the diagnostic accuracy of special tests for rotator cuff tears. A total of 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.¹³

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 rotator cuff disease have greater sensitivity than specificity; this is supported by similar studies found in the literature.⁴

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Review History		



Cohere Medicare Advantage Policy – Outpatient Speech Therapy

Clinical Policy for Medical Necessity Review

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Policy Information:

Specialty Area: Speech Language Pathology

Policy Name: Cohere Medicare Advantage Policy - Outpatient Speech Therapy

Policy Number: CHP-078-2

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Outpatient Speech Therapy	4
Related Centers for Medicare & Medicaid Services (CMS) Documents	4
Description	7
Medical Necessity Criteria	7
Indications	7
Non-Indications	7
Definitions and Notes	7
Procedure Codes (CPT/HCPCS)	8
Clinical Harms and Benefits	11
Medical Evidence	12
References	14
Policy Revision History/Information	16

Medical Necessity Criteria

Service: Outpatient Speech Therapy

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD, NCD, or manual is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs, LCDs, and manuals related to *Cohere Medicare Advantage Policy - Outpatient Speech Therapy* is reflected in Table 1 below. For the LCDs or manuals that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 – Related CMS Policies (NCDs or LCDs)²⁻⁶

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	Speech-Lan guage Pathology Services for the Treatment of Dysphagia	170.3	Not fully established	Speech therapy services beyond treatment of dysphagia
LCD	Speech-Lan guage Pathology	L33580	Not fully established	• Therapeutic interventions that focus on cognitive function • Fluoroscopic evaluation of swallowing function by cine or video-recording • Laryngeal functional studies • Evaluation of speech fluency • Auditory rehabilitation (pre- and post-lingual) • Treatment of swallowing dysfunction and/or oral function for feeding • Therapeutic services for use of a non-speech generating device • Evaluation of oral and pharyngeal swallow function • Assessment of aphasia • Therapeutic procedures, group • Speech therapy re-evaluation • Screenings (speech, language, dysphagia) • Evaluation of speech sound production, with or without evaluation of language • Analysis of voice and resonance
LCD	Speech-Lan guage Pathology	L34046	Not fully established	• Therapeutic interventions that focus on cognitive function • Fluoroscopic evaluation of swallowing function by cine or video-recording

				• Laryngeal functional studies • Evaluation of speech fluency • Therapeutic services for use of a non-speech generating device • Auditory rehabilitation (pre- and post-lingual) • Assessment of aphasia • Speech therapy re-evaluation • Evaluation of speech sound production, with or without evaluation of language • Analysis of voice and resonance • Screenings (speech, language, dysphagia)
LCD	Outpatient Speech Language Pathology	L34429	Fully established	N/A
LCD	Speech - Language Pathology (SLP) Services: Communication Disorders	L35070	Fully established	N/A
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use NCD 170.3, Medicare benefit policy manual chapter 15, and/or Cohere Medicare Advantage internal coverage criteria
Internet-Only Manual (IOM)	Medicare benefit policy manual: Chapter 15 - Covered medical and other health services	Chapter 15 - Section 220 and 230.3	Not fully established	• Therapeutic interventions that focus on cognitive function • Fluoroscopic evaluation of swallowing function by cine or video-recording • Laryngeal functional studies • Evaluation of speech fluency

Description

Speech-language pathology (SLP) services involve evaluating, diagnosing, and treating speech, language, cognitive-communication, and swallowing disorders using standardized tests and specialized instruments.⁸ Interventions may include augmentative and alternative communication, swallowing exercises, laryngeal adduction training, and compensatory techniques.⁸ Treatment is expected to produce clinically significant and measurable improvement in functioning or to prevent significant functional regression.⁸

Medical Necessity Criteria

Indications

Outpatient speech therapy is considered appropriate if **ANY** of the following are **TRUE**⁸:

- Evaluation of laryngeal function (e.g., aerodynamic testing and acoustic testing); **OR**
- Fluency disorder in patients less than 18 years of age; **OR**
- Fluency disorder caused by acquired brain damage in patients greater than or equal to 18 years of age; **OR**
- Fluoroscopic evaluation of swallowing function; **OR**
- Therapeutic services related to cognitive function.

Non-Indications

- There are no absolute non-indications for outpatient speech therapy.^A

Definitions and Notes

^A**S codes** are not payable by Medicare.

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)
92521	Evaluation of speech fluency (e.g., stuttering, cluttering)
92522	Evaluation of speech sound production (e.g., articulation, phonological process, apraxia, dysarthria)
92523	Evaluation of speech sound production (e.g., articulation, phonological process, apraxia, dysarthria); with evaluation of language comprehension and expression (e.g., receptive and expressive language)
92524	Behavioral and qualitative analysis of voice and resonance
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
92610	Evaluation of oral and pharyngeal swallowing function
92611	Motion fluoroscopic evaluation of swallowing function by cine or video-recording
92630	Auditory rehabilitation; prelingual hearing loss
92633	Auditory rehabilitation; postlingual hearing loss
96105	Assessment of aphasia (includes assessment of expressive and receptive speech and language function, language comprehension, speech production ability, reading, spelling, writing, e.g., by Boston Diagnostic Aphasia Examination) with interpretation and report, per hour
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

Clinical Harms and Benefits

Cohere Health Medicare Advantage determinations are made in accordance with CMS's decisioning requirements outlined in 42 CFR 422.101. When CMS guidelines are not fully established, Cohere Health develops publicly accessible medical necessity criteria based on widely accepted medical society guidelines and/or robust clinical literature. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.¹

The potential clinical harms of using these criteria for outpatient speech therapy may include:

- Adverse effects from delayed or denied treatment, such as functional speech impairment and communication barriers.⁸
- Increased healthcare costs and complications from the avoidable use of emergency services and additional treatments.

The clinical benefits of using these criteria for outpatient speech therapy may include:

- Improved communication in patients with hearing or neurological impairment, as well as developmental, behavioral, and emotional difficulties.⁸
- Care aligned with the recommendations of the American Speech-Language-Hearing Association (ASHA).⁸
- Enhanced overall patient satisfaction and healthcare experience.

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.⁹

Sackley et al. (2024) performed a randomized controlled trial to evaluate the effectiveness of two speech and language therapy (SLT) approaches—Lee Silverman Voice Treatment (LSVT LOUD) and routine NHS SLT— compared with no therapy for dysarthria in Parkinson’s disease. A total of 388 participants with Parkinson’s-related dysarthria were randomized in a 1:1:1 ratio. LSVT LOUD involved four 50-minute sessions per week for 4 weeks, supplemented by daily home practice. NHS SLT dosage and methods were therapist-determined and generally lower in intensity. The primary outcome was patient-reported Voice Handicap Index (VHI) score at 3 months, with follow-up at 6 and 12 months. At 3 months, the LSVT LOUD group reported significantly better outcomes, and NHS SLT showed no evidence of improvement compared with no therapy. Secondary outcomes also favored LSVT LOUD, with benefits in VHI emotional and functional subscales, communication-related quality of life, and dysarthria-specific measures, sustained over 12 months. Adverse events, mostly mild vocal strain, were more common with LSVT LOUD but were transient and manageable. The study concluded that LSVT LOUD is superior to both NHS SLT and no therapy in reducing the impact of dysarthria in Parkinson’s disease.¹⁰

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.¹¹

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.¹²

Breitenstein et al. (2017) conducted a randomized controlled trial to determine the effect of intensive speech and language therapy in adults with chronic aphasia after stroke. Across rehabilitation centers in Germany, adults younger than 70 years of age with persistent aphasia greater than or equal to 6 months post-stroke were randomized into an intervention or a waiting list group. Participants had at least 10 hours of intensive speech and language therapy for 3 weeks, with a language test as the primary outcome. Overall, the intervention group showed greater improvements in the language test, as well as in linguistic abilities, and improved psychosocial quality of life, compared with the waitlisted group. The authors concluded that 3 weeks of intensive speech and language therapy under routine clinical conditions significantly enhances everyday communication in chronic aphasia. These findings challenge the long-held assumption that language recovery is limited in the chronic stage post-stroke.¹³

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Policy Revision History/Information

Original Date: April 10, 2025		
Review History		
Version 1.1	10/21/2025	Aligned with CMS update – link and reference for L34046, effective 08/07/2025. Updated links and references for Billing and Coding Articles (A52866, A53052, A54111, A56868, A57040), effective 10/01/2025.
Version 2	04/09/2026	Annual Review. Added CPT 92521, 92522, 92523, 92524, 92610, 92611, and 96105. Updated template, including addition of “Table 1 – Related CMS Policies” that describes Cohere definition of which LCDs/NCDs are not fully established. Removed medical necessity criteria addressed by CMS documents per Table 1.



Cohere Medicare Advantage Policy – Patellofemoral Reconstruction/Realignment

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: March 27, 2025

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Patellofemoral Reconstruction/Realignment

Date of last literature review: 03/13/2025

Document last updated: 03/26/2025

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Patellofemoral Reconstruction/Realignment	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	4
Evaluation of Clinical Harms and Benefits	5
Medical Necessity Criteria	7
Indications	7
Non-Indications	8
Level of Care Criteria	8
Procedure Codes (CPT/HCPCS)	8
Medical Evidence	10
References	12
Clinical Guideline Revision History/Information	16

Medical Necessity Criteria

Service: Patellofemoral Reconstruction/Realignment

Benefit Category

Not applicable.

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service. Cite the applicable CMS document here.

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

- There are no applicable NCDs and/or LCDs for Patellofemoral Reconstruction/Realignment.

Recommended Clinical Approach

Patellofemoral reconstruction and realignment procedures may relieve pain, instability, and loss of function in the patellofemoral joint attributable to acute or chronic patellar instability.¹ Initial treatment approaches are often nonsurgical and may include immobilization in a splint or cast and physical therapy.² In some cases, surgical intervention may be recommended, including when conservative care is ineffective and instability is recurrent. Several surgical approaches may address patellofemoral instability, and procedures may be combined to address specific challenges.³

Disruption of the medial patellofemoral ligament (MPFL) is involved in 90% of patellofemoral instability cases and may be resolved with MPFL reconstruction.⁴ Other surgical procedures that may address patellar instability include MPFL repair, repair or reconstruction of other patellar structures such as the medial retinaculum, tibial tubercle distalization, trochleoplasty, tibial or femoral osteotomy, medial tensioning, reconstruction of the trochlear groove, treatment of trochlear dysplasia, lateral positioning of the tibial tubercle, and femoral rotation.^{5,6} Patellar dislocation is often

accompanied by cartilage damage, fractures, and loose bodies, which may be surgically addressed simultaneously.

Clinical examinations, patient history, and imaging assist in determining the need for surgery, the precise location of tears, lesions, and abnormalities, and the presence of any bony deformations, patellar tilt, trochlear dysplasia, femoral malrotation, or lateral positioning of tibial tubercle.⁴ MRI may accurately diagnose up to 95% of acute patellar dislocations.⁷

Surgeons have several options in graft source and patellar and femoral fixation techniques, with no consensus on overall superiority of any single procedure.^{8,9} Patellofemoral reconstructions/realignment procedures can be performed as minimally invasive open procedures or arthroscopically through standard portals.^{10,11} Crutches, flexion limitation, and physical therapy are often recommended in the postoperative period.

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of Patellofemoral Reconstruction/Realignment. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Re-dislocations, postoperative instability, and patellar fractures are all potential risks of patellofemoral reconstruction/realignment.⁶ A 2023 study reported an 8% risk of all postoperative complications.¹² Procedural variations, including differences in graft source, patellar and femoral fixation technique, and knee flexion angle during fixation, all have unique complication risks.^{9,13} Postsurgical complications reported in a 2012 meta-analysis included patellar fracture, need for surgical revision, reduced knee flexion, instability, wound complications, and pain.¹⁴ A later study also reported flexion contracture, stiffness, quadriceps atrophy, and recurrence of patellofemoral dislocation.⁹
- Though rare, postoperative patellar fracture was reported only after MPFL reconstruction procedures using single or double transverse bone

tunnels.¹⁴ Similarly, a 2020 retrospective chart review of 384 MPFL reconstructions found a slightly increased risk of patellar fracture in patients with small oblique tunnels compared to patients with suture anchors. However, this study also reported an increased risk of subluxation or dislocation in patients with suture anchors.⁸ In a 2021 review of 10,710 patients across 144 studies, the most often reported cause of failure of MPFL reconstruction was femoral tunnel malposition.¹⁵

- A more frequently reported surgical complication is loss of knee flexion.¹⁴ Careful determination of the femoral point of fixation using radiographic landmarks under fluoroscopy and caution in selecting the flexion angle for fixation may reduce these risks. Additionally, hardware may not be well-tolerated, and 1.1% of patients require additional surgery to remove symptomatic hardware. A 2023 study reported that, at extended periods following surgery, a third of patients may report patellofemoral arthritis.¹²
- While realignment procedures can address primary patellar dislocation, they also carry a risk of re-dislocation higher than other treatment options.^{17,18} Realignment may also lead to patient discomfort, low activity, and poorer outcomes and may be less effective in addressing instability than MPFL reconstruction, repair, and conservative care.
- Delays in surgical procedures may exacerbate the conditions underlying the instability. A 2018 meta-analysis reported that conservative management of primary patellar displacement is associated with high rates of re-dislocation and long-term immobilization.¹⁹ Displacement may lead to stiffness and patellofemoral articular damage, further impairing long-term functional outcomes. Similarly, a 2014 meta-analysis of randomized controlled trials concluded that patients with patellar instability treated nonsurgically were more likely than patients treated surgically to experience recurrent patellar dislocations.²
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Improved knee functioning and reduced risk of recurrent dislocations. In a 2009 study, 33 patients with acute patellar dislocations were treated with conservative management or MPFL reconstruction. Recurrent patellar dislocation or subluxation in the 15-month post-treatment

follow-up period was reported in 8 of the 16 conservatively managed patients and none of the 17 surgical patients. Additionally, Kujala questionnaire scores were 22% higher in the surgical compared to the conservative management group, indicating better self-reported knee functioning and lower levels of pain and disability after surgery.²⁰ Similarly, a 2023 Cochrane Review and meta-analysis of 10 studies with 519 patients reported a statistically significant reduction in recurrent patellar dislocations in surgical compared to conservative care patients.²¹ Moreover, a 2023 meta-analysis of 10 studies compared the long-term outcomes of conservative care, reconstruction, and realignment. The authors reported the best functional outcomes and the lowest re-dislocation rates after MPFL reconstruction.¹

- Surgery may restore the anatomy and biomechanics of the knee joint, forestalling long-term development of osteoarthritis.¹³ Recurrent patellofemoral instability may lead to cartilage degeneration, which may increase the risk of developing osteoarthritis in the knee.²²
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

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 (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months.

Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement^{2,6,23}; **OR**

- The patient is experiencing a subsequent dislocation or the first dislocation is associated with an osteochondral or chondral injury²³⁻²⁷; **OR**
- The patient has a loose body¹³; **OR**
- Abnormal patellar tracking as part of or after a total knee arthroplasty²⁸; **AND**
- ◆ Imaging shows **ANY** of the following ^{4,7,29,30}:
 - Abnormal patellar tracking; **OR**
 - Disruption 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^{19,31-35}:
 - 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** may not be considered appropriate if **ANY** of the following is **TRUE**^{4,13}:
- ◆ Severe patellofemoral arthritis; **OR**
 - ◆ Active joint infection.

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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
27524	Open treatment of knee cap fracture with insertion of hardware and/or removal of knee cap

Disclaimer: G, S, I, and N Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Medical Evidence

Patellar dislocation, when the patella moves away from its normal position in the femoral trochlear groove, may lead to further injury and loss of function, including recurrent dislocations, patellar instability, cartilage injury, pain, and patellofemoral osteoarthritis.³⁶

Yoo et al. (2023) performed a meta-analysis to compare the effectiveness of various 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.¹

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.³⁷

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.¹³

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Clinical Guideline Revision History/Information

Original Date: March 27, 2025		
Review History		



Cohere Medicare Advantage Policy – Patellofemoral Reconstruction/Realignment

Clinical Policy for Medical Necessity Review

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Policy Number: CHP-064-2

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Important Notices

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Policy Information:

Specialty Area: Musculoskeletal Care

Policy Name: Cohere Medicare Advantage Policy – Patellofemoral Reconstruction/Realignment

Policy Number: CHP-064-2

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Patellofemoral Reconstruction/Realignment	4
Related Centers for Medicare & Medicaid Services (CMS)	
Documents	4
Description	5
Medical Necessity Criteria	5
Indications	5
Non-Indications	7
Procedure Codes (CPT/HCPCS)	7
Evaluation of Clinical Harms and Benefits	7
Medical Evidence	9
References	12
Policy Revision History/Information	16

Medical Necessity Criteria

Service: Patellofemoral Reconstruction/Realignment

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Patellofemoral Reconstruction/Realignment* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 – Related CMS Policies (NCDs or LCDs)¹

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

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.² Surgical technique may vary in graft choice, points of attachment, fixation method, and graft tension.³ 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.^{4,5} 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**:

- **ANY** of the following:
 - Failure of conservative management for greater than 3 months, including **ALL** of the following⁶⁻⁹:

- 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 program¹⁰; **OR**
- **ANY** of the following^{8,10-14}:
 - Presence of a subsequent dislocation; **OR**
 - The first or subsequent dislocation is associated with an osteochondral or chondral injury; **OR**
- Presence of patellar subluxation episodes after 6 months of conservative care⁹; **OR**
- Abnormal patellar tracking as part of or after a total knee arthroplasty¹⁵; **AND**
- Imaging with radiology report shows **ANY** of the following^{14,16-19}:
 - The procedure is a patellofemoral realignment and abnormal patellar tracking as indicated by **ANY** of the following²⁰:
 - 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**
 - Tibial tubercle-trochlear groove (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**
 - Osteochondral or articular cartilage injury from dislocation or subluxation event; **AND**
- Positive exam findings, including **ANY** of the following²¹⁻²⁶:
 - 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; **OR**
 - Other patellofemoral exam with clear documentation that is consistent with patellar instability.

Non-Indications

Patellofemoral Reconstruction/Realignment is not considered appropriate if **ANY** of the following is **TRUE**^{16,27}:

- Severe patellofemoral arthritis indicated by Kellgren-Lawrence grade of 3 or 4; **OR**
- Active joint infection.

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
27418	Anterior tibial tubercleplasty (eg, Maquet type procedure)
27420	Reconstruction of dislocating patella; (eg, Hauser type procedure)
27422	Reconstruction of dislocating patella; with extensor realignment and/or muscle advancement or release (eg, Campbell, Goldwaite type procedure)
27424	Reconstruction for dislocating; Patella with patellectomy
27427	Ligamentous reconstruction (augmentation), knee; extra-articular
27524	Open treatment of patellar fracture, with internal fixation and/or partial or complete patellectomy and soft tissue repair
27566	Open treatment of patellar dislocation, with or without partial or total patellectomy

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach

to decision hierarchy in the setting of NCDs/LCDs identified as being “not fully established”. When clinical coverage criteria are “not fully established” Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.¹

The potential clinical harms of using these criteria for patellofemoral reconstruction/realignment may include:

- Adverse effects from delayed or denied surgical intervention, such as exacerbation of conditions underlying instability.^{6,21}
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria for patellofemoral reconstruction/realignment may include:

- Improved patient selection for patellofemoral reconstruction/realignment, resulting in better long-term outcomes.
- Maintenance of rigorous patient safety standards aligned to best available evidence.
- Appropriate allocation of healthcare resources at the individual beneficiary and population levels.

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. 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.²⁸

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.²⁹

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.²⁷

Hussein et al. (2018) conducted a meta-analysis comparing surgical management and conservative treatment for medial patellofemoral ligament (MPFL) injury and primary patellar dislocation. Their meta-analysis included 4 randomized controlled trials (RCTs) involving 171 patients: 92 received surgical intervention, and 79 received conservative treatment. The authors reported that conservative management of primary patellar displacement is associated with high rates of re-dislocation and high Kujala scores, a measure of symptom severity and functional outcomes in those with patellofemoral disorders, suggesting that those who received surgery had more favorable outcomes.²¹ Similarly, a 2014 meta-analysis of 7 RCTs concluded that patients with patellar instability treated nonsurgically were more likely than patients treated surgically to experience recurrent patellar dislocations.⁶ Both of these meta-analyses highlight the potential harms of delaying surgical intervention.

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. 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.³⁰

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. Advanced imaging, including ultrasound and magnetic resonance imaging (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

osteocondral 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.¹⁴

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Version 2	03/26/2026	Annual review. Added CPT codes 27420, 27422, 27524. Updated severe patellofemoral arthritis non-indication to include Kellgren-Lawrence grade of 3 or 4. Updated indications for positive exam findings and osteochondral or articular cartilage injury. Removed indications for presence of loose body. Updated Harms and Benefits section. Updated the Medical Evidence section. Updated References.



Cohere Medicare Advantage Policy – Pediatric Vertebral Body Tethering (VBT) and Vertical Expandable Prosthetic Titanium Rib (VEPTR)

Clinical Policy for Medical Necessity Review

Version: 1
Effective Date: June 12, 2025

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Policy Information:

Specialty Area: Musculoskeletal Care

Policy Name: Cohere Medicare Advantage Policy - Pediatric Vertebral Body Tethering (VBT) and Vertical Expandable Prosthetic Titanium Rib (VEPTR)

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Pediatric Vertebral Body Tethering (VBT) and Vertical Expandable Prosthetic Titanium Rib (VEPTR)	4
Related CMS Documents	4
Description	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	6
Definitions	8
Level of Care Criteria	8
Procedure Codes (CPT/HCPCS)	8
Evaluation of Clinical Harms and Benefits	10
Medical Evidence	12
References	14
Clinical Guideline Revision History/Information	17

Medical Necessity Criteria

Service: Pediatric Vertebral Body Tethering (VBT) and Vertical Expandable Prosthetic Titanium Rib (VEPTR)

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

- There are no applicable NCDs and/or LCDs for pediatric vertebral body tethering (VBT) and vertical expandable prosthetic titanium rib (VEPTR).

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 cords are tightened, thereby purported to straighten the spine to allow for the guided growth of the spine. The procedure requires only small incisions and devices.¹⁻⁵ 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.⁶ 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.⁷⁻⁹

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 following¹⁰:
 - 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**
- Spinal curve flexibility is greater than 30%¹; **AND**
- Radiographic confirmation of **ANY** of the following:
 - Radiographs demonstrated a Cobb angle of 30 to 65 degrees^{1,6}; **OR**
 - Moderate lumbar stenosis⁵; **OR**
 - Absence of gross angular or translatory instability of the spine at index or adjacent levels⁵; **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 surgery¹¹; **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 following¹⁰:
 - 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:
 - Progressive thoracic insufficiency syndrome⁷; **OR**

- Scoliosis (e.g., congenital, neuromuscular, idiopathic, syndromic)⁷;
OR
- Complex spinal deformities; **OR**
- Chest wall defects; **AND**
- The patient is skeletally immature, between 6 months and skeletal maturity, with **ANY** of the following⁷:
 - Risser grade 0 or 1¹²; **OR**
 - Sanders Simplified Skeletal Maturity Scale (SMSS) less than or equal to 4¹³; **AND**
- The procedure is performed at a COE specialized in anterior spinal surgery¹¹; **AND**
- Preoperative evaluation has been done with the evaluation of **ALL** of the following:
 - Appropriate nutrition status as indicated by **ANY** of the following¹⁴:
 - Albumin less than 3.5 g/dL; **OR**
 - Total lymphocyte count less than 1,500 cells/mm³; **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 mature⁶; **OR**
 - The patient is non-ambulatory⁶; **OR**
 - Growing rods are being used (FDA device recall); **OR**
 - Active or chronic infection (e.g., systemic, local)^{2,5,7}; **OR**
 - Known allergy to titanium alloys or magnetic resonance contrast agents^{2,5,7}; **OR**
 - **ANY** of the following conditions:
 - Axial back pain only, with no leg, buttock, or groin pain^{2,5}; **OR**
 - Back or leg pain, unknown etiology^{2,5}; **OR**
 - Morbid obesity body mass index (BMI) greater than 40)^{2,5}; **OR**
 - Congenital scoliosis⁶; **OR**
 - Vertebral malformations⁶; **OR**

- Chest malformations⁶; **OR**
- Altered muscle function or control⁶; **OR**
- Severe facet hypertrophy that requires extensive bone removal, which would cause instability^{2,5}; **OR**
- Grade II or greater spondylolisthesis^{2,5}; **OR**
- Isthmic spondylolisthesis or spondylolysis (pars fracture)^{2,5}; **OR**
- Degenerative lumbar scoliosis (Cobb angle greater than 25° lumbar segmental)^{2,5}; **OR**
- Osteopenia^{2,5}; **OR**
- Osteoporosis^{2,5}; **OR**
- Metabolic bone disease (e.g., Paget disease, osteomalacia)⁵; **OR**
- Rheumatoid arthritis or an autoimmune disease that requires chronic steroid use⁵; **OR**
- Cauda equina syndrome^{2,5}; **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 intent⁵; **OR**
- More than 2 vertebral levels require surgical decompression⁵; **OR**
- Previous surgical procedure resulted in gross translatory instability of the lumbar spine⁵; **OR**
- Previous fusion of **ANY** of the following^{2,5}:
 - 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^{2,5}; **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 retrolisthesis⁵; **OR**
- **ANY** of the following for VEPTR⁷:
 - 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.”¹¹

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).⁵

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).”⁵

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.”⁶

Level of Care Criteria

Inpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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
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

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.

The potential clinical harms of using these criteria for vertebral body tethering (VBT) may include:

- Adverse effects from delayed or denied treatment, such as tether breakage and reoperation. Cahill et al. (2024) reported that a study of 208 patients demonstrated tether breakage in 50% of the group by 36-month follow-up.¹⁵ Roser et al. (2023) reported similar outcomes.¹⁶ Raitio et al. (2022) conducted a systematic review, which demonstrated that 15% of patients required reoperation.¹⁷ Further research is needed, specifically on the long-term outcomes of VBT for patients with scoliosis.¹⁶

The clinical benefits of using these criteria for VBT may include:

- Improved patient selection results in better long-term outcomes. These include improved growth modulation, maintaining spine mobility, reduced complication rates, and resumption of activities. VBT "does not impact the pulmonary function even in the case of bilateral surgery with deflation of both lungs".¹⁸ In addition, the procedure can delay or avoid spinal fusion – one study reported that less than 5% of patients required conversion.¹⁷
- Appropriate allocation of healthcare resources at the individual beneficiary and population levels.

The potential clinical harms of using these criteria for vertical expandable prosthetic titanium rib (VEPTR) may include:

- Adverse effects from delayed or denied treatment, such as hook migration, respiratory distress, wound dehiscence, recurrent infection, and hardware exposure.^{19,20}

The clinical benefits of using these criteria for VEPTR may include:

- Improved patient selection results in better long-term outcomes, including respiratory function²¹, curve and head shift improvement, stabilized hemithoracic height and width, and increased thoracic spine height.⁸ The device has also demonstrated improved spine formation for patients with cerebral palsy and restrictive lung disease.²⁰
- Appropriate allocation of healthcare resources at the individual beneficiary and population levels.

Medical Evidence

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 (VBT) 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 consequences are unknown.¹⁶

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.¹⁸

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.²²

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.²³

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.²⁴

United States Food and Drug Administration (FDA)

In 2023, the FDA approved the Tether Vertebral Body Tethering System for skeletally immature patients with progressive idiopathic scoliosis who have failed or not tolerated brace wear.¹ The FDA approved OrthoPediatrics (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).^{1-3,5}

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 included¹:

- 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.

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Clinical Guideline Revision History/Information

Original Date: June 12, 2025		
Review History		



Cohere Medicare Advantage Policy – Periacetabular Osteotomy/Surgical Dislocation

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: March 20, 2025

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Periacetabular Osteotomy/Surgical Dislocation

Date of last literature review: 3/10/2025

Document last updated: 3/19/2025

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Periacetabular Osteotomy/Surgical Dislocation	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	4
Evaluation of Clinical Harms and Benefits	4
Medical Necessity Criteria	6
Indications	6
Non-Indications	7
Tönnis Grading Scale of Hip Osteoarthritis	7
Level of Care Criteria	8
Procedure Codes (CPT/HCPCS)	8
Medical Evidence	9
References	10
Clinical Guideline Revision History/Information	12

Medical Necessity Criteria

Service: Periacetabular Osteotomy/Surgical Dislocation

Benefit Category

Not applicable.

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.

Related CMS Documents

There are no applicable NCDs and/or LCDs for open meniscus repair. Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

Recommended Clinical Approach

A periacetabular osteotomy (PAO) is an orthopedic procedure to correct developmental hip deformities including acetabular dysplasia. The surgery is meant to improve the mechanics of the hip joint and delay the development of degenerative arthritis. During a PAO, the acetabulum is reoriented in the pelvis to correct acetabular dysplasia, thereby relieving pain and improving hip function. This procedure may be indicated for a retroverted acetabulum. A trochanteric osteotomy may be performed with surgical hip dislocation.^{1,2}

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of periacetabular osteotomy/surgical dislocation. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- A possible decrease in the range motion of the hip following the surgery or a lack of joint preservation.^{2,3}
- Nerve injuries, including injuries to the lateral femoral cutaneous nerve and femoral and sciatic nerves
- Wound complications, including superficial and deep infections, dehiscence, and hematomas.^{2,4,5}
- Vascular complications including blood loss and arterial thrombosis.⁵
- Intraoperative complications and fractures, including acetabular fractures, posterior column fractures, and over and under-corrections.^{2,4,5}
- A systematic review by Clohoisy et al (2009) found that PAO failure rates were higher among patients with moderate or advanced osteoarthritis.²
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- The correction of severe dysplastic deformities results in improved hip function and a reduction in pain.^{2,6,7}
- The improvement in clinical outcomes, including hip flexion and internal rotation.^{4,7-10}
- A systematic review by Clohoisy et al (2009) found the procedure is optimal for young patients with little or no perioperative osteoarthritis.²
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

→ **Periacetabular osteotomy/surgical dislocation** is considered appropriate if **ALL** of the following are **TRUE**¹⁻¹²:

- ◆ The patient has **ANY** of the following clinical symptoms:
 - Pain in hip, groin, buttocks, or thigh; **OR**
 - Clicking, locking, catching, or giving way; **OR**
 - Hip instability; **OR**
 - Discomfort or pain that worsens with activities such as prolonged sitting, prolonged standing, walking, climbing stairs, or running¹³; **OR**
 - Stiffness; **OR**
 - Limping¹⁴; **AND**
- ◆ The patient has **ANY** of the following physical examination findings:
 - Flexed knee gait while walking; **OR**
 - 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 (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months; **AND**
- ◆ The patient has **ANY** of the following¹:
 - Bony morphology that prevents arthroscopic treatment; **OR**
 - Surgical dislocation of the hip is indicated to treat intra-articular and bony pathology; **AND**
- ◆ No evidence of advanced degenerative osteoarthritis (Tönnis Grade 2 to 3); **AND**
- ◆ Imaging findings indicate femoroacetabular impingement (FAI) or developmental dysplasia of the hip (DDH).

NOTE:

*** 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.

**** 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 gentle downward force against the knee of the abducted leg. A positive result occurs when the patient reports groin pain on the affected side.¹⁵

Non-Indications

→ **Periacetabular osteotomy/surgical dislocation** is **NOT** considered appropriate if **ANY** of the following is **TRUE**¹²:

- ◆ Severe osteoarthritis (Tönnis Grade 2 or 3, see note below)¹⁶; **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.

Tönnis Grading Scale of Hip Osteoarthritis

Grade	Radiographic Features
0	-No signs of osteoarthritis
1	-Slight narrowing of joint space -Slight lipping at the joint margin -Slight sclerosis of the femoral head or acetabulum
2	-Small cysts in the femoral head or acetabulum -Increasing narrowing of joint space -Moderate loss of sphericity of the femoral head
3	-Large cysts -Severe narrowing or obliteration of joint space -Severe deformity of the femoral head -Avascular necrosis

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
27146	Osteotomy of acetabular bone; Osteotomy of iliac bone; Osteotomy of innominate bone
27299	Unlisted procedure on hip joint; Unlisted procedure on pelvis

Disclaimer: G, S, I, and N Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Medical Evidence

Zebala et al (2007) completed a systematic review regarding anterior femoroacetabular impingement. The usage of the periacetabular osteotomy (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. They cite a study where 26 of 29 patients with symptomatic FAI from acetabular retroversion reported excellent outcomes post-osteotomy. In the writer's practice, the procedure is generally combined with an anterior arthrotomy and osteochondroplasty as necessary.¹

Kamath (2016) describes Bernese periacetabular osteotomy for hip dysplasia. Though technically demanding, the procedure has demonstrated success in mid- and long-term clinical studies over the past 30 years. It is stated that pelvic osteotomy is a preferred alternative to arthroplasty in young, active patients with correctable structural hip deformities.¹²

Coobs and colleagues (2015) reviewed periacetabular osteotomy 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.¹⁴

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Clinical Guideline Revision History/Information

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Review History		



Cohere Medicare Advantage Policy – Physical and Occupational Therapy (PT/OT)

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: April 17, 2025

Important Notices

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Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Physical and Occupational Therapy (PT/OT)	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	5
Evaluation of Clinical Harms and Benefits	5
Medical Necessity Criteria	6
Indications	6
Non-Indications	12
Level of Care Criteria	14
Procedure Codes (CPT/HCPCS)	14
Medical Evidence	23
References	24
Clinical Guideline Revision History/Information	27

Medical Necessity Criteria

Service: Physical and Occupational Therapy (PT/OT)

Benefit Category

Not applicable.

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.¹⁻¹⁰

- [Local Coverage Determination \(LCD\): Outpatient physical and occupational therapy services \(L33631\)](#)
 - [Billing and Coding: Outpatient physical and occupational therapy service \(A56566\)](#)
- [Local Coverage Determination \(LCD\): Outpatient physical and occupational therapy services \(L34049\)](#)
 - [Billing and Coding: Outpatient physical and occupational therapy service \(A57067\)](#)
- [Local Coverage Determination \(LCD\): Outpatient physical therapy \(L34428\)](#)
 - [Billing and Coding: CPT code 97755 - Assistive technology assessment \(A53053\)](#)
 - [Billing and Coding: Low frequency, non-contact, non-thermal ultrasound \(A53773\)](#)
 - [Billing and Coding: Outpatient physical therapy \(A53065\)](#)
- [Local Coverage Determination \(LCD\): Outpatient occupational therapy \(L34427\)](#)
 - [Billing and Coding: CPT code 97755 - Assistive technology assessment \(A53053\)](#)
 - [Billing and Coding: Low frequency, non-contact, non-thermal ultrasound \(A53773\)](#)
 - [Billing and Coding: Outpatient occupational therapy \(A53064\)](#)

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 physical therapy assistant must be under the plan of care (POC) of a physical therapist with appropriate oversight as defined by the local jurisdiction. Care delivered by a certified occupational therapist assistant must be under the 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.¹¹⁻²⁰

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of physical and occupational therapy (PT/OT). This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Physical and occupational therapy are generally safe and effective for managing many conditions. Adverse events can include pain, soreness, swelling, headaches, dizziness, or worsening of a pre-existing condition.
- Prolonged physical therapy may increase pain in certain populations, especially among patients who are candidates for surgical interventions.¹⁸⁻²⁰

- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Physical and occupational therapy often assist in pain management, injury recovery and prevention, and management of chronic conditions.
- Physical therapy may be beneficial for shoulder patients to improve mobility, strength and function for patients with musculoskeletal disorders.¹⁸⁻²⁰
- Occupational therapy interventions focusing on the functional and social needs of patients can prevent hospital readmissions by addressing activities of daily living and safety concerns.²¹
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

→ **Physical therapy (PT) or occupational therapy (OT) services** are considered appropriate if **ALL** of the following are **TRUE**:

- ◆ Therapy services are provided or supervised by a qualified physical or occupational therapist, and the service was referred to by the patient's physician^{13,5,9}; **AND**
- ◆ The patient's condition is such that the therapy services required can only be safely and effectively performed by a qualified therapist, supervising assistant, or clinician^{13,5,9}; **AND**

- ◆ The patient's condition has the potential to improve or is improving in response to therapy, maximum improvement is yet to be attained, and there is an expectation that the anticipated improvement is attainable in a reasonable and generally predictable period of time^{13.5.9}; **AND**
- ◆ A plan of care (POC) is developed by a physician/non-physician practitioner (NPP) or by the therapist providing services, which must be certified by the physician/NPP^{13.5.9}; **AND**
- ◆ The POC includes **ALL** of the following^{13.22.23}:
 - Short- and long-term goals with documentation on how goals will be obtained; **AND**
 - An estimated time of when goals are expected to be attained; **AND**
 - Measurable objectives; **AND**
 - The number of visits requested is appropriate for the diagnosis; **AND**
 - Therapy interventions to be used; **AND**
- ◆ The service is **ANY** of the following:
 - The service is a screening (i.e., a brief, initial assessment to determine if an evaluation is needed), and **ANY** of the following¹³:
 - The screening is used to determine that a therapy evaluation and treatment would not be medically necessary; **OR**
 - The screening is used to determine the need for further evaluation by a therapist/clinician; **OR**
 - The screening includes a review of the patient's medical record, a patient interview, and/or patient observation; **OR**
 - The service is an initial evaluation (i.e., a comprehensive assessment to develop a treatment plan), and **ALL** of the following^{13.5}:
 - The initial evaluation determines **ANY** of the following:
 - ◆ The medical necessity of the therapy; **OR**
 - ◆ The skilled instruction and maintenance activities that the patient/caregiver can perform at home; **AND**
 - The initial evaluation documents the course of

- therapy through objective findings and subjective patient/caregiver self-reporting; **AND**
- The patient has a new diagnosis or the condition is being treated in a new setting (e.g., from inpatient to outpatient); **AND**
 - The evaluation process assesses **ANY** of the following:
 - ◆ Objective measurements of activities of daily living ([ADLs] e.g., eating, swallowing, bathing, dressing, toileting, walking, climbing stairs); **OR**
 - ◆ Evaluations of clinical findings (e.g., chronicity/severity of the problem, the possibility of multi-system involvement or pre-existing conditions); **OR**
 - ◆ The extent and duration of loss of function, prior functional level, social/environmental considerations, educational level, the patient's overall physical and cognitive health status, social/cultural supports, psychosocial factors, or use of adaptive equipment; **OR**
 - The service is a continued treatment^{13.5}; **OR**
 - The service is a re-evaluation, and **ANY** of the following^{13.5.9}:
 - The professional assessment indicates progress toward current goals, a significant decline in the patient's condition or functional status that was not anticipated in the POC, or establishes interventions for newly developed impairments; **OR**
 - The professional assessment indicates whether continuing care, modifying goals and/or treatment, or terminating services is appropriate; **OR**
 - The POC needs to be revised or recertified if significant changes in the patient's condition or goals are made; **OR**
 - The service is maintenance therapy, and **ANY** of the following^{13.5.9}:
 - The service is needed to maintain the patient's current condition or prevent or slow further deterioration, even if no improvement is expected; **OR**

- The patient's particular condition requires a qualified therapist to furnish maintenance therapy, even if the skills of a therapist are not ordinarily required to perform such procedures; **OR**
- The service is needed to instruct the patient or caregiver regarding the maintenance program; **OR**
- The service is needed for periodic re-evaluations or re-assessments; **AND**
- ◆ The requested course of treatment represents a recognized, evidence-based service targeting a condition within the scope of practice for physical or occupational therapy, including **ANY** of the following therapeutic procedures and modalities:
 - Hot or cold packs^{1,3,5,9}; **OR**
 - Mechanical traction (e.g., to cervical or lumbar spine)^{1,3,5,9}; **OR**
 - Vasopneumatic devices^{1,3,5,9}; **OR**
 - Paraffin bath^{1,3,5,9}; **OR**
 - Diathermy or pulsed wave diathermy;^{1,3,5,9} **OR**
 - Ultraviolet therapy^{1,3,5}; **OR**
 - Electrical stimulation^{1,3,5,9}; **OR**
 - Iontophoresis for primary focal hyperhidrosis^{1,3,5,9}; **OR**
 - Contrast baths^{1,3,5,9}; **OR**
 - Hot and cold bath education for the patient/caregiver^{1,3,5,9}; **OR**
 - Ultrasound^{1,3,5,9}; **OR**
 - Hubbard tank/whirlpool therapy^{1,3,5,9}; **OR**
 - Non-implantable pelvic floor electrical stimulation^{1,3}; **OR**
 - Computerized dynamic posturography^{5,9}; **OR**:
 - Therapeutic exercises to restore or improve **ANY** of the following^{1,3,5,9}:
 - Strength and endurance (one or more areas, each 15 minutes); **OR**
 - Range of motion (one or more areas, each 15 minutes); **OR**
 - Flexibility and mobility (one or more areas, each 15 minutes); **OR**
 - Manual therapy, including **ANY** of the following^{1,3,5,9}:
 - Manual traction; **OR**

- Joint mobilization; **OR**
- Myofascial release/soft tissue mobilization; **OR**
- Manipulation; **OR**
- Manual lymphatic drainage/complex decongestive therapy (MLD/CDT); **OR**
- Physical performance test or measurement^{1,3,5,9}; **OR**
- Muscle or range of motion testing^{1,3,5,9}; **OR**
- Massage therapy as an adjunctive treatment^{1,3,5,9}; **OR**
- Canalith repositioning procedure (e.g., Epley maneuver, Semont maneuver; for the treatment of benign paroxysmal positional vertigo)^{1,3,5}; **OR**
- Basic activities of daily living (BADLs) training^{1,3,9}; **OR**
- Instrumental activities of daily living (IADLs) training^{1,3,9}; **OR**
- Community/work reintegration training (e.g., shopping, transportation, money management)^{1,3,5,9}; **OR**
- Muscle re-education^{1,3,9}; **OR**
- Neuromuscular re-education^{1,3,5,9}; **OR**
- Vestibular ocular reflex training^{1,3}; **OR**
- Aquatic therapy with aquatic exercises^{1,3,5,9}; **OR**
- Gait training^{1,3,5}; **OR**
- Standardized cognitive performance testing (e.g., Ross Information Processing Assessment)^{1,3}; **OR**
- Cognitive training^{1,3}; **OR**
- Perceptual motor training^{1,3,5}; **OR**
- Sensory integration^{1,3,5,9}; **OR**
- Neurodevelopment training^{1,3}; **OR**
- Assistive technology assessment^{1,3,5,9}; **OR**
- Fine motor coordination/strengthening^{1,3,9}; **OR**
- Orthotics fitting/training (splinting, casting, strapping)^{1,3,5,9}; **OR**
- Prosthetic training^{5,9}; **OR**
- Biofeedback training^{1,3,5,9}; **OR**
- Adaptive equipment fabrication and training^{1,3,5,9}; **OR**
- Patient/caregiver education/training^{1,3,5,9}; **OR**
- Wheelchair management (e.g., assessment, fitting, training)^{1,3,5,9}; **OR**
- Removal of devitalized tissue from wound(s), non-selective debridement, without anesthesia (e.g., wet-to-moist

dressings, enzymatic, abrasion, larval therapy), including topical application, wound assessment, and instructions for ongoing care^{1,3,5,9}; **OR**

- Negative pressure wound therapy as an adjunct to standard treatment^{1,3,5,9}; **OR**
- Other therapeutic procedures or modalities are not listed, so long as they are recognized, evidence-based, and within the scope of physical and occupational therapy practice.
- The service is for occupational therapy and includes **ANY** of the following therapeutic procedures or modalities:
 - Evaluation of oral and pharyngeal swallowing function*⁹; **OR**
 - Treatment of swallowing dysfunction and/or oral function feeding⁹; **OR**
 - Iontophoresis for **ANY** of the following:
 - ◆ Primary focal hyperhidrosis^{1,3,5,9}; **OR**
 - ◆ Tendonitis or calcific tendonitis⁹; **OR**
 - ◆ Bursitis⁹; **OR**
 - ◆ Adhesive capsulitis⁹; **OR**
 - ◆ Thick adhesive scars.⁹

*NOTE: The evaluation of oropharyngeal swallowing dysfunction may include: history of patient's disorder and awareness of swallowing disorder, and indications of localization and nature of disorder; medical status including nutritional and respiratory status; oral anatomy/physiology (labial control, lingual control, palatal function); pharyngeal function; laryngeal function; ability to follow directions, alertness; efforts and interventions used to facilitate normal swallow (compensatory strategies such as chin tuck, dietary changes, etc.); or identifying symptoms during attempts to swallow. The clinical examination can be divided into 2 phases: the preparatory examination with no swallow; the initial swallow examination with actual swallow while physiology is observed. Based on the findings, an instrumental exam may be recommended.

Non-Indications

→ **Physical therapy (PT) or occupational therapy (OT) services** are not considered appropriate if **ANY** of the following is **TRUE**^{1,3}:

- ◆ 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 (SLP), which should provide different treatment goals, plans, and therapeutic modalities; **OR**
- ◆ Dry hydrotherapy massage (aquamassage, hydromassage); **OR**
- ◆ Iontophoresis for the delivery of non-steroidal anti-inflammatory drugs (NSAIDs); **OR**
- ◆ Work hardening and conditioning; **OR**
- ◆ Exercises to promote overall fitness, flexibility, endurance, aerobic conditioning, or weight reduction in the absence of a complicated patient condition; **OR**
- ◆ Anodyne; **OR**
- ◆ Low-level laser treatment/cold laser therapy; **OR**
- ◆ Massage chairs or roller beds; **OR**
- ◆ Interactive metronome therapy; **OR**
- ◆ Loop reflex training; **OR**
- ◆ Vestibular ocular reflex training; **OR**
- ◆ Continuous passive motion (CPM) device setup and adjustments; **OR**
- ◆ Craniosacral therapy; **OR**
- ◆ Electro-magnetic therapy, except as indicated for chronic wounds; **OR**
- ◆ Constraint Induced Movement Therapy (CIMT); **OR**
- ◆ Pelvic floor dysfunction (not including incontinence), including pelvic floor congestion, pelvic floor pain not of spinal origin, hypersensitive clitoris, prostatitis, cystourethrocele, enterocele, rectocele, vulvodynia, vulvar vestibulitis syndrome; **OR**
- ◆ Frequency specific microcurrent; **OR**
- ◆ Whole body periodic acceleration; **OR**
- ◆ Light beam generator therapy; **OR**

- ◆ Functional Electrical Stimulating (FES) devices other than those that assist in walking; **OR**
- ◆ Ultrasound for the treatment of **ANY** of the following^{1,3}:
 - Asthma, bronchitis, or any other pulmonary conditions; **OR**
 - Wounds; **OR**
- ◆ MLD/CDT for the treatment of **ANY** of the following^{1,3}:
 - Conditions reversible by exercise or elevation of the affected area; **OR**
 - Dependent edema related to congestive heart failure or other cardiomyopathies; **OR**
 - Patients who do not have the physical and cognitive abilities, or support systems, to accomplish self-management in a reasonable time; **OR**
 - Continuing treatment for a patient non-compliant with a program for self-management; **OR**
- ◆ Electrical stimulation for the treatment of **ANY** of the following^{1,3}:
 - Facial nerve paralysis, commonly known as Bell's palsy; **OR**
 - Motor function disorders such as multiple sclerosis; **OR**
 - Stroke, when it is determined there is no potential for restoration of function; **OR**
 - When it is the only intervention utilized purely for strengthening a muscle with at least fair-graded strength; **OR**
- ◆ Negative pressure wound therapy for the treatment of **ANY** of the following^{1,3}:
 - Stage I or II pressure ulcers; **OR**
 - Wounds with eschar if debridement is not attempted; **OR**
 - Untreated osteomyelitis within the vicinity of the wound; **OR**
 - Cancer is present in the wound; **OR**
 - Exposed vasculature, nerve, anastomotic site, or organ; **OR**
 - Active bleeding; **OR**
 - The presence of a fistula to an organ or body cavity within the vicinity of the wound; **OR**
- ◆ Group therapy including **ANY** of the following^{1,3}:
 - Groups directed by a student, therapy aide, rehabilitation technician, nursing aide, recreational therapist, exercise physiologist, or athletic trainer; **OR**

- Routine (i.e., supportive) groups that are part of a maintenance program, nursing rehabilitation program, or recreational therapy program; **OR**
- Groups using biofeedback for relaxation; **OR**
- Viewing videotapes; listening to audiotapes; **OR**
- Group treatment that does not require the unique skills of a therapist.

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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 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.
97163	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.
97164	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.
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 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.
97167	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.
97168	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.

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	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

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

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), and hand function was self-reported (e.g., Manual Ability Measure). 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.²⁴

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.²⁵

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.²⁶

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Clinical Guideline Revision History/Information

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Cohere Medicare Advantage Policy – Physical and Occupational Therapy (PT/OT)

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Physical and Occupational Therapy (PT/OT)

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Physical and Occupational Therapy (PT/OT)	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	5
Evaluation of Clinical Harms and Benefits	5
Medical Necessity Criteria	6
Indications	6
Non-Indications	12
Level of Care Criteria	14
Procedure Codes (CPT/HCPCS)	14
Medical Evidence	23
References	24
Clinical Guideline Revision History/Information	27

Medical Necessity Criteria

Service: Physical and Occupational Therapy (PT/OT)

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.¹⁻¹⁰

- [Local Coverage Determination \(LCD\): Outpatient physical and occupational therapy services \(L33631\)](#)
 - [Billing and Coding: Outpatient physical and occupational therapy service \(A56566\)](#)
- [Local Coverage Determination \(LCD\): Outpatient physical and occupational therapy services \(L34049\)](#)
 - [Billing and Coding: Outpatient physical and occupational therapy service \(A57067\)](#)
- [Local Coverage Determination \(LCD\): Outpatient physical therapy \(L34428\)](#)
 - [Billing and Coding: CPT code 97755 – Assistive technology assessment \(A53053\)](#)
 - [Billing and Coding: Low frequency, non-contact, non-thermal ultrasound \(A53773\)](#)
 - [Billing and Coding: Outpatient physical therapy \(A53065\)](#)
- [Local Coverage Determination \(LCD\): Outpatient occupational therapy \(L34427\)](#)
 - [Billing and Coding: CPT code 97755 – Assistive technology assessment \(A53053\)](#)
 - [Billing and Coding: Low frequency, non-contact, non-thermal ultrasound \(A53773\)](#)
 - [Billing and Coding: Outpatient occupational therapy \(A53064\)](#)

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 physical therapy assistant must be under the plan of care (POC) of a physical therapist with appropriate oversight as defined by the local jurisdiction. Care delivered by a certified occupational therapist assistant must be under the 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.¹¹⁻²⁰

Medical Necessity Criteria

Indications

Physical therapy (PT) or occupational therapy (OT) services are considered appropriate if **ALL** of the following are **TRUE**:

- Therapy services are provided or supervised by a qualified physical or occupational therapist, and the service was referred to by the patient's physician^{1,3,5,9}; **AND**
- The patient's condition is such that the therapy services required can only be safely and effectively performed by a qualified therapist, supervising assistant, or clinician^{1,3,5,9}; **AND**
- The patient's condition has the potential to improve or is improving in response to therapy, maximum improvement is yet to be attained, and there is an expectation that the anticipated improvement is attainable in a reasonable and generally predictable period of time^{1,3,5,9}; **AND**
- A plan of care (POC) is developed by a physician/non-physician practitioner (NPP) or by the therapist providing services, which must be certified by the physician/NPP^{1,3,5,9}; **AND**

- The POC includes **ALL** of the following^{1,3,22,23}:
 - Short- and long-term goals with documentation on how goals will be obtained; **AND**
 - An estimated time of when goals are expected to be attained; **AND**
 - Measurable objectives; **AND**
 - The number of visits requested is appropriate for the diagnosis; **AND**
 - Therapy interventions to be used; **AND**
- The service is **ANY** of the following:
 - The service is a screening (i.e., a brief, initial assessment to determine if an evaluation is needed), and **ANY** of the following^{1,3}:
 - The screening is used to determine that a therapy evaluation and treatment would not be medically necessary; **OR**
 - The screening is used to determine the need for further evaluation by a therapist/clinician; **OR**
 - The screening includes a review of the patient's medical record, a patient interview, and/or patient observation; **OR**
 - The service is an initial evaluation (i.e., a comprehensive assessment to develop a treatment plan), and **ALL** of the following^{1,3,5}:
 - The initial evaluation determines **ANY** of the following:
 - The medical necessity of the therapy; **OR**
 - The skilled instruction and maintenance activities that the patient/caregiver can perform at home; **AND**
 - The initial evaluation documents the course of therapy through objective findings and subjective patient/caregiver self-reporting; **AND**
 - The patient has a new diagnosis or the condition is being treated in a new setting (e.g., from inpatient to outpatient); **AND**
 - The evaluation process assesses **ANY** of the following:
 - Objective measurements of activities of daily living ([ADLs] e.g., eating, swallowing, bathing, dressing, toileting, walking, climbing stairs); **OR**
 - Evaluations of clinical findings (e.g., chronicity/severity of the problem, the possibility of multi-system involvement or pre-existing conditions); **OR**
 - The extent and duration of loss of function, prior functional level, social/environmental considerations, educational level, the patient's overall physical and cognitive health status,

- social/cultural supports, psychosocial factors, or use of adaptive equipment; **OR**
 - The service is a continued treatment^{1,3,5}; **OR**
 - The service is a re-evaluation, and **ANY** of the following^{1,3,5,9}:
 - The professional assessment indicates progress toward current goals, a significant decline in the patient's condition or functional status that was not anticipated in the POC, or establishes interventions for newly developed impairments; **OR**
 - The professional assessment indicates whether continuing care, modifying goals and/or treatment, or terminating services is appropriate; **OR**
 - The POC needs to be revised or recertified if significant changes in the patient's condition or goals are made; **OR**
 - The service is maintenance therapy, and **ANY** of the following^{1,3,5,9}:
 - The service is needed to maintain the patient's current condition or prevent or slow further deterioration, even if no improvement is expected; **OR**
 - The patient's particular condition requires a qualified therapist to furnish maintenance therapy, even if the skills of a therapist are not ordinarily required to perform such procedures; **OR**
 - The service is needed to instruct the patient or caregiver regarding the maintenance program; **OR**
 - The service is needed for periodic re-evaluations or re-assessments;
- AND**
- The requested course of treatment represents a recognized, evidence-based service targeting a condition within the scope of practice for physical or occupational therapy, including **ANY** of the following therapeutic procedures and modalities:
 - Hot or cold packs^{1,3,5,9}; **OR**
 - Mechanical traction (e.g., to cervical or lumbar spine)^{1,3,5,9}; **OR**
 - Vasopneumatic devices^{1,3,5,9}; **OR**
 - Paraffin bath^{1,3,5,9}; **OR**
 - Diathermy or pulsed wave diathermy^{1,3,5,9} **OR**
 - Ultraviolet therapy^{1,3,5}; **OR**
 - Electrical stimulation^{1,3,5,9}; **OR**
 - Iontophoresis for primary focal hyperhidrosis^{1,3,5,9}; **OR**
 - Contrast baths^{1,3,5,9}; **OR**
 - Hot and cold bath education for the patient/caregiver^{1,3,5,9}; **OR**

- Ultrasound^{1.3.5.9}; **OR**
- Hubbard tank/whirlpool therapy^{1.3.5.9}; **OR**
- Non-implantable pelvic floor electrical stimulation^{1.3}; **OR**
- Computerized dynamic posturography^{5.9}; **OR**:
- Therapeutic exercises to restore or improve **ANY** of the following^{1.3.5.9}:
 - Strength and endurance (one or more areas, each 15 minutes); **OR**
 - Range of motion (one or more areas, each 15 minutes); **OR**
 - Flexibility and mobility (one or more areas, each 15 minutes); **OR**
- Manual therapy, including **ANY** of the following^{1.3.5.9}:
 - Manual traction; **OR**
 - Joint mobilization; **OR**
 - Myofascial release/soft tissue mobilization; **OR**
 - Manipulation; **OR**
 - Manual lymphatic drainage/complex decongestive therapy (MLD/CDT); **OR**
- Physical performance test or measurement^{1.3.5.9}; **OR**
- Muscle or range of motion testing^{1.3.5.9}; **OR**
- Massage therapy as an adjunctive treatment^{1.3.5.9}; **OR**
- Canalith repositioning procedure (e.g., Epley maneuver, Semont maneuver; for the treatment of benign paroxysmal positional vertigo)^{1.3.5}; **OR**
- Basic activities of daily living (BADLs) training^{1.3.9}; **OR**
- Instrumental activities of daily living (IADLs) training^{1.3.9}; **OR**
- Community/work reintegration training (e.g., shopping, transportation, money management)^{1.3.5.9}; **OR**
- Muscle re-education^{1.3.9}; **OR**
- Neuromuscular re-education^{1.3.5.9}; **OR**
- Vestibular ocular reflex training^{1.3}; **OR**
- Aquatic therapy with aquatic exercises^{1.3.5.9}; **OR**
- Gait training^{1.3.5}; **OR**
- Standardized cognitive performance testing (e.g., Ross Information Processing Assessment)^{1.3}; **OR**
- Cognitive training^{1.3}; **OR**
- Perceptual motor training^{1.3.5}; **OR**
- Sensory integration^{1.3.5.9}; **OR**
- Neurodevelopment training^{1.3}; **OR**
- Assistive technology assessment^{1.3.5.9}; **OR**
- Fine motor coordination/strengthening^{1.3.9}; **OR**

- Orthotics fitting/training (splinting, casting, strapping)^{1,3,5,9}; **OR**
- Prosthetic training^{5,9}; **OR**
- Biofeedback training^{1,3,5,9}; **OR**
- Adaptive equipment fabrication and training^{1,3,5,9}; **OR**
- Patient/caregiver education/training^{1,3,5,9}; **OR**
- Wheelchair management (e.g., assessment, fitting, training)^{1,3,5,9}; **OR**
- Removal of devitalized tissue from wound(s), non-selective debridement, without anesthesia (e.g., wet-to-moist dressings, enzymatic, abrasion, larval therapy), including topical application, wound assessment, and instructions for ongoing care^{1,3,5,9}; **OR**
- Negative pressure wound therapy as an adjunct to standard treatment^{1,3,5,9}; **OR**
- Other therapeutic procedures or modalities are not listed, so long as they are recognized, evidence-based, and within the scope of physical and occupational therapy practice.
- The service is for occupational therapy and includes **ANY** of the following therapeutic procedures or modalities:
 - Evaluation of oral and pharyngeal swallowing function*⁹; **OR**
 - Treatment of swallowing dysfunction and/or oral function feeding⁹; **OR**
 - Iontophoresis for **ANY** of the following:
 - Primary focal hyperhidrosis^{1,3,5,9}; **OR**
 - Tendonitis or calcific tendonitis⁹; **OR**
 - Bursitis⁹; **OR**
 - Adhesive capsulitis⁹; **OR**
 - Thick adhesive scars.⁹

*NOTE: The evaluation of oropharyngeal swallowing dysfunction may include: history of patient's disorder and awareness of swallowing disorder, and indications of localization and nature of disorder; medical status including nutritional and respiratory status; oral anatomy/physiology (labial control, lingual control, palatal function); pharyngeal function; laryngeal function; ability to follow directions, alertness; efforts and interventions used to facilitate normal swallow (compensatory strategies such as chin tuck, dietary changes, etc.); or identifying symptoms during attempts to swallow. The clinical examination can be divided into 2 phases: the preparatory examination with no swallow; the initial swallow examination with actual

swallow while physiology is observed. Based on the findings, an instrumental exam may be recommended.

Non-Indications

Physical therapy (PT) or occupational therapy (OT) services are not considered appropriate if **ANY** of the following is **TRUE**^{1,2}:

- 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 (SLP), which should provide different treatment goals, plans, and therapeutic modalities; **OR**
- Dry hydrotherapy massage (aquamassage, hydromassage); **OR**
- Iontophoresis for the delivery of non-steroidal anti-inflammatory drugs (NSAIDs); **OR**
- Work hardening and conditioning; **OR**
- Exercises to promote overall fitness, flexibility, endurance, aerobic conditioning, or weight reduction in the absence of a complicated patient condition; **OR**
- Anodyne; **OR**
- Low-level laser treatment/cold laser therapy; **OR**
- Massage chairs or roller beds; **OR**
- Interactive metronome therapy; **OR**
- Loop reflex training; **OR**
- Vestibular ocular reflex training; **OR**
- Continuous passive motion (CPM) device setup and adjustments; **OR**
- Craniosacral therapy; **OR**
- Electro-magnetic therapy, except as indicated for chronic wounds; **OR**
- Constraint Induced Movement Therapy (CIMT); **OR**
- Pelvic floor dysfunction (not including incontinence), including pelvic floor congestion, pelvic floor pain not of spinal origin, hypersensitive clitoris, prostatitis, cystourethrocele, enterocele, rectocele, vulvodynia, vulvar vestibulitis syndrome; **OR**
- Frequency specific microcurrent; **OR**
- Whole body periodic acceleration; **OR**
- Light beam generator therapy; **OR**

- Functional Electrical Stimulating (FES) devices other than those that assist in walking; **OR**
- Ultrasound for the treatment of **ANY** of the following^{1,3}:
 - Asthma, bronchitis, or any other pulmonary conditions; **OR**
 - Wounds; **OR**
- MLD/CDT for the treatment of **ANY** of the following^{1,3}:
 - Conditions reversible by exercise or elevation of the affected area; **OR**
 - Dependent edema related to congestive heart failure or other cardiomyopathies; **OR**
 - Patients who do not have the physical and cognitive abilities, or support systems, to accomplish self-management in a reasonable time; **OR**
 - Continuing treatment for a patient non-compliant with a program for self-management; **OR**
- Electrical stimulation for the treatment of **ANY** of the following^{1,3}:
 - Facial nerve paralysis, commonly known as Bell's palsy; **OR**
 - Motor function disorders such as multiple sclerosis; **OR**
 - Stroke, when it is determined there is no potential for restoration of function; **OR**
 - When it is the only intervention utilized purely for strengthening a muscle with at least fair-graded strength; **OR**
- Negative pressure wound therapy for the treatment of **ANY** of the following^{1,3}:
 - Stage I or II pressure ulcers; **OR**
 - Wounds with eschar if debridement is not attempted; **OR**
 - Untreated osteomyelitis within the vicinity of the wound; **OR**
 - Cancer is present in the wound; **OR**
 - Exposed vasculature, nerve, anastomotic site, or organ; **OR**
 - Active bleeding; **OR**
 - The presence of a fistula to an organ or body cavity within the vicinity of the wound; **OR**
- Group therapy including **ANY** of the following^{1,3}:
 - Groups directed by a student, therapy aide, rehabilitation technician, nursing aide, recreational therapist, exercise physiologist, or athletic trainer; **OR**
 - Routine (i.e., supportive) groups that are part of a maintenance program, nursing rehabilitation program, or recreational therapy program; **OR**
 - Groups using biofeedback for relaxation; **OR**

- Viewing videotapes; listening to audiotapes; **OR**
- Group treatment that does not require the unique skills of a therapist.

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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 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.
97163	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.
97164	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.
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 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.
97167	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.
97168	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.
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	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

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of physical and occupational therapy (PT/OT). This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Physical and occupational therapy are generally safe and effective for managing many conditions. Adverse events can include pain, soreness, swelling, headaches, dizziness, or worsening of a pre-existing condition.
- Prolonged physical therapy may increase pain in certain populations, especially among patients who are candidates for surgical interventions.^{[18-20](#)}
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Physical and occupational therapy often assist in pain management, injury recovery and prevention, and management of chronic conditions.
- Physical therapy may be beneficial for shoulder patients to improve mobility, strength and function for patients with musculoskeletal disorders.^{[18-20](#)}
- Occupational therapy interventions focusing on the functional and social needs of patients can prevent hospital readmissions by addressing activities of daily living and safety concerns.^{[21](#)}
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous

clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

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), and hand function was self-reported (e.g., Manual Ability Measure). 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.²⁴

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.²⁵

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.²⁶

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Clinical Guideline Revision History/Information

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Review History		
Version 1.1	07/18/2025	Updated links and references for CMS LCD L34049 and Billing and Coding Article A57067 per CMS update on 05/29/2025.



Cohere Medicare Advantage Policy – Physical and Occupational Therapy (PT/OT)

Clinical Policy for Medical Necessity Review

Version: 2

Policy Number: CHP-081-2

Cohere Health UMC Approval Date: April 9, 2026

Last Annual Review: April 9, 2026

Revision: Not Applicable

Next Annual Review: April 9, 2027

Important Notices

Notices & Disclaimers:

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Policy Information:

Specialty Area: Musculoskeletal Care

Policy Name: Cohere Medicare Advantage Policy - Physical and Occupational Therapy (PT/OT)

Policy Number: CHP-081-2

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Physical and Occupational Therapy (PT/OT)	4
Related Centers for Medicare & Medicaid Services (CMS)	
Documents	4
Description	9
Medical Necessity Criteria	10
Indications	10
Non-Indications	10
Procedure Codes (CPT/HCPCS)	11
Evaluation of Clinical Harms and Benefits	19
Medical Evidence	20
References	24
Policy Revision History/Information	31

Medical Necessity Criteria

Service: Physical and Occupational Therapy (PT/OT)

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD, NCD, or manual is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs, LCDs, and manuals related to *Cohere Medicare Advantage Policy - Physical and Occupational Therapy (PT/OT)* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the Medicare Benefit Policy Manual and the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 – Related CMS Policies (NCDs or LCDs)²⁻²⁷

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
LCD	Outpatient Physical and Occupational Therapy Services	L33631	Not Fully Established	- Non-indications: - Peripheral nerve blocks or electrostimulation for neuropathies or peripheral neuropathies. - High power laser therapy. - Extracorporeal shock wave therapy (ESWT).
LCD	Outpatient Physical and Occupational Therapy Services	L34049	Not Fully Established	- Non-indications: - Peripheral nerve blocks or electrostimulation for neuropathies or peripheral neuropathies. - High power laser therapy. - Extracorporeal shock wave therapy (ESWT).
LCD	Outpatient Occupational Therapy	L34427	Not Fully Established	Not applicable for MAC B (outpatient care). Use Medicare Benefit Policy Manual.
LCD	Outpatient Physical Therapy	L34428	Not Fully Established	Not applicable for MAC B (outpatient care). Use Medicare Benefit Policy Manual.
Internet-Only Manual (IOM)	Medicare Benefit Policy Manual Ch. 15 Covered Medical and Other Health Services	Chapter 15, Section 220, 230	Not Fully Established	- Removal of devitalized tissue from wounds or non-selective debridement. - Non-indications: - Peripheral nerve blocks or electrostimulation for neuropathies or peripheral neuropathies. - Low level laser therapy. - High power laser therapy. - Extracorporeal shock wave therapy (ESWT).

LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria
Other PT/OT Services As Applicable				
LCD	Psychiatric Partial Hospitalization Programs	L33626	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond OT in a partial hospitalization setting.
LCD	Psychiatric Partial Hospitalization Programs	L34196	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond OT in a partial hospitalization setting.
LCD	Partial Hospitalization Programs	L37633	Not Fully Established	Not applicable for MAC B (outpatient care). Use Medicare Benefit Policy Manual.
NCD	Diathermy Treatment	150.5	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria.
NCD	Fluidized Therapy Dry Heat for Certain Musculoskeletal Disorders	150.8	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond fluidized therapy dry heat.
NCD	Electrotherapy for Treatment of Facial Nerve Paralysis (Bell's Palsy)	160.15	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond electrotherapy for facial nerve paralysis.
NCD	Neuromuscular Electrical Stimulation (NMES)	160.12	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria.
NCD	Vertebral Axial Decompression	160.16	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal

	(VAX-D)			coverage criteria for services beyond vertebral axial decompression.
NCD	Assessing Patient's Suitability for Electrical Nerve Stimulation Therapy	160.7.1	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond assessing a patient's suitability for electrical nerve stimulation therapy.
NCD	Institutional and Home Care Patient Education Programs	170.1	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria.
NCD	Electrical Stimulation (ES) and Electromagnetic Therapy for the Treatment of Wounds	270.1	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond ES and electromagnetic therapy for the treatment of wounds.
NCD	Treatment of Decubitus Ulcers	270.4	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond treatment of decubitus ulcers.
NCD	Porcine Skin and Gradient Pressure Dressings	270.5	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond porcine skin and gradient pressure dressings.
NCD	Infrared Therapy Devices	270.6	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria.
LCD	Nerve Blocks for Peripheral Neuropathy	L35222	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond nerve blocks for peripheral neuropathy.
LCD	Nerve Blocks for Peripheral	L35249	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal

	Neuropathy			coverage criteria for services beyond nerve blocks for peripheral neuropathy.
LCD	Peripheral Nerve Blocks	L36850	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond peripheral nerve blocks.
LCD	Wound Care	L35125	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond wound care.
LCD	Wound Care	L37166	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond wound care.
LCD	Wound Care	L37228	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond wound care.
LCD	Wound and Ulcer Care	L38902	Not Fully Established	Use Medicare Benefit Policy Manual and Cohere Medicare Advantage internal coverage criteria for services beyond wound and ulcer care.
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Medicare Benefit Manual and applicable Cohere Medicare Advantage internal coverage criteria.

Description

Broadly, physical therapy (PT) 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.^{28,29} PT 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.

PT 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 (OT) 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.³⁰ OT 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

Removal of devitalized tissue from wounds or non-selective debridement is considered appropriate if **ALL** of the following are **TRUE**³¹:

- 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**:

- Peripheral nerve blocks with or without the use of electrostimulation or electrostimulation for neuropathies or peripheral neuropathies³²⁻³⁵; **OR**
- Low level laser therapy³⁶; **OR**
- High power laser therapy³⁷; **OR**
- Extracorporeal shock wave therapy (ESWT).³⁸⁻⁴⁰

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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 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 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.
97163	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.
97164	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.
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

	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.
97167	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.
97168	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.
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

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.¹

The potential clinical harms of using these criteria for physical and occupational therapy (PT/OT) may include:

- Adverse effects from delayed or denied treatment, such as continued pain, persistent wound non-healing, and tissue necrosis. This may lead to depression, isolation, and worsening distress and quality of life.⁴¹

The clinical benefits of using these criteria for physical and occupational therapy (PT/OT) may include:

- Improved patient selection for removal of devitalized tissue from wounds or non-selective debridement, resulting in better long-term outcomes. Ideal candidates should benefit from skilled wound assessment and application of therapeutic techniques to optimize wound healing.³¹
- Maintenance of rigorous patient safety standards aligned to best available evidence. Patients who receive peripheral nerve blocks with or without the use of electrostimulation are at risk for infection, anesthetic toxicity, and wrong-site performance.³³
- Appropriate allocation of healthcare resources at the individual beneficiary and population levels.

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.⁴²

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.⁴³

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.⁴⁴

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.⁴⁵

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 judgment 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.⁴⁶ 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.⁴⁷ 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.⁴⁸
- The 2024 clinical guideline on distal radius fracture rehabilitation recommends joint-specific self-report measures of the patient’s pain experience and functional disability.⁴⁹ 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.⁵⁰ 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.²⁹
- 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.⁵¹ 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.⁵² 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.⁵³

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Policy Revision History/Information

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Review History		
Version 1.1	07/18/2025	Updated links and references for CMS LCD L34049 and Billing and Coding Article A57067 per CMS update on 05/29/2025.
Version 2	04/09/2026	Annual review. New CPT Codes: 20560, 20561, 97602. Updated template, including addition of “Table 1 – Related CMS Policies” that describes Cohere definition of which LCDs/NCDs are not fully established. Cohere MA criteria updated for internal alignment across policies. Added indications for removal of devitalized tissue from wounds or non-selective debridement. Added non-indications not reflected in CMS policies: peripheral nerve blocks or electrostimulation for neuropathies or peripheral neuropathies; low level laser therapy; high power laser therapy; extracorporeal shock wave therapy (ESWT). Updated Harms and Benefits (3 new references). Updated Medical Evidence (10 new references).



Cohere Medicare Advantage Policy – Proximal Tibial Osteotomy

Clinical Guidelines for Medical Necessity Review

Version: 1
Revision Date: April 3, 2025

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Proximal Tibial Osteotomy

Date of last literature review: 3/26/2025

Document last updated: 4/2/2025

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Proximal Tibial Osteotomy	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	4
Evaluation of Clinical Harms and Benefits	4
Medical Necessity Criteria	6
Indications	6
Non-Indications	7
Level of Care Criteria	7
Procedure Codes (CPT/HCPCS)	7
Medical Evidence	8
References	9
Clinical Guideline Revision History/Information	11

Medical Necessity Criteria

Service: Proximal Tibial Osteotomy

Benefit Category

Not applicable.

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

- There are no applicable NCDs and/or LCDs for 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.¹⁻³

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of proximal tibia osteotomy. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Non-union of the osteotomy fracture. In a prospective study of 75 patients, Gilat et al. (2021) found non-union in 2.7%.⁴
- Deterioration of long-term results. Papachristou et al. (2006) followed patients who had achieved an average postoperative correction of 8.1°. After a 10-year follow-up, the average loss of postoperative correction at 10 years was 2.8°. ⁵
- Deep venous thrombosis. In the study of 75 patients by Gilat et al. (2021), deep vein thrombosis occurred in 1 patient (1.3%).⁴
- Infection. Surgical site infections are among the most serious postoperative complications. Gilat et al. (2021) found that deep infection requiring wound vacuum therapy also occurred in 1 patient (1.3%).⁴
- Damage to nerves or blood vessels. Jung et al. (2025) found that tibial nerve injury is one of the major complications that may occur in high tibial osteotomy.⁶
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Pain relief and improved knee function. In a review of 21 included studies involving 1065 people, Brouwer et al. (2014) concluded that valgus high tibial osteotomy reduces pain and improves knee function in patients with medial compartmental osteoarthritis of the knee.⁷
- Potentially delaying the need for a knee replacement. In a systematic review, Coakley et al. (2023) found that high tibial osteotomy for valgus knee may delay the need for a total knee replacement.⁸
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

- **Proximal tibial osteotomy** is considered appropriate if **ALL** of the following are **TRUE**^{4,8,9-22}:
- ◆ **ANY** of the following:
 - 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:
 - Genu valgum; **OR**
 - Knee instability with **ANY** of the following^{10,22}:
 - 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 condyle¹³; **OR**
 - Tibial torsion with **ALL** of the following¹⁴:
 - 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)¹⁵; **OR**
 - Unicompartamental degenerative knee arthritis with **ALL** of the following⁴:
 - Knee range of motion includes **ALL** of the following:

- ◆ Knee extension is normal or flexion contracture is not greater than 10°¹⁴; **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 only¹⁵; **OR**
 - ◆ Marginal osteophytes or subchondral sclerosis in the medial compartment only with joint space narrowing (less than 50%)¹⁵; **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**²²:
- ◆ 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°)¹⁴; **OR**
 - ◆ Body mass index (BMI) greater than or equal to 30kg/m²⁴; **OR**
 - ◆ Lower extremity ischemia; **OR**
 - ◆ Active infection.

Level of Care Criteria

Inpatient or Outpatient.

Procedure Codes (HCPCS/CPT)

HCPCS/CPT Code	Code Description
27457	Osteotomy, proximal tibia, including fibular excision or osteotomy (includes correction of genu varus [bowleg] or genu valgus [knock-knee]); after epiphyseal closure
27455	Osteotomy, proximal tibia, including fibular excision or osteotomy (includes correction of genu varus [bowleg] or genu valgus [knock-knee]); before epiphyseal closure

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

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.⁸

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, bicompartamental 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.¹⁵

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.²

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.²¹ 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.¹³

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Clinical Guideline Revision History/Information

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Review History		



Cohere Medicare Advantage Policy – Proximal Tibial Osteotomy

Clinical Policy for Medical Necessity Review

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Policy Information:

Specialty Area: Musculoskeletal Care

Policy Name: Cohere Medicare Advantage Policy- Proximal Tibial Osteotomy

Policy Number: CHP-067-2

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Proximal Tibial Osteotomy	4
Related Centers for Medicare & Medicaid Services (CMS)	
Documents	4
Description	5
Medical Necessity Criteria	6
Indications	6
Non-Indications	7
Definitions and Notes	7
Procedure Codes (CPT/HCPCS)	8
Evaluation of Clinical Harms and Benefits	8
Medical Evidence	10
References	12
Policy Revision History/Information	15

Medical Necessity Criteria

Service: Proximal Tibial Osteotomy

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Proximal Tibial Osteotomy* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 – Related CMS Policies (NCDs or LCDs)¹

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Description

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-kneed deformity (genu valgum) or genu varum (bowlegs). A PTO can be conducted in several ways, including as a lateral closing wedge (LCW) or a medial opening wedge procedure (MOW). In both procedures, a small wedge-shaped cut is made in the tibia. In an LCW, a wedge of bone is removed from the lateral tibia. During an MOW, the cut is filled with a wedge-shaped spacer made of metal or bone.²⁻⁴

Medical Necessity Criteria

Indications

Proximal tibial osteotomy is considered appropriate if **ANY** of the following is **TRUE**⁵⁻¹⁸:

- Unicompartamental degenerative knee arthritis with **ALL** of the following¹¹:
 - Knee range of motion, including **ALL** of the following⁹:
 - Flexion contracture less than 10°; **AND**
 - Knee flexion greater than or equal to 90°; **AND**
 - Imaging with radiologic report shows evidence of knee arthritis including **ANY** of the following^{5,8,10}:
 - Weight-bearing radiograph shows joint space narrowing (25%-75%) in the medial compartment only¹⁰; **OR**
 - Magnetic resonance imaging (MRI) shows medial compartment Grade 1-3 changes; **OR**
 - MRI documents medial compartment bone edema (spontaneous osteonecrosis of the medial femoral condyle)⁸; **AND**
 - Failure of 3 months of conservative management^A, 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**
 - Progression or worsening of symptoms due to PT/HEP treatment; **AND**
 - **ANY** of the following:
 - Corticosteroid injection if medically appropriate¹⁹; **OR**
 - Documentation that corticosteroid injection is contraindicated; **AND**
 - Documentation of impact on activities of daily living (ADLs); **AND**
 - **ANY** of the following²⁰:

- 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**
- Valgus malalignment (mechanical femorotibial angle greater than or equal to 4°); **OR**
- Knee instability with **ANY** of the following^{3,18}:
 - Anterior cruciate ligament (ACL) deficiency with **ANY** of the following:
 - Coronal malalignment; **OR**
 - Medial compartment arthrosis⁵; **OR**
 - Sagittal malalignment; **OR**
 - Varus malalignment⁷; **OR**
 - Chronic lateral/posterolateral ligamentous insufficiency; **OR**
- Osteogenesis imperfecta; **OR**
- Posttraumatic tibial malalignment²¹; **OR**
- Tumor excision or biopsy.¹⁰

Non-Indications

Proximal tibial osteotomy is not considered appropriate if **ANY** of the following is **TRUE**¹⁸:

- Body mass index (BMI) greater than or equal to 30kg/m^{2 11,15}; **OR**
- Lower extremity vascular disease that would impact healing²²; **OR**
- Meniscal deficiency; **OR**
- Moderate to severe osteoarthritis of the patellofemoral or lateral compartment; **OR**
- Rheumatoid arthritis or other inflammatory arthropathy.

Definitions and Notes

^A **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)

CPT/HCPCS Code	Code Description
27455	Osteotomy, proximal tibia, including fibular excision or osteotomy (includes correction of genu varus [bowleg] or genu valgus [knock-knee]); before epiphyseal closure
27457	Osteotomy, proximal tibia, including fibular excision or osteotomy (includes correction of genu varus [bowleg] or genu valgus [knock-knee]); after epiphyseal closure

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.¹

The potential clinical harms of using these criteria for proximal tibial osteotomy may include:

- Adverse effects from delayed or denied treatment, such as increased knee pain and progression of the knee osteoarthritis to involve more than one compartment, which may ultimately result in the need for total knee replacement.¹⁷
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria for proximal tibial osteotomy may include:

- Improved patient selection for proximal tibial osteotomy resulting in better long-term outcomes.
- Maintenance of rigorous patient safety standards aligned to best available evidence.
- Appropriate allocation of healthcare resources at the individual beneficiary and population levels.

Medical Evidence

Bin et al. (2023) reviewed 21 studies, including 17 randomized controlled 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 (HTO), bicompartamental knee arthroplasty (BCA), bi-unicompartmental knee arthroplasty (BIU), and knee joint distraction (KJD). The authors found that 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.¹⁷

Coakley et al. (2023) conducted a systematic review of the outcomes of HTO for valgus knee. The review included 17 papers collectively representing 517 knee procedures. The authors found HTO to be a viable treatment for correcting hip-knee-ankle angles and reported evidence suggesting that the procedure may delay the need for a total knee replacement.¹²

A systematic review and meta-analysis conducted by Wu et al. (2022) compared the clinical outcomes of proximal fibular osteotomy (PFO) with those of high tibial osteotomy (HTO) for treating knee osteoarthritis. The review included 14 randomized controlled trials and nine observational studies. The comparison of the two procedures was based on mean operation time, intraoperative bleeding, length of alignment, and postoperative complications. The authors concluded that while the short-term efficacy of PFO and HTO was comparable, PFO was associated with a reduction in operation length, intraoperative bleeding, hospital stay, and postoperative complications.²³

Murray et al. (2021) discussed the indications, techniques, and outcomes for high tibial osteotomy. Evidence supports the procedure as a durable solution for joint preservation. An analysis of research studies showed positive outcomes with the lateral closing wedge and medial opening wedge, including the mechanical medial proximal tibial angle.³

The American Academy of Orthopaedic Surgeons (AAOS) published a clinical practice guideline on the management of osteoarthritis of the knee (non-arthroplasty). According to the guidelines, 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.¹⁸ 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.¹⁵

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Policy Revision History/Information

Original Date: April 03, 2025		
Review History		
Version 2	03/26/2026	Annual review. Updated template, including addition of “Table 1 – Related CMS Policies” that describes Cohere definition of which LCDs/NCDs are not fully established. Cohere MA criteria updated for internal alignment across policies. Updated language for imaging of knee arthritis indication. Updated Harms and Benefits section.



Cohere Medicare Advantage Policy – Sacroiliac Joint Fusion

Clinical Policy for Medical Necessity Review

Version: 4

Policy Number: CHP-096-4

Cohere Health UMC Approval Date: May 7, 2026

Last Annual Review: May 7, 2026

Revision: Not Applicable

Next Annual Review: May 7, 2027

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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Policy Information:

Specialty Area: Musculoskeletal Care

Policy Name: Cohere Medicare Advantage Policy - Sacroiliac Joint Fusion

Policy Number: CHP-096-4

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Sacroiliac Joint Fusion	4
Related Centers for Medicare & Medicaid Services (CMS)	
Documents	4
Description	6
Medical Necessity Criteria	6
Indications	6
Non-Indications	9
Definitions and Notes	10
Procedure Codes (CPT/HCPCS)	11
Clinical Harms and Benefits	11
Medical Evidence	13
References	15
Policy Revision History/Information	17

Medical Necessity Criteria

Service: Sacroiliac Joint Fusion

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy – Sacroiliac Joint Fusion* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 – Related CMS Policies (NCDs or LCDs)²⁻⁶

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	Percutaneous minimally invasive fusion/stabilization of the sacroiliac joint for the treatment of back pain	L36000	Not fully established	• Nicotine use • Open SI joint fusion • Revision or replacement SI joint fusion Non-indications: • Dorsal approach with the use of an intra-articular device
LCD	Minimally-invasive Surgical (MIS) Fusion of the Sacroiliac Joint (SI)	L36406	Not fully established	• Nicotine use • Open SI joint fusion • Revision or replacement SI joint fusion Non-indications: • Systemic arthropathy • Dorsal approach with the use of an intra-articular device
LCD	Minimally Invasive Arthrodesis of the Sacroiliac Joint (SIJ)	L39797	Not fully established	• Nicotine use • Open SI joint fusion • Revision or replacement SI joint fusion Non-indications: • Systemic arthropathy • Dorsal approach with the use of an intra-articular device
LCD	Minimally Invasive Arthrodesis of the Sacroiliac Joint (SIJ)	L39802	Not fully established	• Nicotine use • Open SI joint fusion • Revision or replacement SI joint fusion Non-indications: • Systemic arthropathy

				• Dorsal approach with the use of an intra-articular device
LCD	Minimally Invasive Arthrodesis of the Sacroiliac Joint (SIJ)	L39810	Not fully established	• Nicotine use • Open SI joint fusion • Revision or replacement SI joint fusion Non-indications: • Systemic arthropathy • Dorsal approach with the use of an intra-articular device
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Description

Sacroiliac (SI) joint fusion is a surgical procedure that fuses the iliac bone 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^{7,8}:
 - 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)⁹; **AND**
 - Nonradicular, typically unilateral, pain that is maximal below the L5 vertebrae, localized over the posterior SI joint, and consistent with SI joint pain⁹; **AND**
 - Positive response to **AT LEAST THREE** of the following provocative tests (unless medically contraindicated, [e.g., acute pelvic ring disruption])⁹:
 - 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 findings⁹:
 - 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 studies⁹:
 - Anteroposterior (AP) plain radiograph of the pelvis to rule out concomitant hip pathology; **AND**
 - Computed tomography (CT) or magnetic resonance imaging (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^A, 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 12 months⁹; **OR**
 - Progression or worsening of symptoms due to PT/HEP treatment; **AND**
- **ALL** of the following regarding prior SI joint injections⁹:
 - 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**
- CT or 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:
 - 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)¹⁰; **OR**
 - 30 or greater on the Oswestry Disability Index (ODI)¹¹; **AND**
- Numeric Rating Scale (NRS) baseline score of at least 5¹¹; **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)¹⁰; **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 present⁹:
 - Acute traumatic instability; **OR**
 - Infection; **OR**
 - Tumor; **OR**
- Presence of **ANY** of the following⁹:

- 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)¹²; **OR**
- Dorsal approach with the use of an intra-articular device that does not traverse the SI Joint.

Definitions and Notes

^AFailure 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)

CPT/HCPCS Code	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

Clinical Harms and Benefits

Cohere Health Medicare Advantage determinations are made in accordance with CMS's decisioning requirements outlined in 42 CFR 422.101. When CMS guidelines are not fully established, Cohere Health develops publicly accessible medical necessity criteria based on widely accepted medical society guidelines and/or robust clinical literature. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.¹

The potential clinical harms of using the internal coverage criteria in *Cohere Medicare Advantage Policy – Sacroiliac Joint Fusion* include:

- Adverse effects from delayed or denied treatment, which may include denying sacroiliac (SI) joint fusion based on the requirement for nicotine

users (unless surgery is urgently required for documented reasons), thus potentially increasing SI joint pain.⁸

- Risks associated with inappropriate procedures, which may confer serious complications. Risk may include painful hardware, deep wound infections, nerve root irritation, localized muscle herniation at the autograft site, peroneal nerve entrapment, neurolysis, intraoperative iliac crest fracture, and pulmonary emboli for those who receive open SI joint fusion.¹³
- Increased healthcare costs and complications from the avoidable use of emergency services and additional treatments.

The potential clinical benefits of using *Cohere Medicare Advantage Policy - Sacroiliac Joint Fusion* include:

- Improved patient selection for SI joint fusion, supporting better health outcomes.
- Care aligned to recommendations of society guidelines, including non-indication for systemic arthropathy, as advised by the American Academy of Orthopaedic Surgeons (AAOS).⁸
- Appropriate allocation of healthcare resources at the individual beneficiary and population levels.

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).¹⁴

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%).¹⁵ 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.¹⁶

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. In those who received open surgery, complications included painful hardware, deep wound infections, nerve root irritation, localized muscle herniation at the autograft site, peroneal nerve entrapment, neurolysis, intraoperative iliac crest fracture, and pulmonary emboli for those who received open SI joint fusion. In those with MIS, complications included new-onset facet joint pain, trochanteric bursitis, deep wound infections, new onset of low-back or leg pain, superficial cellulitis, and other complications. Overall, the authors felt their review highlighted the efficacy of SI joint fusion in appropriately selected patients.¹³

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.⁹

In 2016, the American Academy of Orthopaedic Surgeons (AAOS) published an information statement regarding tobacco use and orthopaedic surgery. The authors noted that those who have direct or second-hand tobacco exposure have increased bone loss, lower bone mineral density, and increased risk of osteoporosis-related fractures compared to non-smokers or former smokers. Smokers also experience increased chronic musculoskeletal pain, including low back pain, compared to non-smokers. Notably, non-smokers experience the lowest rates of adverse surgical events post-elective surgery. However, the authors noted that smoking cessation prior to surgery can help reduce adverse events.⁸

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Policy Revision History/Information

Original Date: May 24, 2024		
Review History		
Version 2	06/10/2024	422.101 Disclaimer added
Version 3	05/22/2025	Annual policy review and restructure. Incorporated newly published CMS guidance (L39797, L39810, L39812) Removed code 0809T - temporary code has been deleted. Literature review - medical evidence updated (including references). Addition of medically necessary patient selection criteria regarding smoking status as a modifiable and critical driver in creating optimal surgical outcomes
Version 3.1	07/18/2025	Updated CMS link and reference for L39797 per CMS update effective 06/20/2025 retroactive to 04/17/2025. No criteria changes required. Billing and Coding Article A59672 link and reference unchanged.
Version 3.2	12/01/2025	Per CMS Updates: L39812 and A59697 removed from policy; retired by CMS 10/23/2025 L39810 and A59695 links and references updated, no criteria changes.
Version 4	05/07/2026	Annual Review.

		Updated template, including addition of “Table 1 – Related CMS Policies” that describes Cohere's definition of which LCDs/NCDs are not fully established. Cohere MA criteria updated for internal alignment across policies. Updated conservative care indication. Clarified language to improve usability and organization. No code changes. Updated Description. Updated the Harms and Benefits section. Expanded the Medical Evidence section. References reviewed and updated.



Cohere Medicare Advantage Policy – Sacroiliac Joint Injections and Radiofrequency Ablation

Clinical Policy for Medical Necessity Review

Version: 2.1

Cohere Health UMC Approval Date: March 20, 2025

Last Annual Review: Not Applicable

Revision: August 18, 2025

Next Annual Review: March 20, 2026

Important Notices

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Guideline Information:

Specialty Area: Musculoskeletal Care

Policy Name: Cohere Medicare Advantage Policy - Sacroiliac Joint Injections

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Sacroiliac Joint Injections and Radiofrequency Ablation	4
Related CMS Documents	4
Description	5
Medical Necessity Criteria	5
Indications	5
Non-Indications	7
Level of Care Criteria	8
Procedure Codes (CPT/HCPCS)	8
Evaluation of Clinical Harms and Benefits	9
Medical Evidence	10
References	12
Clinical Guideline Revision History/Information	16

Medical Necessity Criteria

Service: Sacroiliac Joint Injections and Radiofrequency Ablation

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.¹⁻⁶

- [Local Coverage Determination. Sacroiliac Joint Injections and Procedures. \(L39383\)](#)
 - [Billing and Coding: Sacroiliac Joint Injections and Procedures. \(A59154\)](#)
- [Local Coverage Determination. Sacroiliac Joint Injections and Procedures. \(L39455\)](#)
 - [Billing and Coding: Sacroiliac Joint Injections and Procedures. \(A59233\)](#)
- [Local Coverage Determination. Sacroiliac Joint Injections and Procedures. \(L39462\)](#)
 - [Billing and Coding: Sacroiliac Joint Injections and Procedures. \(A59244\)](#)
- [Local Coverage Determination. Sacroiliac Joint Injections and Procedures. \(L39464\)](#)
 - [Billing and Coding: Sacroiliac Joint Injections and Procedures. \(A59246\)](#)
- [Local Coverage Determination. Sacroiliac Joint Injections and Procedures. \(L39402\)](#)
 - [Billing and Coding: Sacroiliac Joint Injections and Procedures. \(A59192\)](#)
- [Local Coverage Determination. Sacroiliac Joint Injections and Procedures. \(L39475\)](#)
 - [Billing and Coding: Sacroiliac Joint Injections and Procedures. \(A59257\)](#)

Description

Injections for sacroiliac (SI) joint disorders (e.g., chronic SI joint pain, trauma, arthritis) are given for diagnostic or therapeutic purposes. The standard of care for chronic SI joint pain begins with non-surgical management, such as physical therapy, analgesic medication (e.g., non-steroidal anti-inflammatory drugs), home exercise programs, or cognitive behavioral therapy.¹⁻⁶ When conservative treatments are ineffective, invasive procedures are considered, including local anesthetic injections (with or without steroids) into the SI joint between the spine and the pelvis.¹⁻⁶ SI joint injections are used to diagnose SI joint disorders, treat pain and inflammation, and improve mobility.⁷

Radiofrequency ablation (RFA) removes unwanted tissue using radio waves traveling through electrodes.¹⁻⁶ For SI joint pain, RFA has been studied to target sensory nerve fibers and interrupt pain signals.¹⁻⁶ Evidence of RFA for the treatment of SI joint pain is limited; therefore, it is considered clinically unproven and not medically reasonable and necessary.¹⁻⁶

Medical Necessity Criteria

Indications

A **sacroiliac (SI) joint injection** is considered appropriate if **ALL** of the following are **TRUE**^{1-7,11-25}:

- Clinical evaluation (including history and physical examination) shows **ALL** of the following:
 - Low back pain for at least 3 months; **AND**
 - Moderate to severe low back pain, as measured on a pain scale (e.g., NRS or VAS); **AND**
 - Low back pain, primarily over the SI joints; **AND**
 - Clinical findings and/or imaging studies do not suggest any other diagnoses or obvious cause of lumbosacral pain; **AND**
 - Positive response to **AT LEAST THREE** SI joint provocative tests²⁰⁻²¹:
 - Distraction test; **OR**
 - Compression test; **OR**
 - Thigh thrust; **OR**
 - Posterior shear test; **OR**
 - Gaenslen's test; **OR**
 - Yeoman's test; **OR**
 - FABER maneuver/Patrick's sign; **OR**

- Posterior provocation test; **AND**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 4 weeks. Documentation should include detailed evidence of the measures taken rather than solely a physician's statement²²; **AND**
- **ANY** of the following:
 - The injection is a **diagnostic SI joint injection**, and **ALL** of the following are **TRUE**:
 - No other injections in the lumbosacral spine are performed at the same time as the SI joint injection; **AND**
 - No more than 2 diagnostic injections, unilateral or bilateral, for diagnostic purposes*; **OR**
 - The injection is a **therapeutic SI joint injection**, and **ALL** of the following are **TRUE**:
 - No other injections in the lumbosacral spine are performed at the same time as the SI joint injection; **AND**
 - No more than 4 therapeutic SI joint injections, unilateral or bilateral, 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 injection at the same site, with greater than or equal to 75% pain relief; **OR**
 - For a subsequent therapeutic injection, the patient has **ALL** of the following:
 - The most recent therapeutic SI joint injection at the same site provided **ANY** of the following:
 - Greater than or equal to 50% pain relief for 3 months; **OR**
 - Greater than or equal to 50% consistent improvement in ability to perform previously painful movements and activities of daily living for 3 months; **AND**
 - The patient should be continuing conservative care and be part of an ongoing and be actively participating in a rehabilitation program, home exercise program, or functional restoration program^{1-6, 18-19}; **AND**
 - **ANY** of the following:
 - Treatment has not exceeded 12 months; **OR**
 - Treatment has exceeded 12 months, and **ALL** of the following:

- Pain is severe enough to cause a significant degree of functional disability or vocational disability and providers use established and measurable goals and objective scales to assess functionality and activities of daily living measures; **AND**
- Injections provide greater than or equal to 50% sustained and consistent improvement of pain and/or 50% sustained and consistent objective improvement in function (using the same scale as baseline) for at least 3 months; **AND**
- Rationale for the continuation of injections includes but is not limited to the patient being a high-risk surgical candidate, the patient does not desire surgery, and/or the recurrence of pain in the same location was sustained and consistently relieved with the injections for at least 3 months; **AND**
- The primary care provider is notified regarding the continuation of procedures and prolonged repeat steroid use to allow for systematic care delivery, treatment surveillance, and multidisciplinary biopsychosocial rehabilitation.

*NOTE: To clarify, an SI joint injection session if performed on one side first and then on the opposite side at a different session would qualify as two (2) sessions.

Non-Indications

A **sacroiliac (SI) joint injection** is not appropriate if **ANY** of the following is **TRUE**¹⁻⁶:

- SI joint injection is performed without fluoroscopy or computed tomography (CT) guidance; except when ultrasound guidance is reasonable and necessary where there is a documented contrast allergy or pregnancy²³; **OR**
- Request for SI joint injection with biologics (e.g., platelet-rich plasma, stem cells, amniotic fluid, etc.); **OR**
- Request for SI joint injection to treat non-specific low back pain, axial spine pain primary above the level of L5, complex regional pain syndrome, widespread diffuse pain, chronic pain syndrome, or pain from neuropathy; **OR**

- Request for SI joint injection used as part of a series of lumbar spine and musculoskeletal injections to treat nonspecific or chronic low back pain; **OR**
- Request for diagnostic anesthetic blocks of the nerves innervating the SI joint to assess candidacy for radiofrequency ablation (RFA); **OR**
- Request for SI joint RFA or RFA of nerves innervating the SI joint.

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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 healthcare professional time
G0260	Injection procedure for sacroiliac joint; provision of anesthetic, steroid and/or other therapeutic agent, with or without arthrography

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.

The potential clinical harms of using these criteria for sacroiliac joint injections and radiofrequency ablation may include:

- Adverse effects from delayed or denied treatment, such as increased pain or decreased mobility, can reduce the ability to perform activities of daily living.
- SI joint injection delay may result in increased healthcare utilization for emergency room visits or additional treatment, opioid dependence, and decreased quality of life.^{7,8}
- Few adverse effects of SI joint injection have been reported; however, the risks that have been associated with SI joint injections include injection-site pain, vasovagal reactions, hematomas, sciatic nerve palsy, and septic arthritis.^{1-6,9}

The clinical benefits of using these criteria for sacroiliac joint injections and radiofrequency ablation may include:

- Improved patient outcomes through timely and appropriate access to SI injections. Careful patient selection confers the best outcomes and can prevent adverse events.⁹⁻¹⁰
- Appropriate management of SI joint disorders such as chronic SI joint pain, trauma, and arthritis. For example, patients with chronic SI joint pain who receive SI joint injections report improvements in pain and functional outcomes.¹¹⁻¹² Improvements in other outcomes, including disability and work status over time, were also found in patients who received SI joint injections.¹³

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. This study found fair to moderate evidence for the effectiveness of therapeutic SI joint injections.¹¹

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 often includes sacroiliitis. From 7 studies reviewed, the authors concluded that SI joint corticosteroid injections can be appropriate and effective in treating 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.¹²

Chen et al (2021) conducted a double-blind, randomized controlled trial to compare intra-articular platelet-rich plasma injections with intra-articular steroid injections for the treatment of SI joint pain. Improvements were seen in both groups; however, patients in the steroid injection group reported lower pain scores than those in the plasma injection group. At months 1, 3, and 6, the steroid injection group had more responders (defined as pain score improvements by 50% or more) and lower pain scores than patients receiving plasma. Functional outcomes were also better at months 1 and 3 in the steroid injection group. Although both groups showed improvements, more patients receiving steroid injections reported 50% or more pain reduction as well as faster improvements in functional outcomes for SI joint pain.²⁴

Aranke et al (2022) reviewed recent literature regarding minimally invasive and conservative interventions for the treatment of SI joint pain. Treatment

options include physical therapy, intra-articular joint injections, radiofrequency ablation (RFA), platelet-rich plasma injections, and other injections with biologics. While positive outcomes are reported, evidence supports the use of minimally invasive procedures in combination with conservative management. The authors note a lack of high-quality evidence to support the use of RFA or SI injections with biologics.²⁵

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Policy Revision History/Information

Original Date: March 20, 2025		
Review History		
Version 2	06/26/2025	Revision Added "unilateral or bilateral" to both the diagnostic and therapeutic indications for number of injections. Added a note: "**NOTE: To clarify, an SI joint injection session if performed on one side first and then on the opposite side at a different session would qualify as two (2) sessions."
Version 2.1	08/18/2025	Revision Updated link and reference for L39383 to align with 03/27/2025 CMS update

Cohere Medicare Advantage Policy – Sacroiliac Joint Injections and Radiofrequency Ablation (RFA)

Clinical Policy for Medical Necessity Review

CHP-056-3.1 Version 3.1

Cohere UMC Approval Date: March 10, 2026

Last Annual Review: March 10, 2026

Revision Date: April 1, 2026

Next Annual Review: March 10, 2027

Specialty: Musculoskeletal Care

Population Type: Adult (18+ years old), Pediatric (0-17 years old)

Table of contents

Procedure Codes (CPT/HCPCS)	3
Important Notices	4
Service: Sacroiliac Joint Injections and Radiofrequency Ablation (RFA) - Description	5
Service: Sacroiliac Joint Injections and Radiofrequency Ablation (RFA) - Medical Necessity Criteria	6
Evaluation of Clinical Harms and Benefits	9
Medical Evidence	10
References	11
Policy Revision History/Information	12

Procedure Codes (CPT/HCPCS)

Service: Sacroiliac Joint Injections and Radiofrequency Ablation (RFA)	
Code	Description
27096	Injection procedure for sacroiliac joint, anesthetic/steroid, with image guidance (fluoroscopy or CT) including arthrography when performed
64451	Injection(s), anesthetic agent(s) and/or steroid; nerves innervating the sacroiliac joint, with image guidance (ie, fluoroscopy or computed tomography)
64625	Radiofrequency ablation, 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

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Service: Sacroiliac Joint Injections and Radiofrequency Ablation (RFA) - 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.

Service: Sacroiliac Joint Injections and Radiofrequency Ablation (RFA) - Medical Necessity Criteria

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [the CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Sacroiliac Joint Injections and Radiofrequency Ablation (RFA)* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 - Related CMS Policies (NCDs or LCDs)²⁻⁶

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	Sacroiliac Joint Injections and Procedures	L39383	Fully established	N/A
LCD	Sacroiliac Joint Injections and Procedures	L39455	Fully established	N/A
LCD	Sacroiliac Joint Injections and Procedures	L39462	Fully established	N/A
LCD	Sacroiliac Joint Injections and Procedures	L39402	Fully established	N/A

LCD	Sacroiliac Joint Injections and Procedures	L39475	Fully established	N/A
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Indications

- A **sacroiliac (SI) joint injection** is considered appropriate if **ALL** of the following are **TRUE**⁷⁻¹²:
 - 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^A, 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 are **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 radiographs¹³; **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 and Notes

^AFailure 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

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.¹

The potential clinical harms of using these criteria for sacroiliac (SI) joint injections and radiofrequency ablation (RFA) may include:

- Adverse effects from delayed or denied treatment, such as increased pain or decreased mobility, can reduce the ability to perform activities of daily living.
- Increased healthcare costs and complications may result from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria for SI joint injections and RFA may include:

- Improved patient selection for SI joint injections and RFA, resulting in better long-term outcomes. Ideal candidates present with at least 3 months of moderate-to-severe low back pain localized to the SI joint and have failed conservative management. According to Janapala et al. (2023), a single-arm meta-analysis showed SI joint injection resulted in a significant reductions in the Numeric Rating Scale pain score of 2.979 (95% confidence interval [CI], -3.11 to -2.85; $P < 0.0001$) and 3.069 (95% CI, -3.35 to -2.78; $P < 0.0001$) at 3 and 6 months follow-up, respectively.¹¹
- Maintenance of rigorous patient safety standards aligned to best available evidence. Patients undergoing SI joint injection with ultrasound guidance may experience inaccurate intra-articular injectate placement.¹³
- Appropriate allocation of healthcare resources at the individual beneficiary and population levels.

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.¹¹

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.¹⁴

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.¹⁵

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.¹⁶

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Policy Revision History/Information

Clinical Policy Version	Date	Review History
Version 1	03/20/2025	Original Date.
Version 2	06/26/2025	Revision. Added "unilateral or bilateral" to both the diagnostic and therapeutic indications for number of injections. Added a note: "**NOTE: To clarify, an SI joint injection session if performed on one side first and then on the opposite side at a different session would qualify as two (2) sessions."
Version 2.1	08/18/2025	Revision. Updated link and reference for L39383 to align with 03/27/2025 CMS update.
Version 3	03/10/2026	Annual Review. Updated template, including addition of "Table 1 - Related CMS Policies" that describes Cohere definition of which LCDs/NCDs are not fully established. Cohere MA criteria updated for internal alignment across policies. Updated conservative care section for clarity; refined language and added options for worsening symptoms with PT and for ongoing rehabilitation for repeat injections. Updated references. Minor edits for readability and clarity.
Version 3.1	04/01/2026	Revision. Updated link and reference for L39383.



Cohere Medicare Advantage Policy – Shoulder Arthroplasty

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 29, 2024

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy – Shoulder Arthroplasty

Date of last literature review: 5/29/2024

Document last updated: 5/29/2024

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Shoulder Arthroplasty	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	6
Level of Care Criteria	7
Procedure Codes (CPT/HCPCS)	7
Medical Evidence	9
References	10
Clinical Guideline Revision History/Information	13

Medical Necessity Criteria

Service: Shoulder Arthroplasty

Benefit Category

Not applicable.

Recommended Clinical Approach

Shoulder arthroplasty is considered the standard treatment for diffuse glenohumeral joint osteoarthritis (GJO).¹ Total shoulder arthroplasty (TSA) is associated with improved pain and functional outcomes compared to hemiarthroplasty.² Guidelines published by the American Academy of Orthopaedic Surgeons (AAOS) indicate that anatomic TSA or reverse TSA is acceptable for treating GJO in patients with excessive glenoid bone loss, with or without rotator cuff dysfunction.² Indications have recently expanded for reverse shoulder arthroplasty. Revision surgery may be indicated for patients who had a joint arthroplasty and present with pain that is due to loosening, failure of the prosthesis, instability, or infection.

Medical Necessity Criteria

Indications

→ **Shoulder arthroplasty** is considered medically appropriate if **ALL** of the following are **TRUE**¹⁻¹⁶:

- ◆ The patient has not smoked in greater than or equal to the last 6 weeks; **AND**
- ◆ **ANY** of the following is **TRUE**:
 - The procedure is a hemiarthroplasty, and **ANY** of the following is **TRUE**:
 - Rotator cuff tear arthropathy; **OR**
 - Malignancy of the glenohumeral joint; **OR**
 - Humeral head osteonecrosis with preserved glenoid; **OR**
 - Complex proximal humerus fracture¹⁵; **OR**
 - Primary osteoarthritis and **ANY** of the following is **TRUE**:
 - ◆ Glenoid bone stock is inadequate; **OR**

- ◆ The risk of glenoid loosening is high (i.e., young patients, heavy laborers)¹⁶; **OR**
- The procedure is a **total shoulder arthroplasty** and **ANY** of the following is **TRUE**:
 - **ALL** of the following:
 - ◆ The patient has disabling pain and loss of motion; **AND**
 - ◆ Radiographs are consistent with advanced osteoarthritis (e.g., destruction of shoulder joint, cystic changes, severe narrowing of joint space)²; **AND**
 - ◆ Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **OR**
 - Humeral head osteonecrosis⁴⁻⁵; **OR**
- The procedure is a **reverse total shoulder arthroplasty**, and **ANY** of the following is **TRUE**:
 - Complex proximal humerus fractures^{6,15}; **OR**
 - Failed shoulder arthroplasty⁷; **OR**
 - Failed shoulder hemiarthroplasty⁷; **OR**
 - Failed rotator cuff repair, deemed irreparable^{1,8}; **OR**
 - Humeral head osteonecrosis; **OR**
 - Massive rotator cuff tear⁹; **OR**
 - Proximal humerus fracture with **ANY** of the following¹⁰⁻¹¹:
 - ◆ Rotator cuff deficiency; **OR**
 - ◆ Malunion; **OR**
 - Reconstruction after tumor resection; **OR**
 - Rheumatoid arthritis and **ALL** of the following¹²⁻¹³:
 - ◆ Failure of conservative management (e.g., rest, analgesics, disease-modifying antirheumatic drugs [DMAR], physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include

- detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- ◆ Imaging confirms the presence of advanced rheumatoid arthritis; **AND**
 - ◆ Replacement is indicated due to **ANY** of the following:
 - Disabling pain; **OR**
 - Functional disability; **OR**
 - Rotator cuff deficient arthropathy⁹; **OR**
 - Rotator cuff tear arthropathy; **OR**
 - Arthritis with posterior glenohumeral subluxation; **OR**
 - Severe arthritis with glenoid bone loss, with or without glenohumeral instability; **OR**
 - The procedure is a **revision total shoulder arthroplasty**, and **ALL** of the following are **TRUE**:
 - 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).

Non-Indications

→ **Shoulder Arthroplasty** is not considered appropriate if **ANY** of the following is **TRUE**¹⁴:

- ◆ Active joint infection; **OR**
- ◆ Systemic infection; **OR**
- ◆ Neuropathic joint; **OR**
- ◆ The patient has smoked within the last 6 weeks.¹⁷⁻¹⁸

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
20680	Removal of deep bone implant
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

Harrison et al. (2020) explore the indications and outcomes of revision reverse total shoulder arthroplasty. Rates of complications and reoperation are high however, revision of failed hemiarthroplasty or total shoulder arthroplasty increases patient outcomes. The authors note that many revision procedures involved a reverse design contributing to higher complications. Factors contributing to higher outcomes include the loosening of an existing component (cemented or uncemented), the presence of prior allograft composites, and deficiencies of bone or soft tissue due to implant wear or a previous procedure.⁷

Kelly and Myeroff (2020) analyze trends, outcomes, and principles of treatment options for proximal humerus fractures in patients over the age of 65. The review focuses on reverse shoulder arthroplasty (RSA). Rates of RSA have increased while rates of hemiarthroplasty have decreased. Older adults had lower revision rates with shoulder arthroplasty compared to hemiarthroplasty. Compared to other surgical procedures, RSA offers superior scores of functional outcomes, range of motion, and patient satisfaction.¹⁰

Leroux et al. (2018) note an increase in shoulder arthroplasty for patients with rheumatoid arthritis (RA) and rotator cuff disease. Data show a trend of performing shoulder arthroplasty for rotator cuff disease compared to repair. A total of 332,593 patients from 2002 to 2011 were included in the review; 17,883 patients (5.4%) were diagnosed with RA. Differences between adverse events among patients with RA and non-RA were not significant.¹²

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Cohere Medicare Advantage Policy – Shoulder Arthroscopy

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Shoulder Arthroscopy	4
Benefit Category	4
Recommended Clinical Approach	4
Evaluation of Clinical Benefits and Potential Harms	4
Medical Necessity Criteria	6
Indications	6
Non-Indications	12
Level of Care Criteria	12
Procedure Codes (HCPCS/CPT)	12
Medical Evidence	14
References	16
Clinical Guideline Revision History/Information	18

Medical Necessity Criteria

Service: Shoulder Arthroscopy

Benefit Category

Not applicable

Recommended Clinical Approach

A shoulder arthroscopy may involve one or more of several procedures, such as the repair of shoulder components such as the rotator cuff, labrum, ligaments, shoulder instability, or inflamed tissue or cartilage. The surgeon is able to thoroughly visualize the shoulder and treat several conditions involving the structures of the joint.¹⁻⁸

Arthroscopy may be appropriate when shoulder pain has not responded to nonsurgical treatment. This includes rest, limiting motion, physical therapy, or medications administered orally or by injection directly to the shoulder.

Evaluation of Clinical Benefits and Potential Harms

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of shoulder arthroscopy. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Inadequate management of shoulder conditions, leading to complications like progression of degenerative joint disease, recurrent dislocations, worsening pain, and reduced mobility. Decreased shoulder range of motion secondary to pain or a functional impairment can impact activities of daily living. Untreated full thickness rotator cuff tears can progress to rotator cuff arthropathy that may require a total shoulder arthroplasty.
- Risks with inappropriate surgical procedures include infection, bleeding, injury to neurovascular structures, injury to the articular cartilage, implant (anchor) migration, stiffness or adhesions, anesthetic risk and

need for repeat or additional procedures. Redler et al recommend nonsurgical management for adhesive capsulitis as most patients will have complete resolution of symptoms.⁷ There are significant surgical complications for adhesive capsulitis including fracture, glenoid and labral injuries, neuropraxic injuries and rotator cuff injuries.

- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Improved patient outcomes by ensuring timely and appropriate access to shoulder arthroscopy for managing various shoulder conditions such as rotator cuff tear. According to the American Academy of Orthopedic Surgeons (AAOS) evidence based clinical guidelines there is moderate evidence to support healed rotator cuff repairs show improved patient reported and functional outcomes compared to physical therapy and unhealed rotator cuff repairs.⁵
- Reduction in complications and adverse effects from unnecessary procedures. The AAOS notes strong evidence to support patient reported outcomes (PRO) improve with physical therapy in symptomatic patients with full thickness rotator cuff tears, therefore conservative therapy should be attempted before surgery.⁵ They also note strong evidence supports that older age is associated with higher failure rates and poorer patient reported outcomes after rotator cuff repair.
- Subacromial balloon spacers value remain uncertain. Piekaar et al report that while patients report good outcomes at 3 years postoperatively, the specific contribution of the balloon needs further investigation.²³
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

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

◆ **Capsular release/lysis of adhesions** is considered appropriate if **ALL** of the following are **TRUE**⁸⁻⁸:

- Significant pain and/or functional impairment that impacts activities of daily living; **AND**
- Significant loss of both active **AND** passive shoulder range of motion on exam; **AND**
- Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 6 months.
Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- Imaging findings (e.g., radiographs, CT, or 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; **OR**

◆ **Capsulorrhaphy/labral repair for shoulder instability** is considered appropriate if **ALL** of the following are **TRUE**⁹:

- Documented history of traumatic or atraumatic shoulder instability/laxity (e.g. dislocation, subluxation) with documented loss of shoulder function that impacts activities of daily living; **AND**
- The patient has **ANY** of the following positive exam tests:
 - Apprehension test; **OR**
 - Relocation test; **OR**
 - Load/Shift test; **OR**
 - Anterior and/or posterior drawer; **OR**
 - Jerk test; **OR**
 - Sulcus sign; **AND**
- **ANY** of the following:

- Failure of conservative management is not required for acute traumatic injuries less than or equal to 30 days old; **OR**
- Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 6 weeks. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- Advanced diagnostic imaging (e.g., MRI, CT) of **ANY** of the following findings 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**
- ◆ **Diagnostic arthroscopy** is considered appropriate if **ALL** of the following are **TRUE**:
 - Significant pain and/or functional impairment that impact 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**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 6 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - Imaging findings (e.g., radiographs, CT, or MRI) are inconclusive as to the source of shoulder pain; **OR**
- ◆ **Rotator cuff repair (RCR)** is considered appropriate if **ANY** of the following is **TRUE**¹⁻²:
 - **Acute rotator cuff tear** and **ALL** of the following after an inciting event or injury:
 - Significant pain and/or functional impairment that impacts activities of daily living; **AND**

- The patient has **ANY** of the following positive exam tests¹⁰:
 - ◆ Drop arm test; **OR**
 - ◆ Full can test; **OR**
 - ◆ Jobe/empty can test; **OR**
 - ◆ Weakness of external rotation; **OR**
 - ◆ Belly-press test; **OR**
 - ◆ Hawkins (Hawkins-Kennedy) sign/test; **OR**
 - ◆ Neer/Neer impingement test; **OR**
 - ◆ Lift-off/Gerber's test; **AND**
- Advanced diagnostic imaging (e.g., MRI, CT) demonstrates **ANY** of the following:
 - ◆ High-grade partial thickness rotator cuff tear; **OR**
 - ◆ Full-thickness rotator cuff tear; **OR**
- **Chronic rotator cuff tear** and **ALL** of the following¹¹:
 - Significant pain and/or functional impairment that impacts activities of daily living; **AND**
 - The patient has **ANY** of the following positive exam tests¹⁰:
 - ◆ Drop arm test; **OR**
 - ◆ Full can test; **OR**
 - ◆ Jobe/empty can test; **OR**
 - ◆ Weakness of external rotation; **OR**
 - ◆ Belly-press test; **OR**
 - ◆ Hawkins (Hawkins-Kennedy) sign/test; **OR**
 - ◆ Neer/Neer impingement test; **OR**
 - ◆ Lift-off/Gerber's test; **AND**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 6 weeks. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - 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); **OR**
- **Revision of a previous rotator cuff repair** is considered appropriate if **ANY** of the following is **TRUE**¹²:

- Advanced diagnostic imaging findings of a recurrent rotator cuff tear; **OR**
- Suspected postsurgical complication; **OR**

◆ **Distal clavicle resection** is considered appropriate if **ALL** of the following are **TRUE**⁵:

- Significant pain and/or functional impairment that impact activities of daily living; **AND**
- The patient demonstrates localized tenderness to palpation of the acromioclavicular (AC) joint and **ANY** of the following positive orthopedic tests on physical examination when compared to the non-involved side:
 - Cross-body adduction test; **OR**
 - Resisted AC joint extension test; **OR**
 - Neer impingement test; **OR**
 - Hawkins-Kennedy impingement test; **AND**
- Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- Imaging findings (e.g., radiographs, CT, or MRI) demonstrate **ANY** of the following findings consistent with pathology in the subacromial space or at the AC joint¹³:
 - Cystic formation in the distal clavicle; **OR**
 - Presence of osteophytes; **OR**
 - Moderate to severe degenerative changes in the AC joint; **OR**

◆ **Biceps tenodesis/tenotomy** is considered appropriate if **ALL** of the following are **TRUE**¹⁴:

- Significant pain and/or functional impairment that impact activities of daily living; **AND**
- The patient has **ANY** of the following positive exam tests:
 - Anterior slide test; **OR**
 - Biceps load test; **OR**
 - Biceps tendon tenderness in the bicipital groove; **OR**
 - Clunk test; **OR**
 - Compression rotation test; **OR**
 - O'Brien's test; **OR**
 - Speed's test; **OR**
 - Upper-cut test; **OR**

- Yergason test; **AND**
- Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- Advanced diagnostic imaging (e.g., MRI, CT) demonstrates biceps tendon pathology that correlates with the patient's reported symptoms and physical exam findings including **ANY** of the following:
 - Biceps tendon subluxation; **OR**
 - Biceps tendinopathy/tearing; **OR**
 - Superior labrum anterior and posterior (SLAP) tear; **OR**
- ◆ **Debridement** is considered appropriate if **ALL** of the following are **TRUE**²:
 - **ANY** of the following:
 - The procedure coincides with the indicated repair of a rotator cuff injury; **OR**
 - There is a need for decompression and debridement after a full-thickness rotator cuff tear; **OR**
 - Subacromial impingement syndrome, including **ALL** of the following:
 - ◆ Significant pain and/or functional impairment that impacts activities of daily living; **AND**
 - ◆ The patient demonstrates **ANY** of the following positive exam tests when compared to the non-involved side¹¹:
 - Neer impingement sign/test; **OR**
 - Hawkins (Hawkins-Kennedy) impingement sign/test; **AND**
 - ◆ Imaging studies 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; **AND**

- Significant pain and/or functional impairment that impacts activities of daily living; **AND**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - Imaging studies (e.g., radiographs, MRI, CT) demonstrate bony and/or soft tissue pathology that correlates with symptoms and physical exam findings; **OR**
- ◆ **Removal of loose body** is considered appropriate if **ALL** of the following are **TRUE**:
- 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**
- ◆ **Superior labrum anterior and posterior (SLAP) repair** is considered appropriate if **ALL** of the following are **TRUE**¹⁵⁻¹⁶:
- Significant pain and/or functional impairment that impacts activities of daily living; **AND**
 - The patient has **ANY** of the following positive exam tests:
 - O'Brien's test; **OR**
 - Biceps load test; **OR**
 - Crank test; **OR**
 - Modified dynamic labral shear test; **OR**
 - Anterior slide test; **AND**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - Advanced imaging (e.g., MRI, CT) demonstrates a SLAP lesion that correlates with symptoms and exam findings; **OR**
- ◆ **Subacromial decompression** is considered appropriate if **ANY** of the following is **TRUE**¹⁷:

- The procedure coincides with the indicated repair of a rotator cuff injury; **OR**
- There is a need for decompression and debridement after a full-thickness rotator cuff tear; **OR**
- Subacromial impingement syndrome, including **ALL** of the following:
 - Significant pain and/or functional impairment that impacts activities of daily living; **AND**
 - The patient demonstrates **ANY** of the following positive exam tests when compared to the non-involved side¹⁸:
 - ◆ Neer impingement sign/test; **OR**
 - ◆ Hawkins (Hawkins-Kennedy) impingement sign/test; **AND**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - Imaging (radiographs, CT, MRI) demonstrates **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**
- ◆ **Synovectomy (partial or complete)** is considered appropriate if **ALL** of the following are **TRUE**¹⁹:
 - Significant pain and/or functional impairment that impacts activities of daily living; **AND**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - Advanced diagnostic imaging (e.g., MRI, CT) demonstrates findings consistent with pathologic synovial disease (e.g.,

synovial plica, synovial chondromatosis, pigmented villonodular synovitis, inflammatory/rheumatoid arthritis, crystalline arthropathy, infection).

Non-Indications

→ **Shoulder arthroscopy** is not considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Arthroscopic debridement and/or removal of intra-articular loose body is not considered to be indicated in the presence of Kellgren-Lawrence grade 3 or 4 osteoarthritis²¹; **OR**
- ◆ Use of subacromial balloon spacer to treat irreparable rotator cuff tear²¹; **OR**
- ◆ Rotator cuff and/or labral repair in the presence of active infection (local or remote); **OR**
- ◆ Rotator cuff arthropathy.

Level of Care Criteria

Outpatient.

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
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 Surgical arthroscopy of shoulder with limited debridement
29823	Surgical arthroscopy of shoulder with debridement 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 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, I, and N 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 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.¹³

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.⁷

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.²²

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.²⁴

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.¹
- *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. Strong recommendation 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.⁵

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Version 2A	9/10/2024	Error corrected. Moved non-indication to indications section.



Cohere Medicare Advantage Policy – Shoulder Arthroscopy

Clinical Guidelines for Medical Necessity Review

Version: 2
Effective Date: June 10, 2024

Important Notices

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Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Shoulder Arthroscopy	4
Benefit Category	4
Recommended Clinical Approach	4
Evaluation of Clinical Benefits and Potential Harms	4
Medical Necessity Criteria	6
Indications	6
Non-Indications	12
Level of Care Criteria	12
Procedure Codes (HCPCS/CPT)	12
Medical Evidence	14
References	16
Clinical Guideline Revision History/Information	18

Medical Necessity Criteria

Service: Shoulder Arthroscopy

Benefit Category

Not applicable

Recommended Clinical Approach

A shoulder arthroscopy may involve one or more of several procedures, such as the repair of shoulder components such as the rotator cuff, labrum, ligaments, shoulder instability, or inflamed tissue or cartilage. The surgeon is able to thoroughly visualize the shoulder and treat several conditions involving the structures of the joint.¹⁻⁸

Arthroscopy may be appropriate when shoulder pain has not responded to nonsurgical treatment. This includes rest, limiting motion, physical therapy, or medications administered orally or by injection directly to the shoulder.

Evaluation of Clinical Benefits and Potential Harms

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of shoulder arthroscopy. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Inadequate management of shoulder conditions, leading to complications like progression of degenerative joint disease, recurrent dislocations, worsening pain, and reduced mobility. Decreased shoulder range of motion secondary to pain or a functional impairment can impact activities of daily living. Untreated full thickness rotator cuff tears can progress to rotator cuff arthropathy that may require a total shoulder arthroplasty.
- Risks with inappropriate surgical procedures include infection, bleeding, injury to neurovascular structures, injury to the articular cartilage, implant (anchor) migration, stiffness or adhesions, anesthetic risk and

need for repeat or additional procedures. Redler et al recommend nonsurgical management for adhesive capsulitis as most patients will have complete resolution of symptoms.⁷ There are significant surgical complications for adhesive capsulitis including fracture, glenoid and labral injuries, neuropraxic injuries and rotator cuff injuries.

- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Improved patient outcomes by ensuring timely and appropriate access to shoulder arthroscopy for managing various shoulder conditions such as rotator cuff tear. According to the American Academy of Orthopedic Surgeons (AAOS) evidence based clinical guidelines there is moderate evidence to support healed rotator cuff repairs show improved patient reported and functional outcomes compared to physical therapy and unhealed rotator cuff repairs.⁵
- Reduction in complications and adverse effects from unnecessary procedures. The AAOS notes strong evidence to support patient reported outcomes (PRO) improve with physical therapy in symptomatic patients with full thickness rotator cuff tears, therefore conservative therapy should be attempted before surgery.⁵ They also note strong evidence supports that older age is associated with higher failure rates and poorer patient reported outcomes after rotator cuff repair.
- Subacromial balloon spacers value remain uncertain. Piekaar et al report that while patients report good outcomes at 3 years postoperatively, the specific contribution of the balloon needs further investigation.²³
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

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

◆ **Capsular release/lysis of adhesions** is considered appropriate if **ALL** of the following are **TRUE**⁸⁻⁸:

- Significant pain and/or functional impairment that impacts activities of daily living; **AND**
- Significant loss of both active **AND** passive shoulder range of motion on exam; **AND**
- Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 6 months.
Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- Imaging findings (e.g., radiographs, CT, or 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; **OR**

◆ **Capsulorrhaphy/labral repair for shoulder instability** is considered appropriate if **ALL** of the following are **TRUE**⁹:

- Documented history of traumatic or atraumatic shoulder instability/laxity (e.g. dislocation, subluxation) with documented loss of shoulder function that impacts activities of daily living; **AND**
- The patient has **ANY** of the following positive exam tests:
 - Apprehension test; **OR**
 - Relocation test; **OR**
 - Load/Shift test; **OR**
 - Anterior and/or posterior drawer; **OR**
 - Jerk test; **OR**
 - Sulcus sign; **AND**
- **ANY** of the following:

- Failure of conservative management is not required for acute traumatic injuries less than or equal to 30 days old; **OR**
- Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 6 weeks. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- Advanced diagnostic imaging (e.g., MRI, CT) of **ANY** of the following findings 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**
- ◆ **Diagnostic arthroscopy** is considered appropriate if **ALL** of the following are **TRUE**:
 - Significant pain and/or functional impairment that impact 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**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 6 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - Imaging findings (e.g., radiographs, CT, or MRI) are inconclusive as to the source of shoulder pain; **OR**
- ◆ **Rotator cuff repair (RCR)** is considered appropriate if **ANY** of the following is **TRUE**¹⁻²:
 - **Acute rotator cuff tear** and **ALL** of the following after an inciting event or injury:
 - Significant pain and/or functional impairment that impacts activities of daily living; **AND**

- The patient has **ANY** of the following positive exam tests¹⁰:
 - ◆ Drop arm test; **OR**
 - ◆ Full can test; **OR**
 - ◆ Jobe/empty can test; **OR**
 - ◆ Weakness of external rotation; **OR**
 - ◆ Belly-press test; **OR**
 - ◆ Hawkins (Hawkins-Kennedy) sign/test; **OR**
 - ◆ Neer/Neer impingement test; **OR**
 - ◆ Lift-off/Gerber's test; **AND**
- Advanced diagnostic imaging (e.g., MRI, CT) demonstrates **ANY** of the following:
 - ◆ High-grade partial thickness rotator cuff tear; **OR**
 - ◆ Full-thickness rotator cuff tear; **OR**
- **Chronic rotator cuff tear** and **ALL** of the following¹¹:
 - Significant pain and/or functional impairment that impacts activities of daily living; **AND**
 - The patient has **ANY** of the following positive exam tests¹⁰:
 - ◆ Drop arm test; **OR**
 - ◆ Full can test; **OR**
 - ◆ Jobe/empty can test; **OR**
 - ◆ Weakness of external rotation; **OR**
 - ◆ Belly-press test; **OR**
 - ◆ Hawkins (Hawkins-Kennedy) sign/test; **OR**
 - ◆ Neer/Neer impingement test; **OR**
 - ◆ Lift-off/Gerber's test; **AND**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 6 weeks. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - 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); **OR**
- **Revision of a previous rotator cuff repair** is considered appropriate if **ANY** of the following is **TRUE**¹²:

- Advanced diagnostic imaging findings of a recurrent rotator cuff tear; **OR**
- Suspected postsurgical complication; **OR**

◆ **Distal clavicle resection** is considered appropriate if **ALL** of the following are **TRUE**⁵:

- Significant pain and/or functional impairment that impact activities of daily living; **AND**
- The patient demonstrates localized tenderness to palpation of the acromioclavicular (AC) joint and **ANY** of the following positive orthopedic tests on physical examination when compared to the non-involved side:
 - Cross-body adduction test; **OR**
 - Resisted AC joint extension test; **OR**
 - Neer impingement test; **OR**
 - Hawkins-Kennedy impingement test; **AND**
- Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- Imaging findings (e.g., radiographs, CT, or MRI) demonstrate **ANY** of the following findings consistent with pathology in the subacromial space or at the AC joint¹³:
 - Cystic formation in the distal clavicle; **OR**
 - Presence of osteophytes; **OR**
 - Moderate to severe degenerative changes in the AC joint; **OR**

◆ **Biceps tenodesis/tenotomy** is considered appropriate if **ALL** of the following are **TRUE**¹⁴:

- Significant pain and/or functional impairment that impact activities of daily living; **AND**
- The patient has **ANY** of the following positive exam tests:
 - Anterior slide test; **OR**
 - Biceps load test; **OR**
 - Biceps tendon tenderness in the bicipital groove; **OR**
 - Clunk test; **OR**
 - Compression rotation test; **OR**
 - O'Brien's test; **OR**
 - Speed's test; **OR**
 - Upper-cut test; **OR**

- Yergason test; **AND**
- Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- Advanced diagnostic imaging (e.g., MRI, CT) demonstrates biceps tendon pathology that correlates with the patient's reported symptoms and physical exam findings including **ANY** of the following:
 - Biceps tendon subluxation; **OR**
 - Biceps tendinopathy/tearing; **OR**
 - Superior labrum anterior and posterior (SLAP) tear; **OR**
- ◆ **Debridement** is considered appropriate if **ALL** of the following are **TRUE**²:
 - **ANY** of the following:
 - The procedure coincides with the indicated repair of a rotator cuff injury; **OR**
 - There is a need for decompression and debridement after a full-thickness rotator cuff tear; **OR**
 - Subacromial impingement syndrome, including **ALL** of the following:
 - ◆ Significant pain and/or functional impairment that impacts activities of daily living; **AND**
 - ◆ The patient demonstrates **ANY** of the following positive exam tests when compared to the non-involved side¹¹:
 - Neer impingement sign/test; **OR**
 - Hawkins (Hawkins-Kennedy) impingement sign/test; **AND**
 - ◆ Imaging studies 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; **AND**

- Significant pain and/or functional impairment that impacts activities of daily living; **AND**
- Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
- Imaging studies (e.g., radiographs, MRI, CT) demonstrate bony and/or soft tissue pathology that correlates with symptoms and physical exam findings; **OR**
- ◆ **Removal of loose body** is considered appropriate if **ALL** of the following are **TRUE**:
 - 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**
- ◆ **Superior labrum anterior and posterior (SLAP) repair** is considered appropriate if **ALL** of the following are **TRUE**¹⁵⁻¹⁶:
 - Significant pain and/or functional impairment that impacts activities of daily living; **AND**
 - The patient has **ANY** of the following positive exam tests:
 - O'Brien's test; **OR**
 - Biceps load test; **OR**
 - Crank test; **OR**
 - Modified dynamic labral shear test; **OR**
 - Anterior slide test; **AND**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - Advanced imaging (e.g., MRI, CT) demonstrates a SLAP lesion that correlates with symptoms and exam findings; **OR**
- ◆ **Subacromial decompression** is considered appropriate if **ANY** of the following is **TRUE**¹⁷:

- The procedure coincides with the indicated repair of a rotator cuff injury; **OR**
- There is a need for decompression and debridement after a full-thickness rotator cuff tear; **OR**
- Subacromial impingement syndrome, including **ALL** of the following:
 - Significant pain and/or functional impairment that impacts activities of daily living; **AND**
 - The patient demonstrates **ANY** of the following positive exam tests when compared to the non-involved side¹⁸:
 - ◆ Neer impingement sign/test; **OR**
 - ◆ Hawkins (Hawkins-Kennedy) impingement sign/test; **AND**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - Imaging (radiographs, CT, MRI) demonstrates **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**
- ◆ **Synovectomy (partial or complete)** is considered appropriate if **ALL** of the following are **TRUE**¹⁹:
 - Significant pain and/or functional impairment that impacts activities of daily living; **AND**
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
 - Advanced diagnostic imaging (e.g., MRI, CT) demonstrates findings consistent with pathologic synovial disease (e.g.,

synovial plica, synovial chondromatosis, pigmented villonodular synovitis, inflammatory/rheumatoid arthritis, crystalline arthropathy, infection).

Non-Indications

→ **Shoulder arthroscopy** is not considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Arthroscopic debridement and/or removal of intra-articular loose body is not considered to be indicated in the presence of Kellgren-Lawrence grade 3 or 4 osteoarthritis²¹; **OR**
- ◆ Use of subacromial balloon spacer to treat irreparable rotator cuff tear²¹; **OR**
- ◆ Rotator cuff and/or labral repair in the presence of active infection (local or remote); **OR**
- ◆ Rotator cuff arthropathy.

Level of Care Criteria

Outpatient.

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
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 Surgical arthroscopy of shoulder with limited debridement
29823	Surgical arthroscopy of shoulder with debridement 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 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, I, and N 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 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.¹³

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.⁷

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.²²

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.²⁴

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.¹
- *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. Strong recommendation 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.⁵

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Clinical Guideline Revision History/Information

Original Date: May 22, 2024		
Review History		
Version 2	6/10/2024	422.101 Disclaimer added
Version 2A	9/10/2024	Error corrected. Moved non-indication to indications section.



Cohere Medicare Advantage Policy – Shoulder Biceps Tenodesis/Tenotomy

Clinical Policy for Medical Necessity Review

Version: 2

Policy Number: CHP-065-2

Cohere Health UMC Approval Date: March 26, 2026

Last Annual Review: March 26, 2026

Revision: Not Applicable

Next Annual Review: March 26, 2027

Important Notices

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Policy Information:

Specialty Area: Musculoskeletal Care

Policy Name: Cohere Medicare Advantage Policy - Shoulder Biceps Tenodesis/Tenotomy

Policy Number: CHP-065-2

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Shoulder Biceps Tenodesis/Tenotomy	4
Related Centers for Medicare & Medicaid Services (CMS) Documents	4
Description	5
Medical Necessity Criteria	6
Indications	6
Non-Indications	7
Definitions and Notes	7
Procedure Codes (CPT/HCPCS)	7
Evaluation of Clinical Harms and Benefits	8
Medical Evidence	9
References	11
Policy Revision History/Information	14

Medical Necessity Criteria

Service: Shoulder Biceps Tenodesis/Tenotomy

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria¹ as follows:

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy – Shoulder Biceps Tenodesis/Tenotomy* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 – Related CMS Policies (NCDs or LCDs)

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Description

Biceps tenodesis and tenotomy are surgical procedures used to address conditions of the long head of the biceps tendon (LHBT).²⁻⁷ These procedures can treat biceps tendinitis and other conditions that cause shoulder pain and dysfunction.^{2,5-9} Biceps tenodesis detaches the LHBT and reattaches it either to healthy soft tissue (e.g., rotator cuff or humeral ligament) or anchors it to bone (e.g., the humerus).^{8,9} Biceps tenotomy surgically releases the LHBT from the shoulder joint.⁸ Both procedures may be effective for improving shoulder function and reducing pain.³⁻⁵ The procedure selected depends on multiple factors, including the patient's functional requirements, age, and the surgeon's discretion.^{7,10} There is no consensus on the optimal approach for biceps tendon pathology with or without rotator cuff tear.^{2,4,6,9,11-17}

Medical Necessity Criteria

Indications

Shoulder biceps tenodesis/tenotomy is considered appropriate if **ALL** of the following are **TRUE**^{2-6,9,10,13-17}:

- Significant pain and/or functional impairment that impacts activities of daily living (ADLs)^{5,6}; **AND**
- **AT LEAST TWO** of the following exam findings:
 - Tenderness in the bicipital or intertubercular groove²; **OR**
 - **ANY** of the following positive tests:
 - Anterior slide²; **OR**
 - Biceps load (I or II)²; **OR**
 - Crank²; **OR**
 - O'Brien active compression (compression rotation)²; **OR**
 - O'Driscoll dynamic labral shear²; **OR**
 - Pronated load²; **OR**
 - Speed^{2,18}; **OR**
 - Uppercut¹⁸; **OR**
 - Yergason ("clunk")^{2,18}; **AND**
- Advanced imaging with radiologic report findings of biceps tendon pathology that include **ANY** of the following^{2,4,6}:
 - Biceps tendon subluxation or dislocation; **OR**
 - Biceps tenosynovitis, tendinopathy, or tearing⁶; **OR**
 - Hypertrophy of biceps tendon⁶; **OR**
 - Intra-articular biceps tendon tear^{2,6}; **OR**
 - Superior labrum anterior and posterior (SLAP) tear^{2,5,6,8,9}; **AND**
- Failure of conservative management,^A including **ALL** of the following^{2,8,10,19}:
 - Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated^{2,10,20}; **AND**
 - Activity modification and ice^{2,20}; **AND**
 - **ANY** of the following¹⁰:
 - **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^{2,10,20}; **AND**
 - PT/HEP trialed for a duration of 3 months or more within the past 12 months; **OR**
 - Progression or worsening of symptoms due to PT/HEP treatment; **AND**
 - **ANY** of the following^{2,10,20}:
 - Corticosteroid injection if medically appropriate^{2,10,20}; **OR**
 - Documentation that corticosteroid injection is contraindicated.

Non-Indications

- There are no absolute non-indications for shoulder biceps tenodesis/tenotomy.^{2,9}

Definitions and Notes

^AFailure 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)

CPT/HCPCS Code	Code Description
23430	Tenodesis of long tendon of biceps
23440	Resection or transplantation of long tendon of biceps
29828	Arthroscopy, shoulder, surgical; biceps tenodesis

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established," Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.^{CMS}

The potential clinical harms of using these criteria for shoulder biceps tenodesis or tenotomy may include:

- Adverse effects from delayed or denied treatment, such as chronic tendon retraction.²
- Increased healthcare costs from additional treatments or the avoidable use of emergency services.

The potential clinical benefits of using these criteria for shoulder biceps tenodesis or tenotomy may include:

- Enhanced overall patient satisfaction and healthcare experience.²¹
- Ensuring timely and appropriate access to care.
- Improved patient selection for shoulder biceps tenodesis or tenotomy, supporting better health outcomes.
- Emphasis on rigorous patient safety aligned to best available evidence.
- Reduction in complications and adverse effects from unnecessary procedures. Proper use of diagnostic criteria can prevent unnecessary surgeries and associated risks.

Medical Evidence

Current literature supports previous findings of similar functional outcomes between surgical approaches to long head of the biceps tendon (LHBT) pathologies.^{7,9,17} Song et al. (2025) in a retrospective study of biceps tenodesis (n=49) and tenotomy (n=47) in participants ages greater than or equal to 60 years found no significant differences in functional outcomes 2 years post surgery.⁷ Kim et al. (2025), in a retrospective study comparing biceps anchor tenodesis (AT), soft-tissue tenodesis (ST), and tenotomy (TT), found no significant differences in outcomes across the procedures.⁹ Sachs et al. (2025), in a systematic review comparing open approaches to subpectoral biceps tenodesis, also found no significant differences in outcomes.¹⁷ While Song et al. (2025) did not find a greater rate of Popeye deformity in the tenotomy subpopulation, other authors,^{5,7-9,22,23} report that the incidence of cosmetic deformity is higher with tenotomy than tenodesis.

Chiang et al. (2023) conducted a retrospective review of patients undergoing either modified intra-articular (arthroscopic) transtendinous looped biceps tenodesis (mTLBT) (n=15) or biceps tenotomy (n=40). The authors found no significant differences in pain and functional outcomes as measured by the American Shoulder and Elbow Surgeons (ASES) and University of California-Los Angeles (UCLA) shoulder scales. Tenotomy had a greater incidence of Popeye deformity than mTLBT.²² In a systematic review of randomized controlled trials (RCTs), Zhang et al. (2023) compared outcomes of tenotomy versus tenodesis on LHBT lesions. Ten RCTs, including 787 cases, were analyzed. Meta-analysis results showed that tenodesis had better outcomes based on Simple Shoulder Test (SST) scores, but there were no significant differences between the two procedures in ASES scores. Tenotomy was associated with a greater risk of Popeye's (cosmetic) deformities than tenodesis.²³

In two separate systematic reviews, Ahmed et al. (2021) and Belk et al. (2021) each compared outcomes of tenotomy versus tenodesis on LHBT pathologies.^{5,8} The authors reviewed RCTs with at least 12 months of follow-up. Outcomes measured in both reviews included shoulder functional improvement, postoperative pain, and complications. Authors of each review found LHBT treatments provided similar outcomes in ASES scores, visual

analogue scale (VAS) rating for pain, and strength indices for elbow flexion and forearm supination, regardless of approach. Tenotomy was associated with a greater risk of Popeye's deformities than tenodesis.^{5,8}

Frank et al. (2018) discussed variables to consider in the management of LHBT, including beginning with nonsurgical treatment. Surgical procedures may be an option when conservative treatment fails. There are different approaches for both tenodesis and tenotomy procedures, and the choice of procedure and approach varies based on multiple factors (patient demographics, surgeon's preferred method, site of the pathology, condition of the joint, etc.). The exception to a conservative approach is acute injury resulting in a tear of the distal biceps tendon, which requires timely surgical intervention.²

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Policy Revision History/Information

Original Date: March 27, 2025		
Review History		
Version 2	03/26/2026	Annual review. Clarified ortho tests based on literature terminology (e.g., Yergason's is also called the "clunk" test). Removed procedure code S2300. Removed non-indication for tenotomy in an athlete. Expanded the Medical Evidence section and added 11 references.

Cohere Medicare Advantage Policy – Shoulder Manipulation Under Anesthesia

Clinical Policy for Medical Necessity Review

CHP-063-2 Version 2

Cohere UMC Approval Date: March 26, 2026

Last Annual Review: March 26, 2026

Revision Date: Not applicable

Next Annual Review: March 26, 2027

Specialty: Musculoskeletal Care

Population Type: Adult (18+ years old), Pediatric (0-17 years old)

Table of contents

Procedure Codes (CPT/HCPCS)	3
Important Notices	4
Service: Shoulder Manipulation Under Anesthesia - Description	5
Service: Shoulder Manipulation Under Anesthesia - Medical Necessity Criteria	6
Evaluation of Clinical Harms and Benefits	8
Medical Evidence	9
References	10
Policy Revision History/Information	11

Procedure Codes (CPT/HCPCS)

Service: Shoulder Manipulation Under Anesthesia	
Code	Description
23700	Manipulation under anesthesia, shoulder joint, including application of fixation apparatus (dislocation excluded)

Important Notices

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Service: Shoulder Manipulation Under Anesthesia - 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.²⁻⁵ During the procedure, performed under anesthesia, the patient's shoulder is stretched and manipulated through the joint's full range of motion. The procedure is immediately followed by physiotherapy.⁶⁻⁸

Service: Shoulder Manipulation Under Anesthesia - Medical Necessity Criteria

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Shoulder Manipulation Under Anesthesia* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 - Related CMS Policies (NCDs or LCDs)

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Indications

- **Shoulder manipulation under anesthesia (MUA)** is considered appropriate if **ALL** of the following are **TRUE**^{2,3,8-10}:
 - Clinical signs and symptoms of adhesive capsulitis (frozen shoulder) for greater than or equal to 3 months; **AND**
 - Initial imaging has been performed, and findings do not identify other shoulder pathologies as the primary source of the symptoms; **AND**
 - Significant and documented loss of motion in more than one plane (forward flexion less than 110°, external rotation less than 50°) compared to the contralateral shoulder^{4,12}; **AND**
 - Failure of conservative management^A, 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**
- Progression or worsening of symptoms due to PT/HEP treatment; **AND**
- **ANY** of the following:
 - Corticosteroid injection if medically appropriate¹¹; **OR**
 - Documentation that corticosteroid injection is contraindicated.

Non-Indications

- **Shoulder manipulation under anesthesia (MUA)** is not considered appropriate if **ANY** of the following is **TRUE**:
 - Severe osteoporosis.¹³

Definitions and Notes

^A 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.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.¹

The potential clinical harms of using these criteria for shoulder manipulation under anesthesia may include:

- Adverse effects from delayed or denied treatment, including structural damages to the glenohumeral joint and its surrounding soft tissues due to uncontrolled manipulation.¹⁴
- Increased healthcare costs and complications from potentially serious complications, such as a humeral shaft fracture, osteochondral lesions, or brachial plexus injury.³
- Long-term recurrence of frozen shoulder symptoms, leading to additional surgical procedures.⁹
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria for shoulder manipulation under anesthesia may include:

- Appropriate management of adhesive capsulitis, resulting in improvements in shoulder range of motion.⁶
- Earlier resolution or improvement of adhesive capsulitis, resulting in a reduction in localized pain after the intervention.^{2,10}
- Reduction in complications and adverse effects from unnecessary procedures.
- Enhanced overall patient satisfaction and healthcare experience.

Medical Evidence

Kraal et al. (2023) conducted a randomized controlled 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 included 82 patients divided into two groups. Both groups showed significant improvement in outcomes at the one-year follow-up, including improved Shoulder Pain and Disability Index (SPADI) scores, Oxford Shoulder Scores, range of motion (ROM), and quality of life. However, MUA improved SPADI scores more rapidly 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, in the short term, MUA was considered safe and led to a quicker recovery of ROM and improved functional outcomes compared to PT alone. After one year, the results of MUA were comparable to PT, with slightly better ROM scores for MUA.³

Fairclough et al. (2023) conducted a retrospective analysis of the long-term outcomes of MUA for frozen shoulder. The study included 398 shoulders treated between 1999 and 2010, with complete data available for 240 of the shoulders. The authors found that, at a mean follow-up of 13.2 years, the majority of patients (71.3%) had no symptoms, 16.6% had minor symptoms, 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, the authors concluded that MUA for FS yielded favorable long-term outcomes, with few recurrences and no significant increase in the development of other shoulder issues.⁹

A clinical study by Takahashi et al. (2020) compared the outcomes of shoulder manipulation under ultrasound-guided cervical nerve root block between patients with diabetes mellitus (DM) and those without the metabolic condition. While both groups showed significant improvements in several measures, including forward flexion, internal rotation, and the Constant Shoulder Score, compared with the non-DM group, the DM cohort showed considerably smaller improvements in external rotation.¹⁵

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 considered clinically significant. Serious adverse events were rare, but more common in participants who underwent surgery. Qualitative data suggested that patients preferred a quicker resolution of their shoulder problems. However, none of the interventions emerged as superior: early structured physiotherapy was accessible and low-cost, MUA was the most cost-effective, and arthroscopic capsular release carried higher risks and costs.¹⁶

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Policy Revision History/Information

Clinical Policy Version	Date	Review History
Version 1	03/27/2025	Original Date.
Version 2	03/26/2026	Annual Review. Updated template, including addition of "Table 1 - Related CMS Policies" that describes Cohere definition of which LCDs/NCDs are not fully established. Cohere MA criteria updated for internal alignment across policies. Added "in more than one plane" to the "significant and documented loss of motion compared to the contralateral shoulder" indication. Updated conservative care language. Added two references.



Cohere Medicare Advantage Policy – Spinal Cord Stimulators

Clinical Guidelines for Medical Necessity Review

Version: 1
Revision Date: April 10, 2025

Important Notices

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Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Spinal Cord Stimulators

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Spinal Cord Stimulators	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	4
Evaluation of Clinical Harms and Benefits	5
Medical Necessity Criteria	7
Indications	7
Non-Indications	11
Level of Care Criteria	11
Procedure Codes (CPT/HCPCS)	12
Medical Evidence	14
References	16
Clinical Guideline Revision History/Information	21

Medical Necessity Criteria

Service: Spinal Cord Stimulators

Benefit Category

Prosthetic Devices

Incident to a Physician's Professional Service

Outpatient Hospital Services Incident to a Physician's Service

Outpatient Physical Therapy Services

Physicians' Services

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.¹⁻⁵

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.¹⁻⁵

- [Local Coverage Determination \(LCD\). Spinal cord stimulators for chronic pain \(L35136\)](#)
- [Local Coverage Determination \(LCD\). Spinal cord stimulators for chronic pain \(L36204\)](#)
- [Local Coverage Determination \(LCD\). Spinal cord stimulators for chronic pain \(L37632\)](#)
- [National Coverage Determination \(NCD\). Electrical nerve stimulators \(160.7\)](#)
- [National Coverage Determination \(NCD\). Assessing patient's suitability for electrical nerve stimulation therapy \(160.7.1\)](#)
- [Billing and Coding: Spinal cord stimulators for chronic pain \(A56876\)](#)
- [Billing and Coding: Spinal cord stimulators for chronic pain \(A57791\)](#)
- [Billing and Coding: Spinal cord stimulators for chronic pain \(A57792\)](#)

Recommended Clinical Approach

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. Typically, patients who experience a 50% or greater

improvement in pain are recommended for permanent SCS placement.⁶ The device is not appropriate for all patients with chronic pain, and careful patient selection is necessary to achieve optimal outcomes.¹⁻⁵ Dorsal root ganglion (DRG) stimulation is done via epidural and intra-spinal 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 patients with complex regional pain syndrome (CRPS) types I and II. An SCS is considered a late or last resort after exhausting other treatments for chronic, intractable pain.⁷⁻¹¹

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of spinal cord stimulators. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Surgical complications, including needle puncture leading to nerve injury, lead/sheath trauma, dural puncture/cerebrospinal fluid leak, lead migration, lead fracture, lead retention upon removal/revision, pocket pain, and hematoma. Several of these risks are potentially avoidable with imaging, careful surgical technique, appropriate patient selection, and patient communication.^{12,13}
- Postsurgical device-related complications can include lead migration, erosion, lead and sheath fracture or other damage, connection failure, and hardware malfunction.^{13,14}
- Other complications can include neurological symptoms such as nerve damage, numbness, paraesthesias, weakness, pain, dural puncture, infection, epidural hematoma, inappropriate stimulation, overstimulation, and headache.^{12,14-16}
- Potential delays or denials leading to worsened patient outcomes including increased use of medications, including opioids and others with abuse potential, worsening quality of life, reduced mobility, ongoing and worsening pain, ongoing and worsening muscle atrophy, and delays in physical rehabilitation.^{6,16}
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Improved patient outcomes through timely and appropriate access to spinal cord stimulation. SCS has been shown to alleviate chronic intractable pain due to several conditions, e.g., failed back surgery syndrome, complex regional pain syndrome, diabetic peripheral neuropathy.^{6,17} A 2007 clinical trial comparing medical management of pain due to failed back surgery syndrome and medical management with SCS (PROCESS trial) reported that while only 7% of the medical management alone patients reported 50% or greater improved pain, 34% of SCS patients reported pain improvement. SCS patients also reported greater quality of life, functional capacity, and treatment satisfaction.¹⁸
- Reduction or complete elimination of opioid and other potentially dependence-inducing pharmacological treatment use and avoidance of medication-related adverse effects, including disrupted hormonal and immune system functioning, depression, tolerance, and opioid-induced hyperalgesia.^{6,18}
- Avoidance of repeated surgeries. In a study comparing outcomes in failed back surgery syndrome patients randomized to either SCS or repeated lumbosacral spine surgery, SCS patients were more satisfied than repeat-surgery patients at three-year followup.¹⁹
- Improved pain can decrease overall long-term cost of care, improve overall quality of life, and increase the likelihood of returning to work.^{6,16}
- Appropriate patient selection and use of SCS trials avoid unnecessary and ineffective invasive surgical procedures.^{6,16}
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

- A **spinal cord stimulator (SCS)** is considered appropriate if **ANY** of the following is **TRUE**:
- ◆ An **SCS trial** is appropriate when **ALL** of the following are **TRUE**¹⁻⁵:
 - Pain has been present for greater than or equal to 6 months; **AND**
 - Documented pain-focused psychological evaluation and clearance within the last 12 months has determined that the patient is a suitable candidate²⁰; **AND**
 - The patient has **ANY** of the following conditions:
 - Complex regional pain syndrome (CRPS), also known as reflex sympathetic dystrophy (RSD), as diagnosed by **ALL** of the following, as per Budapest criteria²¹⁻²³:
 - ◆ Continued, ongoing pain, disproportionate to any inciting event (e.g., surgery, trauma); **AND**
 - ◆ Must report a symptom in **AT LEAST THREE** of the following categories:
 - Sensory: reports of hyperesthesia and/or allodynia; **OR**
 - Vasomotor: reports of temperature asymmetry and/or skin color changes and/or skin color asymmetry; **OR**
 - Sudomotor/edema: reports of edema and/or sweating changes and/or sweating asymmetry; **OR**
 - Motor/trophic: reports of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nails, skin); **AND**
 - ◆ The patient has signs of **AT LEAST TWO** of the following categories at the time of evaluation:
 - Sensory (e.g., hyperalgesia [to pinprick], allodynia [to light touch]); **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 [weakness, tremor, dystonia], trophic changes [hair, nails, skin]); **AND**
- ◆ The treatment is a late or last resort as defined by failure of conservative management for greater than 3 months within the last 12 months, including **ALL** of the following, if medically appropriate and not contraindicated⁴:
 - Prescription pain medications (e.g., anti-inflammatory medications, non-opioid analgesics, opioid medications, etc.); **AND**
 - Failed trial of at least 2 neuropathic medications (e.g., gabapentin, pregabalin, duloxetine, amitriptyline, nortriptyline, etc.); **AND**
 - Physical therapy, including a home exercise program; **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^{4,23-25}:
 - ◆ The treatment is a late or last resort as defined by failure of conservative management for greater than 3 months within the last 12 months, including **ALL** of the following, if medically appropriate and not contraindicated⁴:
 - Prescription pain medications (e.g., anti-inflammatory medications, non-opioid analgesics, opioid medications, etc.); **AND**
 - Failed trial of at least 2 neuropathic medications (e.g., gabapentin, pregabalin, duloxetine, amitriptyline, nortriptyline, etc.); **AND**
 - Physical therapy, including a home exercise program; **AND**
 - Failure of adequate relief with interventional pain procedure (e.g., epidural steroid injection, facet joint procedures, etc.); **AND**

- ◆ Spine surgeon evaluation within the last 12 months attesting that the patient is not a candidate for further surgical intervention²⁸; **OR**
- Painful diabetic neuropathy (PDN) in a lower extremity as a treatment of late or last resort, defined by **ALL** of the following^{4,26-28}:
 - ◆ Failure of at least a 3-month trial of at least 2 medications targeting neuropathic pain (e.g., gabapentin, pregabalin, duloxetine, amitriptyline, nortriptyline, venlafaxine, desvenlafaxine, etc.); **AND**
 - ◆ Documentation (within 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 3 months; **OR**
- Chronic intractable back or neck pain with **ALL** of the following^{29,30}:
 - ◆ The treatment is a late or last resort as defined by failure of conservative management for greater than 3 months within the last 12 months, including **ALL** of the following, if medically appropriate and not contraindicated⁴:
 - Prescription pain medications (e.g., anti-inflammatory medications, non-opioid analgesics, opioid medications, etc.); **AND**
 - Physical therapy, including a home exercise program; **AND**
 - Failure of adequate relief with interventional pain procedure (e.g., epidural steroid injection, facet joint procedures, etc.); **AND**
 - ◆ Spine surgeon evaluation within the last 12 months attesting that the patient is not a candidate for surgical intervention due to **ANY** of the following³²:
 - High surgical risk; **OR**
 - increased risk of perioperative morbidity or mortality due to medical comorbidities; **OR**
- Inoperable chronic ischemic limb pain secondary to peripheral vascular disease as a treatment of late or

last resort, defined by failure of conservative management for greater than 3 months within the last 12 months including **ALL** of the following if medically appropriate and not contraindicated^{4,33,34}:

- ◆ Prescription pain medications(e.g., anti-inflammatory medications, non-opioid analgesics, opioid medications, etc.); **AND**
- ◆ Vascular surgeon evaluation within the last 12 months attesting that the patient is not a candidate for surgical intervention; **AND**
- ◆ Failure of adequate relief with interventional pain procedure(e.g., sympathetic nerve block); **OR**

- Moderate to severe chronic neuropathic pain as a treatment of late or last resort, defined by failure of conservative management for greater than 3 months within the last 12 months including **ALL** of the following^{4,35-38}:

- ◆ Prescription pain medications(e.g., anti-inflammatory medications, non-opioid analgesics, opioid medications, etc.); **AND**
- ◆ Physical therapy, including a home exercise program; **AND**
- ◆ Failed trial of at least 2 neuropathic medications (e.g., gabapentin, pregabalin, duloxetine, amitriptyline, nortriptyline, etc.); **AND**
- ◆ Failure of adequate relief with interventional pain procedure(e.g., nerve blocks , etc.); **OR**

- ◆ A **permanent SCS implantation** is appropriate if the patient has had a successful SCS trial, as indicated by **ALL** of the following^{1-4,39}:
 - Meets medical necessity criteria for trial; **AND**
 - A temporary SCS trial of at least 3 days; **AND**
 - Demonstrated improved functioning as indicated by **ANY** of the following²⁰:
 - At least 50% reduction in target pain during the temporary SCS trial; **OR**
 - At least 50% reduction in the use of analgesic medications during the SCS trial; **AND**
 - Documented improvement in **ANY** of the following during the temporary SCS trial²⁰:
 - Ability to perform daily activities; **OR**
 - Quality of life; **OR**
 - Functional disability scale; **OR**
 - Mobility; **OR**

- ◆ **A SCS or DRG revision or replacement** is considered appropriate if **ANY** of the following is **TRUE**^{1-4,40-43}:
 - SCS/DRG battery malfunction or depletion; **OR**
 - Lead displacement or fracture; **OR**
 - Infection surrounding SCS device; **OR**
 - Hardware-related pain; **OR**
 - An MRI-compatible device is needed due to **ALL** of the following:
 - The patient currently has a non-MRI compatible device; **AND**
 - An 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 an MRI.

Non-Indications

- A **spinal cord stimulator (SCS)** is not considered appropriate if **ANY** of the following is **TRUE**³⁹:
- ◆ The patient has active substance use disorder¹⁻³; **OR**
 - ◆ More than 2 SCS trials per anatomic spinal region per patient per lifetime is not considered reasonable and necessary¹⁻³; **OR**
 - ◆ A repeat trial after initial trial failure, unless extenuating circumstances were present that contributed to trial failure¹⁻³; **OR**
 - ◆ DRG or SCS trial in a patient with an existing SCS or DRG; **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, and newer technology is requested (including but not limited to BurstDR, high-frequency SCS, closed-loop SCS, etc.); **OR**
 - Lead and electrode replacement as both are not generally required at the time of a generator replacement due to the end of battery life; **OR**
 - ◆ Trials or implants performed by non-physicians; **OR**
 - ◆ Dorsal root ganglion (DRG) stimulation for all conditions except complex regional pain syndrome (CRPS) types I and II in the lower extremity^{1,44,45}.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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
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

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

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 has 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.⁴⁶

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.⁴⁷

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.⁴⁸

In their systematic review and meta-analysis of implanted neuromodulation interventions, which included 908 randomized participants across 35 published or ongoing studies, O'Connell et al (2022) found that patients treated with SCS experienced less pain and a higher quality of life 1-6 months after treatment, compared to patients who received only medical management or physical therapy. However, according to the authors, there is little evidence to suggest that SCS can reduce disability, medication use, or pain in the medium to long-term. Nor is it clear that SCS is cost-effective. The authors also note that possible complications of SCS implantation include lead displacement or fracture, wound infection, and the need for surgical revision or replacement.⁴⁹

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.⁵⁰

Centers for Medicare and Medicaid (CMS) Local and National Coverage determinations state that SCS may be appropriate as a late, if not last, resort treatment for chronic, intractable pain.¹⁻⁴ Notably, while neuropathic pain is identified as potentially best-suited for SCS, any severe, nociceptive intractable pain may be relieved by SCS. Regardless of the etiology of the pain, CMS notes the importance of careful patient selection and education prior to SCS implantation, requiring documentation of patient disclosure of all potential risks and benefits as well as psychological clearing.

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Clinical Guideline Revision History/Information

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Cohere Medicare Advantage Policy – Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy)

Clinical Policy for Medical Necessity Review

CHP-113-5 Version 5

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Table of contents

Procedure Codes (CPT/HCPCS)	3
Important Notices	11
Service: Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy) - Description	12
Service: Cervical Decompression - Medical Necessity Criteria	13
Service: Thoracic Decompression - Medical Necessity Criteria	16
Service: Lumbar or Sacral Decompression - Medical Necessity Criteria	19
Service: Partial excision of posterior vertebral component (e.g., spinous process, lamina or facet) - Medical Necessity Criteria	22
Service: Lumbar Discectomy - Medical Necessity Criteria	24
Clinical Harms and Benefits	27
Medical Evidence	28
References	29
Policy Revision History/Information	31

Procedure Codes (CPT/HCPCS)

Service: Cervical Decompression	
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
22899	Unlisted procedure, spine
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
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
63020	Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; 1 interspace, cervical
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
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)
63075	Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophytectomy; cervical, single interspace
63076	Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophytectomy; cervical, 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
63270	Laminectomy for excision of intraspinal lesion other than neoplasm, intradural; cervical
63275	Laminectomy for biopsy/excision of intraspinal neoplasm; extradural, cervical
63280	Laminectomy for biopsy/excision of intraspinal neoplasm; intradural, extramedullary, cervical
63285	Laminectomy for biopsy/excision of intraspinal neoplasm; intradural, intramedullary, cervical
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)

Service: Thoracic Decompression

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
22899	Unlisted procedure, spine
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
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
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
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)
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) (eg, herniated intervertebral disc), single segment; thoracic
63057	Transpedicular approach with decompression of spinal cord, equina and/or nerve root(s) (eg, 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) (eg, herniated intervertebral disc), thoracic; single segment
63066	Costovertebral approach with decompression of spinal cord or nerve root(s) (eg, herniated intervertebral disc), thoracic; each additional segment (List separately in addition to code for primary procedure)
63077	Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophytectomy; thoracic, single interspace
63078	Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophytectomy; 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
63266	Laminectomy for excision or evacuation of intraspinal lesion other than neoplasm, extradural; thoracic
63271	Laminectomy for excision of intraspinal lesion other than neoplasm, intradural; thoracic
63276	Laminectomy for biopsy/excision of intraspinal neoplasm; extradural, thoracic
63281	Laminectomy for biopsy/excision of intraspinal neoplasm; intradural, extramedullary, thoracic
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)

Service: Lumbar or Sacral Decompression

Code	Description
22899	Unlisted procedure, spine
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)
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)
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
63042	Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc, reexploration, single interspace; lumbar
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)
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)
63056	Transpedicular approach with decompression of spinal cord, equina and/or nerve root(s) (eg, herniated intervertebral disc), single segment; lumbar (including transfacet, or lateral extraforaminal approach) (eg, far lateral herniated intervertebral disc)
63057	Transpedicular approach with decompression of spinal cord, equina and/or nerve root(s) (eg, herniated intervertebral disc), single segment; each additional segment, thoracic or lumbar (List separately in addition to code for primary procedure)
63170	Laminectomy with myelotomy (eg, Bischof or DREZ type), cervical, thoracic, or thoracolumbar
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
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

63272	Laminectomy for excision of intraspinal lesion other than neoplasm, intradural; lumbar
63273	Laminectomy for excision of intraspinal lesion other than neoplasm, intradural; sacral
63277	Laminectomy for biopsy/excision of intraspinal neoplasm; extradural, lumbar
63278	Laminectomy for biopsy/excision of intraspinal neoplasm; extradural, sacral
63283	Laminectomy for biopsy/excision of intraspinal neoplasm; intradural, sacral
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)
C2614	Probe, percutaneous lumbar discectomy
S2350	Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophytectomy; lumbar, single interspace
S2351	Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophytectomy; lumbar, each additional interspace (list separately in addition to code for primary procedure)

Service: Partial excision of posterior vertebral component (e.g., spinous process, lamina or facet)

Code	Description
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)
22899	Unlisted procedure, spine
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)
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

Service: Lumbar Discectomy

Code	Description
22899	Unlisted procedure, spine
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
63030	Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; 1 interspace, lumbar
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)
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)
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)
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)
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
63282	Laminectomy for biopsy/excision of intraspinal neoplasm; intradural, extramedullary, lumbar
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

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.

Cohere Health, Inc. (" **Cohere** ") has published these clinical guidelines to determine the medical necessity of services (the " **Guidelines** ") for informational purposes only, and solely for use by Cohere's authorized " **End Users** ". These Guidelines (and any attachments or linked third-party content) are not intended to be a substitute for medical advice, diagnosis, or treatment directed by an appropriately licensed healthcare professional. These Guidelines are not in any way intended to support clinical decision-making of any kind; their sole purpose and intended use is to summarize certain criteria Cohere may use when reviewing the medical necessity of any service requests submitted to Cohere by End Users. Always seek the advice of a qualified healthcare professional regarding any medical questions, treatment decisions, or other clinical guidance. The Guidelines, including any attachments or linked content, are subject to change at any time without notice. This policy may be superseded by existing and applicable Centers for Medicare & Medicaid Services (CMS) statutes. To the extent that applicable state laws, regulations, or regulatory guidance impose requirements that differ from or supersede the provisions of these Guidelines, such state laws and regulations shall control. Diagnostic and therapeutic interventions addressed in these Guidelines are to be performed using pharmaceuticals, biologics, radiotracers, and medical devices that are FDA-approved or conditionally approved for their intended purpose. FDA approval status alone does not determine medical necessity or confer eligibility for coverage or reimbursement.

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Service: Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy) - 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.² Laminotomy (hemilaminectomy) involves the removal of a facet joint or partial lamina to allow decompression of the nerve root or dural sac.² A laminotomy is frequently performed with a lumbar discectomy for disc herniations.² A discectomy is performed to remove all or part of a herniated or damaged intervertebral disc.³ Foraminotomy involves direct compression of a nerve root by enlarging the neural foramen via removal of the lamina, facet joint, and ligamentum flavum.² Laminoplasty is a motion-preserving procedure that avoids removing the lamina; instead, it is cut on one side and scored on the other, opening the canal to create more space.⁴ The lamina is often stabilized with plates and screws.⁴

Service: Cervical Decompression - Medical Necessity Criteria

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy)* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 - Related CMS Policies (NCDs or LCDs)

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Indications

- **Cervical decompression** is considered appropriate if **ANY** of the following is **TRUE**:
 - Cervical myelopathy, and **ALL** of the following:
 - Advanced imaging with radiologist report (magnetic resonance imaging [MRI] or computed tomography [CT] myelogram) reveals spinal cord compressive pathology (e.g., myelomalacia of cord signal change consistent with the presentation)⁵; **AND**
 - **ANY** of the following⁶:
 - Cervical spondylosis⁷; **OR**
 - Congenital stenosis⁷; **OR**
 - Ossification of posterior longitudinal ligament (OPLL)⁷; **OR**
 - Recurrent spinal stenosis⁷; **OR**
 - Treatment of cervical or upper thoracic spine injury with myelopathy (e.g., trauma); **AND**

- **ANY** of the following myelopathy symptoms:
 - ☐ Balance problems^{8,9}; **OR**
 - ☐ Bowel or bladder dysfunction⁸; **OR**
 - ☐ Gait disturbance or abnormality^{8,9}; **OR**
 - ☐ Lhermitte phenomenon; **OR**
 - ☐ Loss of dexterity/coordination⁸; **OR**
 - ☐ Lower or upper extremity weakness with spasticity; **OR**
 - ☐ Paresthesias or numbness in the upper extremities; **AND**
- **ANY** of the following myelopathy physical examination findings:
 - ☐ Decreased sensation, proprioception, or vibratory sense⁸; **OR**
 - ☐ Hoffman's sign⁹; **OR**
 - ☐ Lhermitte's sign: an electric shock-like sensation⁹; **OR**
 - ☐ Loss of sphincter tone; **OR**
 - ☐ Upper or lower motor neuron findings in the extremities (e.g., hypertonicity, hyperreflexia, multiple beats or sustained clonus, positive Babinski)⁹; **OR**
- Cervical radiculopathy, and **ALL** of the following¹⁰:
 - Advanced imaging (MRI or CT myelogram) with radiologist report reveals diagnostic findings of the spinal cord or nerve root compressive pathology consistent with clinical symptoms¹¹; **AND**
 - **ANY** of the following cervical spine symptoms:
 - ☐ Decreased sensation, paresthesias, or weakness documented; **OR**
 - ☐ Neck pain; **OR**
 - ☐ Radicular arm pain, motor, or sensory changes; **OR**
 - ☐ Scapular or periscapular pain; **AND**
 - **ANY** of the following cervical radiculopathy positive specialty tests:
 - ☐ Documented sensory or motor loss; **OR**
 - ☐ Lateral flexion test (radicular pain on lateral bending to ipsilateral side, pain often relieved with contralateral bending); **OR**
 - ☐ Shoulder abduction test (symptoms relieved with shoulder abduction); **OR**
 - ☐ Spurling's test or maneuver or compression test (reproduction of symptoms with neck extension, lateral flexion, and downward compression or loading); **OR**
 - ☐ Valsalva test (reproduction of pain with breathholding and bearing down, as if during a bowel movement); **AND**
 - **ANY** of the following:
 - ☐ Failure of conservative management^A including **ALL** of the following:
 - ▲ Duration greater than or equal to 6 weeks; **AND**
 - ▲ **AT LEAST TWO** of the following:
 - △ Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **OR**
 - △ **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 12 months; **OR**
 - ◆ Progression or worsening of symptoms due to PT/HEP treatment; **OR**

△ **ANY** of the following:

- ◆ Corticosteroid injection if medically appropriate; **OR**
- ◆ Documentation that corticosteroid injection is contraindicated; **OR**
- Severe pain or disability that significantly affects quality of life and limits daily life (e.g., working ability, forced bed rest, ability to provide self-care); **OR**
- Significant or progressive neurologic deficit; **OR**
- Basilar Invagination; **OR**
- C1-2 stenosis; **OR**
- Rheumatoid instability; **OR**
- **ANY** of the following in the cervical region⁷:
 - Epidural/subdural hematoma; **OR**
 - Fracture; **OR**
 - Infection; **OR**
 - Severe or progressive neurological deficit; **OR**
 - Tumor.

Non-Indications

- **Spinal decompression** is not considered appropriate if **ANY** of the following are **TRUE**^{B,10}:
 - Any percutaneous discectomy technique, including laminectomy, laminotomy, foraminectomy, foraminotomy, foraminolaminectomy, laminoplasty, or corpectomy^C; **OR**
 - Decompression that would create post-operative instability; **OR**
 - Isolated, nonspecific low back pain without any accompanying symptoms²; **OR**
 - Use of annular closure devices^{35,36}; **OR**
 - Automated percutaneous lumbar discectomy (APLD)/automated percutaneous mechanical lumbar discectomy; **OR**
 - Endoscopic disc decompression (endoscopic rhizotomy), when in combination with ablation (radiofrequency ablation) and annulus modulation/repair; **OR**
 - Laser discectomy, regardless of the approach^D; **OR**
 - Laser laminectomy.

Definitions and Notes

^A**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.

^B*S codes* are not payable by Medicare.

^CEvidence 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.

^DLaser discectomy approaches that are not appropriate for spinal decompression include percutaneous laser discectomy, laser-assisted discectomy, laser disc decompression, laser-assisted disc decompression or percutaneous laser disc decompression.

Service: Thoracic Decompression - Medical Necessity Criteria

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy)* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 - Related CMS Policies (NCDs or LCDs)

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Indications

- **Thoracic decompression** is considered appropriate if **ANY** of the following is **TRUE** :
 - Thoracic myelopathy, and **ALL** of the following:
 - Advanced imaging with radiologist report (MRI or CT myelogram) reveals spinal cord compressive pathology (e.g., myelomalacia or cord signal change consistent with the presentation)⁵; **AND**
 - Treatment of thoracic spine injury with myelopathy (e.g., trauma); **AND**
 - **ANY** of the following myelopathy symptoms:
 - Balance problems¹²; **OR**
 - Bowel or bladder dysfunction¹²; **OR**
 - Gait disturbance or abnormality^{12,13}; **OR**
 - Lhermitte phenomenon; **OR**
 - Lower extremity weakness with spasticity¹³; **AND**

- **ANY** of the following myelopathy physical examination findings:
 - Decreased sensation, proprioception, or vibratory sense; **OR**
 - Lhermitte's sign: an electric shock-like sensation; **OR**
 - Loss of sphincter tone; **OR**
 - Upper or lower motor neuron findings in the extremities (e.g., hypertonicity, hyperreflexia, clonus, positive Babinski)¹³; **OR**
- Thoracic radiculopathy, and **ALL** of the following:
 - Advanced imaging (MRI or CT myelogram) with radiologist report reveals diagnostic findings of the spinal cord or nerve root compressive pathology consistent with the condition and clinical symptoms¹⁴; **AND**
 - **ANY** of the following conditions:
 - Synovial facet cyst; **OR**
 - Thoracic stenosis; **AND**
 - **ANY** of the following thoracic spine symptoms¹⁵:
 - Scapular, periscapular, or chest wall pain; **OR**
 - Radicular chest pain; **OR**
 - Radicular abdominal pain; **OR**
 - Thoracic pain; **AND**
 - Radicular pain exacerbated by activities; **AND**
 - **ANY** of the following:
 - Failure of conservative management^A, including **ALL** of the following:
 - ▲ Duration greater than or equal to 6 weeks; **AND**
 - ▲ **AT LEAST TWO** of the following:
 - △ Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or prescription other pain medications, (e.g., oral steroids, neuropathic pain medications) if not contraindicated¹⁵; **OR**
 - △ **ANY** of the following:
 - ◆ **ALL** of the following¹⁵:
 - ◇ PT and/or documentation of patient compliance with a HEP provided by a physician or physical therapist targeting the requested region; **AND**
 - ◇ PT/HEP trial for a duration of 6 weeks or more with the past 12 months; **OR**
 - ◆ Progression or worsening of symptoms due to PT/HEP treatment; **OR**
 - △ **ANY** of the following:
 - ◆ Corticosteroid injection if medically appropriate; **OR**
 - ◆ Documentation that corticosteroid injection is contraindicated; **OR**
 - Severe pain or disability significantly affects quality of life and limits daily life (e.g., working ability, forced bed rest, ability to provide self-care); **OR**
 - Significant or progressive neurologic deficit; **OR**
- **ANY** of the following in the thoracic region:
 - Epidural/subdural hematoma; **OR**
 - Fracture¹⁶; **OR**
 - Infection¹⁶; **OR**
 - Severe or progressive neurological deficit¹⁶; **OR**
 - Tumor.¹⁶

Non-Indications

- **Spinal decompression** is not considered appropriate if **ANY** of the following are **TRUE**^{B,10}:
 - Any percutaneous discectomy technique, including laminectomy, laminotomy, foraminectomy, foraminotomy, foraminolaminectomy, laminoplasty, or corpectomy^C; **OR**
 - Decompression that would create post-operative instability; **OR**
 - Isolated, nonspecific low back pain without any accompanying symptoms²; **OR**
 - Use of annular closure devices^{35,36}; **OR**
 - Automated percutaneous lumbar discectomy (APLD)/automated percutaneous mechanical lumbar discectomy; **OR**
 - Endoscopic disc decompression (endoscopic rhizotomy), when in combination with ablation (radiofrequency ablation) and annulus modulation/repair; **OR**
 - Laser discectomy, regardless of the approach^D; **OR**
 - Laser laminectomy.

Definitions and Notes

^A**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.

^B*S codes* are not payable by Medicare.

^CEvidence 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.

^DLaser discectomy approaches that are not appropriate for spinal decompression include percutaneous laser discectomy, laser-assisted discectomy, laser disc decompression, laser-assisted disc decompression or percutaneous laser disc decompression.

Service: Lumbar or Sacral Decompression - Medical Necessity Criteria

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy)* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 - Related CMS Policies (NCDs or LCDs)

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Indications

- **Lumbar or sacral decompression** is considered appropriate if **ANY** of the following is **TRUE**:
 - Lumbar neurogenic claudication or radiculopathy, and **ALL** of the following^{2,17}:
 - Advanced imaging (MRI or CT myelogram) with radiologist report reveals diagnostic findings of the spinal cord or nerve root compressive pathology consistent with the condition and clinical symptoms^{14,18}; **AND**
 - **ANY** of the following conditions:
 - Degenerative/isthmic spondylolisthesis; **OR**
 - Lumbar stenosis^{19,20}; **OR**
 - Synovial facet cyst; **AND**
 - **ANY** of the following symptoms:
 - Exacerbating factors include standing, walking, and other upright activities; **OR**

- ☐ Gluteal or low back pain; **OR**
- ☐ Lower extremity pain, weakness, fatigue, paresthesias, and sensory changes; **OR**
- ☐ Lower extremity pain that is made worse by walking; **AND**
- **ANY** of the following:
 - ☐ Failure of conservative management^A, including **ALL** of the following:
 - ▲ Duration greater than or equal to 6 weeks; **AND**
 - ▲ **AT LEAST TWO** of the following:
 - △ Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **OR**
 - △ **ANY** of the following:
 - ◆ **ALL** of the following:
 - ◇ PT and/or documentation of patient compliance with a HEP provided by a physician or physical therapist targeting the requested region; **AND**
 - ◇ PT/HEP trial for a duration of 6 weeks or more within the past 12 months; **OR**
 - ◆ Progression or worsening of symptoms due to PT/HEP treatment; **OR**
 - △ **ANY** of the following:
 - ◆ Corticosteroid injection if medically appropriate; **OR**
 - ◆ Documentation that corticosteroid injection is contraindicated; **OR**
 - ☐ Severe pain or disability significantly affects quality of life and limits daily life (e.g., working ability, forced bed rest, ability to provide self-care); **OR**
 - ☐ Significant or progressive neurologic deficit; **OR**
- Signs or symptoms of cauda equina syndrome and **ALL** of the following²:
 - Advanced imaging (MRI or CT myelogram) with radiologist report reveals acute cauda equina compression consistent with clinical symptoms¹⁴; **AND**
 - **ANY** of the following symptoms of cauda equina syndrome:
 - ☐ Bowel, bladder, and erectile dysfunction²¹; **OR**
 - ☐ Diffuse motor weakness; **OR**
 - ☐ New onset of lower extremity neurologic deficits not explained by a more proximal lesion²¹; **OR**
 - ☐ Saddle-distribution anesthesia²¹; **OR**
- **ANY** of the following in the lumbar or sacral region:
 - Epidural/subdural hematoma²; **OR**
 - Fracture²; **OR**
 - Foreign body²²; **OR**
 - Infection²; **OR**
 - Severe or progressive neurological deficit; **OR**
 - Tumor.²³

Non-Indications

- **Spinal decompression** is not considered appropriate if **ANY** of the following are **TRUE**^{B,10}:
 - Any percutaneous discectomy technique, including laminectomy, laminotomy, foraminectomy, foraminotomy, foraminolaminectomy, laminoplasty, or corpectomy^C; **OR**
 - Decompression that would create post-operative instability; **OR**
 - Isolated, nonspecific low back pain without any accompanying symptoms²; **OR**
 - Use of annular closure devices^{35,36}; **OR**

- Automated percutaneous lumbar discectomy (APLD)/automated percutaneous mechanical lumbar discectomy; **OR**
- Endoscopic disc decompression (endoscopic rhizotomy), when in combination with ablation (radiofrequency ablation) and annulus modulation/repair; **OR**
- Laser discectomy, regardless of the approach^D; **OR**
- Laser laminectomy.

Definitions and Notes

^AFailure 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.

^B*S codes* are not payable by Medicare.

^CEvidence 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.

^DLaser discectomy approaches that are not appropriate for spinal decompression include percutaneous laser discectomy, laser-assisted discectomy, laser disc decompression, laser-assisted disc decompression or percutaneous laser disc decompression.

Service: Partial excision of posterior vertebral component (e.g., spinous process, lamina or facet) - Medical Necessity Criteria

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

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- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy)* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 - Related CMS Policies (NCDs or LCDs)

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Indications

- **Partial excision of posterior vertebral component (e.g., spinous process, lamina or facet)** is considered appropriate if **ANY** of the following is **TRUE**:
 - **ALL** of the following:
 - Baastrup's disease (kissing spines)²⁴⁻²⁶; **AND**
 - Failure of conservative treatment^A including **ALL** of the following²⁴⁻²⁶:
 - Duration greater than or equal to 6 weeks; **AND**
 - **ANY** of the following:
 - ▲ Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications if not contraindicated; **OR**
 - ▲ Interspinous process steroid injection; **OR**

- Gibbus or spine deformity with impending skin breakdown²⁷; **OR**
- Open spine wound requiring bone debridement^{28,29}; **OR**
- Painful bursa over prominent spinous process refractory to conservative treatment including steroid injection^{30,31}; **OR**
- Tumors in the spinous process, lamina, or facet articular processes (e.g., osteoid osteoma, osteoblastoma, aneurysmal bone cysts).^{23,32,33}

Non-Indications

- **Spinal decompression** is not considered appropriate if **ANY** of the following are **TRUE**^{B,10}:
 - Any percutaneous discectomy technique, including laminectomy, laminotomy, foraminectomy, foraminotomy, foraminolaminectomy, laminoplasty, or corpectomy^C; **OR**
 - Decompression that would create post-operative instability; **OR**
 - Isolated, nonspecific low back pain without any accompanying symptoms²; **OR**
 - Use of annular closure devices^{35,36}; **OR**
 - Automated percutaneous lumbar discectomy (APLD)/automated percutaneous mechanical lumbar discectomy; **OR**
 - Endoscopic disc decompression (endoscopic rhizotomy), when in combination with ablation (radiofrequency ablation) and annulus modulation/repair; **OR**
 - Laser discectomy, regardless of the approach^D; **OR**
 - Laser laminectomy.

Definitions and Notes

^AFailure 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.

^BS codes are not payable by Medicare.

^CEvidence 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.

^DLaser discectomy approaches that are not appropriate for spinal decompression include percutaneous laser discectomy, laser-assisted discectomy, laser disc decompression, laser-assisted disc decompression or percutaneous laser disc decompression.

Service: Lumbar Discectomy - Medical Necessity Criteria

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy)* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 - Related CMS Policies (NCDs or LCDs)

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	No NCD available	N/A	N/A	N/A
LCD	No LCD Available for Jurisdiction	N/A	N/A	Use Cohere Medicare Advantage internal coverage criteria

Indications

- **Lumbar discectomy** is considered appropriate if **ANY** of the following is **TRUE**:
 - Lower thoracic or lumbar radiculopathy with lumbar disc herniation, and **ALL** of the following³:
 - Advanced imaging (MRI or CT myelogram) with radiologist report reveals disc herniation consistent with clinical findings^{3,4}; **AND**
 - **ANY** of the following lumbar radiculopathy symptoms:
 - Increased pain with coughing, sneezing, or straining; **OR**
 - Low back pain; **OR**
 - Unrelenting lower extremity pain, paresthesia, weakness, or numbness in a myotomal or dermatome distribution; **AND**
 - **ANY** of the following physical examination findings:
 - Absent or decreased lower extremity reflexes; **OR**
 - Sensory disturbance (i.e., loss of sensation or decreased sensory response) or weakness in a dermatomal/myotomal distribution; **OR**

- ☐ **ANY** of the following positive specialty tests:
 - ▲ Crossed Lasègue's (or crossed straight leg raise); **OR**
 - ▲ Femoral nerve stretch; **OR**
 - ▲ Slump; **OR**
 - ▲ Straight leg raise; **AND**
- **ANY** of the following:
 - ☐ Failure of conservative management^A, including **ALL** of the following:
 - ▲ Duration greater than or equal to 6 weeks; **AND**
 - ▲ **AT LEAST TWO** of the following^{3,18}:
 - △ Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications if not contraindicated; **OR**
 - △ **ANY** of the following:
 - ◆ **ALL** of the following:
 - ◇ PT and/or documentation of patient compliance with a 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 12 months; **OR**
 - ◆ Progression or worsening of symptoms due to PT/HEP treatment; **OR**
 - △ **ANY** of the following:
 - ◆ Corticosteroid injection if medically appropriate; **OR**
 - ◆ Documentation that corticosteroid injection is contraindicated; **OR**
 - ☐ Severe pain or disability significantly affects quality of life and limits daily life (e.g., working ability, forced bed rest, ability to provide self-care); **OR**
 - ☐ Significant or progressive neurologic deficit; **OR**
- Signs or symptoms of cauda equina syndrome with lumbar disc herniation and **ALL** of the following³:
 - Advanced imaging (MRI or CT myelogram) with radiologist report reveals disc herniation that causes moderate to severe lumbar stenosis consistent with clinical symptoms¹⁴; **AND**
 - **ANY** of the following symptoms of cauda equina syndrome:
 - ☐ Bowel, bladder, and erectile dysfunction; **OR**
 - ☐ Diffuse motor weakness; **OR**
 - ☐ New onset of lower extremity neurologic deficits not explained by a more proximal lesion; **OR**
 - ☐ Saddle-distribution anesthesia; **OR**
- Infection involving the disc space, and **ANY** of the following³:
 - 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 for **ANY** of the following:
 - ☐ 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**^{B,10}:
 - Any percutaneous discectomy technique, including laminectomy, laminotomy, foraminectomy, foraminotomy, foraminolaminectomy, laminoplasty, or corpectomy^C; **OR**
 - Decompression that would create post-operative instability; **OR**
 - Isolated, nonspecific low back pain without any accompanying symptoms²; **OR**

- Use of annular closure devices^{35,36}; **OR**
- Automated percutaneous lumbar discectomy (APLD)/automated percutaneous mechanical lumbar discectomy; **OR**
- Endoscopic disc decompression (endoscopic rhizotomy), when in combination with ablation (radiofrequency ablation) and annulus modulation/repair; **OR**
- Laser discectomy, regardless of the approach^D; **OR**
- Laser laminectomy.

Definitions and Notes

^A**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.

^B*S codes* are not payable by Medicare.

^CEvidence 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.

^DLaser discectomy approaches that are not appropriate for spinal decompression include percutaneous laser discectomy, laser-assisted discectomy, laser disc decompression, laser-assisted disc decompression or percutaneous laser disc decompression.

Clinical Harms and Benefits

Cohere Health Medicare Advantage determinations are made in accordance with CMS's decisioning requirements outlined in 42 CFR 422.101. When CMS guidelines are not fully established, Cohere Health develops publicly accessible medical necessity criteria based on widely accepted medical society guidelines and/or robust clinical literature. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.¹

Internal coverage criteria in *Cohere Medicare Advantage Policy - Spinal Decompression (Laminectomy, Laminotomy, Foraminotomy, and Discectomy)* are developed to provide the following:

- Improved patient selection for spinal decompression (laminectomy, laminotomy, foraminotomy, and discectomy), supporting better health outcomes.
- Care aligned to recommendations of society guidelines such as the American College of Radiology (ACR), Infectious Diseases Society of America (IDSA), International Society for the Advancement of Spine Surgery (ISASS), North American Spine Society (NASS), and Pediatric Orthopaedic Society of America (POSNA).^{2,3,5,7,10,11,14,17,18,20,28,34}
- Appropriate allocation of healthcare resources at the individual and population levels.

Medical Evidence

Latka K., Kozłowska, Domisiewicz, Klepinowski, and Latka D. (2026) performed a meta-analysis to compare full endoscopic lumbar discectomy (FELD) to other more invasive surgical approaches in adults greater than or equal to 18 years. The authors included 50 studies in their review. While the authors found that FELD had lower complication rates than open nonmicroscopic discectomy (OD) and conventional microdiscectomy (MD), there was no difference between FELD and tubular microdiscectomy. The authors stated that FELD had some clinical advantages, but better-designed randomized controlled trials (RCTs) are needed to establish the procedure's utility in treating lumbar degenerative spine disease.³⁷

Amybaliya, De Bruyn, and Depreitere (2026) conducted a systematic review to evaluate differences between surgical and non-surgical management of lumbar disc herniation. 25 articles were included to compare surgical vs non-surgical management. The authors found that, while surgery provided initial pain relief post-surgery, surgical vs. non-surgical management did not affect pain reduction after 12 weeks. However, surgery significantly reduced pain compared to non-surgical management over 12 months, indicating that surgery is optimal in cases of chronic nerve compression.³⁸

Karlsson et al. (2024) conducted a multi-center RCT of 247 patients to compare the Oswestry Disability Index (ODI), EuroQol five-dimension questionnaire (EQ-5D), visual analog scales for back and leg pain, and patient-reported outcomes in patients with lumbar spinal stenosis with or without degenerative spinal stenosis who either received decompression alone or decompression with fusion. After 5 years, ODI scores were similar across treatments; however, EQ-5D scores were higher in those who received decompression alone than in those who received decompression with fusion, suggesting that adding fusion to decompression surgeries may not improve patient outcomes 5 years post-surgery.³⁹

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-surgical intervention. 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.⁴⁰

Thomé et al. (2018) conducted an RCT of 554 patients evaluating annular closure during lumbar microdiscectomy to prevent 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.³⁶

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 much 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).⁴¹

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, which stated that magnetic resonance imaging (MRI) is recommended as initial imaging for acute onset, chronic, or progressive myelopathy.⁵ McDonald et al. (2018) recommend radiography, MRI, or computed tomography (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; however, there is disagreement on the appropriateness of MRI with or without contrast. The authors concluded that CT myelography may be appropriate.¹¹ The Low Back Pain ACR Appropriateness Criteria recommended 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 persistent or progressive symptoms who have 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 is recommended as Usually Appropriate.¹⁴

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Policy Revision History/Information

Clinical Policy Version	Date	Review History
Version 1	05/31/2024	Original Date.
Version 2	06/10/2024	422.101 Disclaimer added.
Version 3	05/29/2025	Annual review. CPT Code 62287 was removed from this policy and added to a non-coverage policy: Cohere Medicare Advantage Policy - Intradiscal biacuplasty, Percutaneous Intradiscal Radiofrequency Thermocoagulation (PIRFT), or Intradiscal Electrothermal Therapy (IDET). Included indications for Percutaneous Image-Guided Lumbar Decompression (PILD) as a standalone section, as the NCD only covers this procedure in Coverage with Evidence Development (CED) studies (see Note). NASS coverage policy recommendation for Lumbar discectomy added. Ensured citations for NASS coverage policies, evidence-based clinical guidelines, and expert panel recommendations are present throughout and updated indications accordingly. Split indications for cervical or thoracic radiculopathy into two: cervical spine symptoms and thoracic spine symptoms. Updated conservative care indications; patients must have at least two. Added indications for spinal decompression without fusion for degenerative/isthmic spondylolisthesis or synovial facet cyst (consistent with NASS). 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.]). Literature review - Recommended Clinical Approach, Harms & Benefits, and Medical Evidence sections updated (including references).
Version 4	12/11/2025	Revision. Removed NCD 150.13 reference and link from policy. Removed CED coverage criteria for percutaneous image-guided lumbar decompression for lumbar stenosis from NCD 150.13. Removed code 0275T from policy. No other criteria changes.
Version 5	05/21/2026	Annual review. Updated template, including addition of "Table 1 - Related CMS Policies" that describes Cohere definition of which LCDs/NCDs are not fully established. Updated indications for cervical myelopathy; cervical radiculopathy; thoracic radiculopathy; lumbar neurogenic claudication or radiculopathy; lumbar discectomy exam findings; severe or progressive neurological deficit; and conservative care. Added indications for basilar invagination; C1-2 stenosis; rheumatoid instability; cervical epidural/subdural hematoma; cervical fracture; cervical infection; cervical tumor; and lumbar/sacral foreign body. Added non-indication for decompression causing post-operative instability. Removed non-indication for kyphosis. Rearranged bullets for improved usability and organization. Added 4 notes. Added the following codes: 22101, 22103, 62331, C9757. Updated Harms and Benefits. Expanded the Medical Evidence section. References reviewed and updated.



Cohere Medicare Advantage Policy – Spinal Osteotomy

Clinical Guidelines for Medical Necessity Review

Version: 1

Effective Date: April 10, 2025

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy – Spinal Osteotomy

Date of last literature review: 04/09/2025

Document last updated: 04/09/2025

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Spinal Osteotomy	4
Benefit Category	4
Related CMS Documents	4
Recommended Clinical Approach	4
Evaluation of Clinical Harms and Benefits	4
Medical Necessity Criteria	6
Indications	6
Non-Indications	7
Level of Care Criteria	7
Procedure Codes (CPT/HCPCS)	7
Medical Evidence	9
References	11
Clinical Guideline Revision History/Information	13

Medical Necessity Criteria

Service: Spinal Osteotomy

Benefit Category

Not applicable.

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

- There are no applicable NCDs and/or LCDs for spinal osteotomy.

Recommended Clinical Approach

Spinal osteotomy encompasses several invasive surgical procedures utilized to correct deformities of the spine including kyphosis, scoliosis, and lordosis. Posterior column osteotomies include the Smith-Peterson or Ponte osteotomy and are generally utilized for patients with non-fixed or mobile deformities in the sagittal or coronal planes. Three-column osteotomy procedures include pedicle subtraction osteotomy or vertebral column resection and are generally performed on patients with fixed or non-mobile, complex deformities. Spinal ligaments, bones, and facet joints may be removed and hardware such as hooks, rods and/or screws may be placed. There is often a high risk of bleeding and neurological complications with spinal osteotomies.¹ The goals of treatment include improving pain, balance, and preventing worsening of the deformity.²⁻³

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of spinal osteotomy. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks

associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- Gupta et al (2020) stated that patients with poor bone quality could be at risk for failure of osteotomy closure as well as poor healing.⁴
- Delays in spinal osteotomy for patients with significant chin-to-chest deformity can result in chronic pain and decreased mobility, potentially leading to opioid dependency.⁵
- Spinal osteotomy is associated with a high risk for blood loss and neurological damage. Kose and colleagues (2017) describe the potential for neural impingement related to the decrease in foraminal height from kyphosis correction. Additionally, they state that during ligamentectomy or facetectomy profuse epidural bleeding may occur.²
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Bourghli et al (2024) evaluated lumbar subtraction osteotomy techniques and outcomes and concluded that despite being a high-risk procedure for neurological and hematologic complications, the procedure has exhibited significant success in recent years in managing fixed sagittal malalignment in the thoracic and lumbar spine.³
- Improved patient outcomes by ensuring timely and appropriate access to the procedure. Relief of pain and improved quality of life are key goals of spinal osteotomy.
- Spinal osteotomy is often performed on patients with a history of prior spine surgery such as spinal fusion. Satin et al (2017) recommend a balanced approach by incorporating sagittal balance and spine mechanics in addition to avoidance of overaggressive deformity correction. These considerations are necessary to improve long-term outcomes and reduce complications.⁶
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

→ **Spinal osteotomy (cervical, thoracic, or lumbar)** is considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Posterior column osteotomy (Smith–Peterson or Ponte osteotomy) with **ALL** of the following⁷⁻⁸:
 - Radiographic or advanced imaging has confirmed spinal deformity; **AND**
 - **ANY** of the following:
 - Non-fixed (mobile) sagittal plane deformities (less than 30 degrees correction required); **OR**
 - Non-fixed (mobile) coronal plane deformities (less than 30 degrees correction required)⁹; **OR**
 - Long, gradual, rounded kyphosis (e.g., Scheuermann kyphosis)¹⁰; **AND**
 - Clinical documentation supports that additional conservative treatment interventions (preceding referral to spine surgeon) would not be expected to yield meaningful improvement; **AND**
 - **ANY** of the following symptoms¹:
 - Pain or neurological deficit; **OR**
 - Lack of balance when sitting or standing or functional disability; **OR**
 - Radicular leg pain or weakness; **OR**
 - Decreased cardiopulmonary function¹¹; **OR**

- ◆ Three-column osteotomy (pedicle subtraction osteotomy or vertebral column resection) with **ALL** of the following^{3,9}:
 - Radiographic or advanced imaging has confirmed advanced spinal deformity; **AND**
 - **ANY** of the following:
 - Ankylosing spondylitis⁶⁻⁷; **OR**
 - Flatback syndrome; **OR**
 - Fixed (non-mobile) sagittal plane deformity greater than 30 degrees⁶; **OR**
 - Fixed (non-mobile) coronal plane deformity greater than 30 degrees¹; **OR**
 - Thoracic kyphosis greater than 50 degrees⁶; **OR**
 - History of circumferential fusion¹²; **AND**
 - Clinical documentation supports that additional conservative treatment interventions (preceding referral to spine surgeon) would not be expected to yield meaningful improvement; **AND**
 - **ANY** of the following symptoms¹:
 - Pain or neurological deficit; **OR**
 - Lack of balance when sitting or standing or functional disability; **OR**
 - Radicular leg pain or weakness; **OR**
 - Decreased cardiopulmonary function.¹¹

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^{4,9}; **OR**
- ◆ Poor bone quality⁴; **OR**
- ◆ The patient has normal sagittal and/or coronal alignment.⁴

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	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
22210	Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; cervical
22212	Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; thoracic
22214	Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; lumbar
22220	Osteotomy of spine, including discectomy, anterior approach, single vertebral segment; cervical
22222	Osteotomy of spine, including discectomy, anterior approach, single vertebral segment; thoracic
22224	Osteotomy of spine, including discectomy, anterior approach, single vertebral segment; lumbar

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Medical Evidence

Passias et al (2022) published a retrospective cohort review (2008–2018) of adults with spinal deformity who were greater than or equal to 18 years of age. The three-column osteotomy was stated to have potential for spinal realignment; however, complication rates are high. There were 13 participating centers in the study of these adults having undergone surgical spinal deformity correction with fusion to the pelvis. A total of 752 patients met the inclusion criteria with 138 having received the three-column osteotomy. Group I contained 79 patients and Group II contained 59 patients. 85 percent of patients were treated surgically with a posterior-only approach and 15 percent 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.¹³

In a 2024 systematic review, Coskun and colleagues evaluated clinical and radiologic outcomes of posterior column extension, pedicle subtraction, and vertebral column resection osteotomies in adult chin-to-chest deformity. There were 16 non-comparative studies including 288 patients. 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. The group ultimately concluded that the studies reviewed were lower quality and therefore limited the evidence. Corrective osteotomies were determined to have positive results as the visual analog scales and neck disability indexes improved with the patients reviewed in the study.⁵

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 of degenerative flatback specimens and an iatrogenic group, specimens were subjected to simulated standing posture with a nominal sacral slope of 45 degrees 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 specimen group, flatback deformity was created with *in-situ* immobilization and eventually LLIF and PCO performed at the higher lumbar vertebrae areas. The group concluded that placement of ALIF cages in lower lumbar segments markedly improved the degenerative flatback specimens, and LLIF cages in addition to

PCO improved alignment in both degenerative and iatrogenic flatback deformities.¹⁴

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Original Date: April 10, 2025		
Review History		



Cohere Medicare Advantage Policy – Subchondroplasty

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 27, 2024

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Subchondroplasty

Date of last literature review: 5/27/2024

Document last updated: 5/27/2024

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service:	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	4
Level of Care Criteria	4
Procedure Codes (CPT/HCPCS)	5
Medical Evidence	6
References	7
Clinical Guideline Revision History/Information	8

Medical Necessity Criteria

Service: Subchondroplasty

Benefit Category

Not applicable.

Recommended Clinical Approach

Subchondroplasty is a novel technique aimed at reducing pain by treating bone lesions caused by knee osteoarthritis and insufficiency fractures. The procedure involves the use of bone substitute material that is injected into areas requiring structural support in the subchondral bone.¹

Medical Necessity Criteria

Indications

- **Subchondroplasty** is considered appropriate if **ALL** of the following are **TRUE**:
- ◆ This procedure is unproven and not medically necessary. There is insufficient evidence of its effectiveness for these indications.

Non-Indications

- **Subchondroplasty** is not considered appropriate if **ALL** of the following are **TRUE**:
- ◆ This procedure is unproven and not medically necessary. There is insufficient evidence of its effectiveness for these indications.

Level of Care Criteria

Outpatient

Procedure Codes (HCPCS/CPT)

HCPCS/CPT Code	Code Description
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

Di Matteo et al. (2021) performed a systematic review to study the efficacy of intraosseous injections for patients with bone marrow lesions that are impacted by knee osteoarthritis. Twelve studies were identified that used various types of injections. A total of 459 patients were included with one of the three types of injections – calcium phosphate, platelet-rich plasma, and bone marrow concentrate. While injections are minimally invasive and have a low complication rate, the research lacks high-quality evidence to establish support.²

Krebs et al. (2020) conducted a small retrospective chart review to determine the outcomes of knee arthroscopy with adjunctive subchondroplasty. These include improvement of self-rated visual analog scale (VAS) pain scores, rate of conversion to arthroplasty, and overall satisfaction following the procedure. While the procedure demonstrated positive outcomes, additional research is needed.³⁻⁴

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Cohere Medicare Advantage Policy – Tarsometatarsal Arthrodesis

Clinical Policy for Medical Necessity Review

Version: 3

Revision Date: May 22, 2025

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Policy Information:

Specialty Area: Disorders of the Musculoskeletal System

Policy Name: Cohere Medicare Advantage Policy - Tarsometatarsal Arthrodesis

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Tarsometatarsal Arthrodesis	4
Related CMS Documents	4
Description	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	5
Definitions	5
Level of Care Criteria	5
Procedure Codes (CPT/HCPCS)	6
Evaluation of Clinical Harms and Benefits	7
Medical Evidence	9
References	11
Clinical Guideline Revision History/Information	13

Medical Necessity Criteria

Service: Tarsometatarsal Arthrodesis

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

- There are no applicable NCDs or LCDs for tarsometatarsal arthrodesis.

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.¹⁻²

Medical Necessity Criteria

Indications

Tarsometatarsal arthrodesis is considered appropriate if **ALL** of the following are **TRUE**¹⁻²:

- The patient has **ANY** of the following positive findings:
 - Bunion deformity and **ALL** of the following:
 - Persistent pain; **AND**
 - Difficulty walking; **OR**
 - Documented hypermobility of the first TMT joint suggested by greater than 10mm of total sagittal motion; **OR**
 - Painful TMT joint with tenderness on exam; **OR**
 - Hindfoot deformity or arthrosis and triple arthrodesis indicated; **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, including 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**
 - Splinting or padding; **OR**
 - Orthotics; **AND**
- Radiographic confirmation with report (must be weight-bearing radiographs of the foot) of **ANY** of the following⁸:
 - Intermetatarsal (IM) angle greater than 15 degrees³; **OR**
 - Advanced osteoarthritis of the tarsometatarsal (TMT) joint (e.g., joint space narrowing, osteophyte formation, subchondral cysts)⁹; **OR**
 - Traumatic disruption of the TMT articulation.

Non-Indications

Tarsometatarsal arthrodesis is not considered appropriate if **ANY** of the following is **TRUE**^{2,10}:

- The patient has not reached skeletal maturity; **OR**
- Inadequate blood supply that could prevent healing; **OR**
- The presence of active, untreated infection at the surgical site; **OR**
- Significant bone loss with shortening of the foot rays that requires bone block fusion.

Definitions

None applicable

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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 (e.g., flatfoot correction)
28740	Arthrodesis, midtarsal or tarsometatarsal, single joint

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS' required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.

The potential clinical harms of using these criteria for tarsometatarsal arthrodesis may include:

- Adverse effects from delayed or denied treatment, which include nerve damage, osteoarthritis, worsening of chronic pain, worsening deformity, and increased fall risk.¹¹
- Inherent surgical complications include but are not limited to standard risks of anesthesia, infection, and iatrogenic injury.
- Surgical complications specific to this procedure include but are not limited to nonunion, malunion, hardware issues, compensatory joint arthrosis, peripheral nerve damage, and recurrent or malaligned deformities.¹²

The clinical benefits of using these criteria include:

- Improved patient selection for tarsometatarsal arthrodesis resulting in better long-term outcomes including pain relief, improved stability, and increased quality of life for individuals with painful or unstable tarsometatarsal joints. The procedure effectively stabilizes the joint, reducing pain and allowing for greater weight-bearing and activity.¹³
- Maintenance of rigorous patient safety standards aligned to best available evidence.
- Appropriate allocation of healthcare resources at the individual beneficiary and population levels.

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. In part A, patients were randomized 1:1:1 into 3 groups: LB 266 mg, LB 133 mg, or bupivacaine hydrochloride 50 mg (BUPI). Part B participants were randomized 1:1 to LB (at the dose established by part A) or to the BUPI group. When administered via sciatic nerve block in the popliteal fossa following a bunionectomy, LB 133 mg demonstrated superior pain management compared to BUPI. Patients experienced a decrease in pain levels and opioid usage for up to 4 days post-surgery, with a notably higher proportion of participants abstaining from opioids.⁴

Ilfeld et al. (2021) performed a randomized controlled trial (RCT) to determine the impact of percutaneous peripheral nerve stimulation on postoperative pain levels and opioid usage. 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 usage after ambulatory orthopedic surgery without systemic side effects.⁵

Stødle et al. (2020) conducted an RCT to evaluate primary arthrodesis of the first tarsometatarsal (TMT) joint compared to temporary bridge plating for managing unstable Lisfranc injuries. This study compared primary arthrodesis (PA) and temporary bridge plate (BP) treatments for Lisfranc injuries. A total

of 48 patients were followed for 2 years. 24 patients were randomized to primary arthrodesis (PA) of the medial 3 TMT joints, whereas 24 patients were randomized to temporary bridge plate (BP) over the first TMT joint and primary arthrodesis of the second and third TMT joints. 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 authors noted better alignment of the first metatarsal in the BP group. Overall, favorable outcomes were observed for both treatments.⁶

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Version 2	06/10/2024	422.101 Disclaimer added
Version 3	05/22/2025	Annual Review. References added Harms and Benefits section revised Clarified conservative care language Removed nonindication regarding deformity related to Lisfranc arthritis



Cohere Medicare Advantage Policy – Thermal Ablation of the Intraosseous Basivertebral Nerve (BVN)

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 29, 2024

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Thermal Ablation of the Intraosseous Basivertebral Nerve (BVN)

Date of last literature review: 5/29/2024

Document last updated: 5/29/2024

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Thermal Ablation of the Intraosseous Basivertebral Nerve (BVN)	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	5
Level of Care Criteria	7
Procedure Codes (CPT/HCPCS)	7
Medical Evidence	8
Clinical Guideline Revision History/Information	11

Medical Necessity Criteria

Service: Thermal Ablation of the Intraosseous Basivertebral Nerve (BVN)

Benefit Category

Not applicable.

Recommended Clinical Approach

Thermal ablation of the intraosseous 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 degrees Celsius to produce a lesion to destroy the BVN within the vertebral body. At a minimum, the BVN is ablated in at least one vertebral body.¹

Medical Necessity Criteria

Indications

→ **Thermal ablation of the intraosseous basivertebral nerve (BVN)** is considered appropriate if **ALL** of the following are **TRUE**¹⁻¹¹:

- ◆ Skeletally mature patient (greater than or equal to 18 years old);
AND
- ◆ Chronic lower (lumbar) back pain lasting 6 months or more duration that causes functional deficit measured on pain or disability scale^{1-3,12}; **AND**
- ◆ No significant improvement in pain or disability level due to symptoms, despite receiving documented non-surgical management interventions for more than six (6) weeks, including at least three (3) or more of the following modalities (unless medically contraindicated)^{1,12}:
 - Avoidance of activities that aggravate pain; **OR**
 - Physical therapy or a professionally directed therapeutic exercise program; **OR**

- Chiropractic manipulation; **OR**
- Cognitive therapy; **OR**
- Pharmacotherapy, including narcotic and non-narcotic analgesics, muscle relaxants, neuroleptics, and anti-inflammatories; **OR**
- Injection therapy of epidural or facet joint implicated pain sources in the region of concern; **AND**
- ◆ MRI demonstrates Modic change in one or more vertebrae from L3 to S1, as evidenced by **ANY** of the following¹:
 - 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**
- ◆ Absence of additional vertebral pathology by physical, history, radiologic, or clinical assessment including, but not limited to, fracture, tumor, infection, deformity, trauma, or post-surgical change which could cause the patient's symptoms or complicate the procedure and outcome¹⁻³; **AND**
- ◆ The patient has undergone careful screening, evaluation (including psychological), and diagnosis by multidisciplinary team¹; **AND**
- ◆ Frequency limitations, including **ALL** of the following¹:
 - One intraosseous BVN per vertebral body (from L3 to S1) per lifetime; **AND**
 - Up to 4 vertebral bodies treated during one procedure; **AND**
- ◆ Local anesthesia is considered appropriate for the region treated. Mild sedation may be administered by the performing physician or staff under his direction but should not be coded separately. Additional anesthesia services may not be billed separately without documentation of medical necessity.

Non-Indications

→ **Thermal ablation of the intraosseous basivertebral nerve (BVN)** is not considered appropriate if **ANY** of the following is **TRUE**¹⁻¹¹:

- ◆ 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**
- ◆ Neurogenic claudication, lumbar radiculopathy, radicular pain, nerve impingement or compression (e.g., NHP, stenosis), as primary symptoms; **OR**
- ◆ Previous lumbar or lumbosacral spine surgery at intended treatment level (with the exception of discectomy/laminectomy if performed greater than 6 months prior to 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**
- ◆ Radiographic evidence that correlates with predominant physical complaints, as indicated by **ANY** of the following¹:
 - Lumbar or lumbosacral disc extrusion or protrusion greater than 5 mm at levels L3 to S1; **OR**
 - Lumbar or lumbosacral spondylolisthesis ≥ 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 on imaging (MRI, flexion/extension radiographs, etc.) suggests another obvious etiology for the patient's LBP symptoms, including but not limited to lumbar stenosis, spondylolisthesis, segmental instability, disc herniation, degenerative scoliosis or facet arthropathy or effusion with clinically suspected facet joint pain; **OR**
- ◆ Patient with BMI greater than 40¹; **OR**
- ◆ Advanced generalized systemic disease that limits quality-of-life improvements (without a statement of objective of treatment);
OR

- ◆ Active untreated substance abuse disorder¹; **OR**
- ◆ Implantable pulse generator (e.g., pacemakers, defibrillators) or other electronic implants unless specific precautions are taken to maintain patient safety; **OR**
- ◆ 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 following¹:
 - Clinical assessment; **OR**
 - Imaging study.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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 a randomized control trial (RCT) that received Investigational Device Exemption approval from the United States Food and Drug Administration (FDA). A total of 225 patients with chronic low back pain were included with a mean age of 47 (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 two and six weeks – postoperative evaluation was performed at three, six, and 12 months. Improvement in ODI at three months following surgery was noted in 75.6% of patients compared to sham-treated controls (55.3%).⁵

Fischgrund et al. (2020) report on an RCT of 117 patients who had positive long-term outcomes following basivertebral nerve (BVN) ablation. At five-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 of greater than 50%; 47% report a greater than 75% reduction; and 34% report complete pain resolution.⁷

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.¹³

The International Society for the Advancement of Spine Surgery (ISASS) recommends BVN for the treatment of chronic low back pain based on clinical research and MRI results. Two RCTs indicate a significant improvement in pain and function for at least 24 months. Ablation reduces the need for opioids and is an option for patients who are not responsive to non-surgical treatment.¹²

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.¹⁴

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Clinical Guideline Revision History/Information

Original Date: May 29, 2024		
Review History		



Cohere Medicare Advantage Policy – Thoracolumbar Spinal Fusion with or without Pelvic Fixation

Clinical Policy for Medical Necessity Review

Version: 3

Revision Date: May 29, 2025

Important Notices

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Policy Information:

Specialty Area: Musculoskeletal Care

Policy Name: Cohere Medicare Advantage Policy – Thoracolumbar Spinal Fusion with or without Pelvic Fixation

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

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Thoracolumbar Spinal Fusion with or without Pelvic Fixation	4
Related CMS Documents	4
Description	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	8
Level of Care Criteria	8
Procedure Codes (CPT/HCPCS)	8
Evaluation of Clinical Harms and Benefits	13
Medical Evidence	16
References	17
Clinical Guideline Revision History/Information	22

Medical Necessity Criteria

Service: Thoracolumbar Spinal Fusion with or without Pelvic Fixation

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.^{1,2}

- [Local Coverage Determination \(LCD\). Lumbar Spinal Fusion \(L37848\)](#)
 - [Billing and Coding: Lumbar Spinal Fusion \(A56396\)](#)

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 middle (thoracic) spine. Metal rods, screws, or plates are installed to facilitate fusion of two or more portions 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 any degenerative changes or abnormal disc material may also be excised. Fusion cages or grafts may be used. Spinal fusion provides more rapid relief than non-surgical treatment options, which can prevent further spinal cord dysfunction and neurological deficits, particularly in moderate or severe cases. Similarly, during pelvic fixation, portions of the pelvis are stabilized with screws or rods.³ In all fusion procedures, the bones are “encouraged” to grow together - to fuse - by installing instrumentation, bone-like material, or bone grafts.^{4,5}

Medical Necessity Criteria

Indications

Thoracolumbar spinal fusion with or without pelvic fixation is considered appropriate if **ALL** of the following are **TRUE**¹:

- **ANY** of the following:
 - Current nicotine user with no product use for 6 weeks; and **ANY** of the following⁶⁻⁸:

- 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 indications for lumbar fusion. Note: if more than one level is fused under this indication, the record must reflect that each fused level is affected by one of the below conditions¹:
 - Radiographic or clinical evidence of instability due to **ANY** of the following¹:
 - Congenital deformities; **OR**
 - Trauma; **OR**
 - Fractures; **OR**
 - Tumor; **OR**
 - Infection; **OR**
 - Erosive conditions; **OR**
 - Space-occupying lesions; **OR**
 - Iatrogenic causes, including expected instability as a consequence of another medically necessary spine procedure; **OR**
 - **ALL** of the following¹:
 - **ANY of the following:**
 - Symptomatic spinal deformity (in the absence of instability or neural compression); **OR**
 - Chronic degenerative conditions; **AND**
 - Failure of conservative management for greater than 12 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, 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**
 - The patient has a functional limitation in daily activities due to back pain or discomfort; **AND**
 - Spinal deformity with **ANY** of the following:

- Pelvic incidence – lumbar lordosis (PI-LL) mismatch greater than 10 degrees; **OR**
- Sagittal or coronal imbalance by at least 5 cm as measured on radiographic imaging of the entire spine; **OR**
- Progression of the deformity by at least 10 degrees; **OR**
- Scoliotic curvature of greater than 30 degrees; **OR**
- Hardware failure (broken screw, rod fracture, loose screw, halo signs on pedicle screws, fracture through screw, etc.) necessitating revision surgery^{9,10}; **OR**
- Revision surgery for pseudarthrosis following initial thoracic or lumbar spinal fusion surgery when **ALL** of the following are met¹:
 - The patient experienced reduced pain initially following surgery; **AND**
 - One year has elapsed since the prior surgery; **AND**
 - There is clear radiographic evidence of pseudoarthrosis; **AND**
 - Failure of conservative management for greater than 12 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, 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**
 - There is documentation in the patient's medical record that counseling has been provided that the procedure is being performed as a last resort treatment option, and that the patient agrees to undergo surgery following informed consent; **OR**
- Disc excision for decompression due to symptomatic compression of neural elements with medical record documentation of the neural elements for each level fused¹; **OR**
- The procedure is **lumbar fusion with decompression** and **ALL** of the following is **TRUE**^{4,5,11}:
 - Patient meets medical necessity for lumbar fusion as outlined above; **AND**
 - **ANY** of the following:
 - Imaging findings of symptomatic neural compression; **OR**

- Radiographic findings of moderate or greater foraminal stenosis or multilevel central stenosis supports the need for a decompression that would reasonably be expected to cause iatrogenic instability; **OR**
- A **thoracic spinal fusion** is considered appropriate with **ANY** of the following^{12,13,14}:
 - Trauma/injury/fracture^{15,16,17}; **OR**
 - Tumor^{18,19}; **OR**
 - Thoracic spinal stenosis^{20,21}; **OR**
 - 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; **AND**
 - Failure of conservative management for greater than 6 weeks, 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, including a physician-directed home exercise program; **AND**
 - **ANY** of the following:
 - Corticosteroid injection if medically appropriate; **OR**
 - Documentation that corticosteroid injection is contraindicated; **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**
- **Pelvic fixation** (e.g., attachment of caudal end of instrumentation to pelvic bony structures other than sacrum) for **ANY** of the following^{3,22-24}:

- A long arthrodesis involving five or more vertebral levels or four or more vertebral levels; **OR**
- Three-column osteotomies in the lower thoracic or lumbar spine; **OR**
- Sacral fractures with spinopelvic dissociation; **OR**
- Lumbosacral arthrodesis in the setting of osteoporosis; **OR**
- High-grade spondylolisthesis (grade three or higher according to the Meyerding classification system); **OR**
- Correction of lumbar deformity or pelvic obliquity; **OR**
- A tumor that requires bone removal from the lumbar vertebrae or sacrum.

Non-Indications

Thoracolumbar spinal fusion with or without pelvic fixation may not be considered appropriate if **ANY** of the following is **TRUE**:

- In lumbar stenosis when greater than 50% bilateral facet resection is not required to achieve neurologic decompression²⁵; **OR**
- Isolated facet fusion²⁶; **OR**
- Interspinous fusion (including interspinous fusion devices, such as the Minuteman device).^{27,28}

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 extracavitary technique, including minimal discectomy to prepare interspace (other than for decompression); 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
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, methyl methacrylate) 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

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established," Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.

The potential clinical harms of using these criteria for **thoracolumbar spinal fusion with or without pelvic fixation** may include:

- Adverse effects from delayed or denied treatment in order to comply with the **requirement for current smokers to abstain from nicotine** for at least 6 weeks and provide a urine sample that is negative for cotinine (unless surgery is urgently required for documented reasons). Social determinants of health (SDOH) 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 smoking status/nicotine dependence. These disparities include inequitable access to effective cessation resources, as well as systemic sociodemographic, racial, and ethnic differences that contribute to an individual's ability to achieve and sustain smoking cessation. The American Academy of Orthopaedic Surgeons (AAOS) has issued Information Statement 1047, published in 2016, which states that patients who are active smokers are at increased risk for complications, and that patients may reduce serious surgical risk (including risk of death) through cessation of smoking prior to elective orthopaedic surgery; the AAOS also notes the special role orthopaedic surgeons play in counseling patients on the benefits of reduced or eliminated tobacco use prior to surgery. Importantly, unconfirmed cessation is not endorsed as a hard stop to elective orthopaedic surgery; rather, the surgeon's unique role as an advocate for preoperative smoking cessation is emphasized.⁶⁻⁸
- Adverse effects from delayed (i.e., in order to complete 3 months of conservative treatment) or denied treatment for **lumbar spinal fusion for the treatment of chronic degenerative conditions**, such as persistent

chronic pain and functional disability, potentially resulting in decreased ability to work, exercise, or perform the activities of daily living, as well as risk for opioid dependence. [29-34](#)

- Adverse effects from delayed or denied treatment for **thoracic spinal fusion**, such as progressive spinal deformity leading to chronic back pain, shortness of breath, impaired pulmonary function, reduced exercise tolerance, and nerve compression. These problems may compound or persist if the patient is skeletally immature, potentially resulting in permanent growth asymmetry and lifelong physical and functional differences if not surgically corrected. [35-38](#)
- Adverse effects from delayed or denied treatment for **pelvic fixation**, such as worsening spinopelvic dissociation in the setting of acute trauma, inadequate fixation among patients with multilevel spinal disease, or incomplete treatment of pelvic obliquity. Patients who are inappropriately denied pelvic fixation and receive spinal fixation alone may go on to suffer pseudarthroses, implant fracture, and screw loosening secondary to osteoporosis. [39-41](#)
- Adverse effects from delayed or denied treatment for **lumbar fusion with decompression**, such as worsening neurogenic claudication, chronic back pain, and functional disability, potentially resulting in decreased ability to work, exercise, or perform the activities of daily living, as well as risk for opioid dependence. [42,43](#)

The potential clinical benefits of using these criteria for **thoracolumbar spinal fusion with or without pelvic fixation** may include:

- Improved patient selection, resulting in better long-term outcomes. Ideal surgical candidates are **lifetime nonsmokers, have not smoked for a period of 12 months, or are current smokers who have abstained** from nicotine use for at least 6 weeks prior to surgery and can provide a negative urine test for cotinine (unless surgery is urgently required for documented reasons). According to the American Academy of Orthopaedic Surgeons (AAOS), there are increased patient safety risks conferred by tobacco use, including pneumonia, impeded healing, surgical site infection, postoperative cardiopulmonary events, and death. Among spinal fusion patients, smoking has been associated with an increased overall perioperative complication rate, increased risk of nonunion, and increased postoperative pain and disability. Smoking cessation, conversely, may mitigate these risks. In addition, among spinal

fusion patients, preoperative smoking cessation is associated with lower postoperative pain scores, reduced opioid intake, reduced risk of chronic pain, improved quality of life, and improved patient satisfaction. Smoking status is a profoundly powerful modifiable risk factor for short-term and long-term health.[44,45](#)

- Earlier resolution or improvement of symptoms after conservative care (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) as a prerequisite to **lumbar spinal fusion for the treatment of chronic degenerative conditions**, resulting in reduced healthcare costs, eliminated need for surgical management and the accompanying surgical risks, and reduced patient burden. Nonsurgical management is generally easier to access for patients relative to surgery or other invasive treatments.[29-34](#)
- Improved patient selection for **thoracic fusion**, resulting in better long-term outcomes. Ideal surgical candidates have failed conservative treatment for a period of at least 6 weeks and have severe scoliotic disease such that there is a risk for long-term disfigurement or pulmonary sequelae if the spinal curvature is not surgically corrected.[35-38](#)
- Improved patient selection for **pelvic fixation**, resulting in better long-term outcomes. Ideal surgical candidates have significant disease of the pelvis, including sacral fractures with spinopelvic dissociation, or are undergoing extensive spinal fixation; if the pelvis is inappropriately fixed for a patient with less severe disease that may have been resolved through other less invasive means, the patient may experience lifelong mobility limitations, creating difficulty with certain activities, movements, or exercises.[339-41](#)
- Maintenance of rigorous patient safety standards aligned to best available evidence. Patients with lumbar stenosis who require less than 50% bilateral facet resection to achieve neurologic decompression are not optimal surgical candidates because their disease may be better treated through noninvasive, nonsurgical means. Patients who undergo inappropriate **lumbar spinal fusion** are at risk for surgical site infection, nerve damage, excessive bleeding or clotting, and failed fusion necessitating further surgery. Other complications of inappropriate surgery may include chronic pain, mobility limitations, and nerve pain.[42,43](#)
- Appropriate allocation of healthcare resources at the individual beneficiary and population levels.

Medical Evidence

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 of back pain at 12 months with 81% of patients reporting satisfaction with their surgery. Patients also experienced significant improvements of disability and health-related quality of life.⁴⁶

Jain et al. (2015) published an overview of the indications for adult and pediatric pelvic fixation. 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.³

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 both curves were not definitively corrected – as is the traditional dogma – clinical improvements were found 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 the clinical benefit of selective fusion of “double curve” patients, contradicting the previous thought pattern that both curves must be definitively fused.⁴⁷

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Clinical Guideline Revision History/Information

Original Date: May 22, 2024		
Review History		
Version 2	6/10/2024	422.101 Disclaimer added
Version 2.1	3/20/2025	Updated policy per CMS revisions for 9/12/2024 • Updated Effective date • Updated Links and Bookmarks
Version 3	5/29/2025	Annual policy review & restructuring. Updated literature, medical evidence (including references) Thoracic spinal fusion criteria added – previously missing Added nicotine abstinence requirement across policy Policy title changed from ‘Lumbar Spinal Fusion’ to ‘Thoracolumbar Spinal Fusion with or without Pelvic Fixation’ Added conservative care requirement for chronic degenerative conditions Removed redundant indication for revision/repeat surgery Added non-indications for interspinous fusion, facet fusion. Added thoracic fusion indications: trauma, fracture, tumor, spinal stenosis, injury.

		Added indication for revision surgery due to hardware failure (broken screw, rod fracture, loose screw, halo signs on pedicle screws, fracture through screw, etc.)



Cohere Medicare Advantage Policy – Total Disc Arthroplasty

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 31, 2024

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy – Total Disc Arthroplasty

Date of last literature review: 5/29/2024

Document last updated: 5/31/2024

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Total Disc Arthroplasty	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	5
Level of Care Criteria	6
Procedure Codes (CPT/HCPCS)	7
Medical Evidence	9
References	10
Clinical Guideline Revision History/Information	11

Medical Necessity Criteria

Service: Total Disc Arthroplasty

Benefit Category

Inpatient Hospital Services
Physicians' Services

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.¹

Recommended Clinical Approach

Developed as an alternative to spinal fusion surgery, spinal disc arthroplasty has emerged to treat degenerative disease.² 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.³ There are a number of FDA-approved artificial disc replacement devices currently available.

Medical Necessity Criteria

Indications

→ **Total disc arthroplasty** is considered appropriate if **ANY** of the following is **TRUE**⁴⁻⁶:

- ◆ The procedure is a **cervical total disc arthroplasty** with an FDA-approved artificial disc and **ANY** of the following are **TRUE**³:
 - The procedure is a single-level procedure, and **ALL** of the following are **TRUE**:
 - **ANY** of the following:
 - ◆ Symptomatic cervical degenerative disc disease (C3 to C7); **OR**
 - ◆ Herniated cervical disc at a single level; **AND**
 - The patient is skeletally mature; **AND**
 - **ANY** of the following:
 - ◆ Intractable cervical radicular pain or myelopathy with failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids)

which must be documented for a period of greater than 6 weeks. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **OR**

- ◆ The patient has severe or rapidly progressive symptoms of nerve root or spinal cord compression requiring hospitalization or immediate surgical intervention; **AND**

- The patient must have clinical evidence of corresponding nerve root or spinal cord compression documented by computed tomography (CT), myelography, or magnetic resonance imaging (MRI)⁵; **OR**

- The procedure is a two-level procedure, and **ALL** of the following are **TRUE**:
 - **ALL** criteria listed above for single-level procedure have been met; **AND**
 - There is objective clinical evidence of radiculopathy, myelopathy, or spinal cord compression at 2 corresponding contiguous levels; **AND**
 - The cervical disc replacement device utilized has been FDA-approved for 2 levels; **OR**

- ◆ The procedure is a **lumbar total disc arthroplasty** with an FDA-approved artificial disc and **ALL** of the following are **TRUE**^{1,5-8}:

- Patient is less than 60 years of age; **AND**
- Symptomatic degenerative disc disease 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 (1-25% disc slippage); **AND**
- Spinal levels L4-L5 or L5-S1 only; **AND**
- No more than one (1) level discectomy; **AND**
- Anterior retroperitoneal approach; **AND**
- Documented skeletal maturity (age greater than 18); **AND**
- **EITHER** of the following:
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of

greater than six weeks. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **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

→ **Total disc arthroplasty** is not considered appropriate if **ANY** of the following is **TRUE**³⁻⁸:

◆ **ANY** of the following absolute contraindications⁴:

- Extreme obesity (BMI greater than 40 kg/m²); **OR**
- Significant cervical anatomical deformity; **OR**
- Allergy or sensitivity to implant materials (cobalt, chromium, molybdenum, polyethylene, titanium); **OR**
- Active systemic infection or infection at the operating site; **OR**
- Osteoporosis or osteopenia; **OR**
- Marked cervical instability on resting lateral or flexion/extension radiographs demonstrated by translation greater than 3.5 mm, and/or greater than 11° angular difference to that of either level adjacent to the treated level; **OR**
- Severe spondylosis; **OR**
- Clinically compromised vertebral bodies at affected level; **OR**

◆ **ANY** of the following investigational indications and conditions including⁴:

- Lumbar level disc replacement for adult patients greater than 60 years of age¹⁷; **OR**
- Disc replacement at 2 non-contiguous levels or 3 or more levels; **OR**
- Prior surgery at the treated level; **OR**
- Previous fusion at another level; **OR**
- Any anatomical deformity (e.g., ankylosing spondylitis, trauma); **OR**
- Any autoimmune disease or rheumatoid arthritis; **OR**
- Moderate to severe facet joint arthropathy at the involved level; **OR**

- Metabolic bone disease (e.g., osteoporosis, Paget's disease, osteomalacia, osteogenesis imperfecta) or use of medications known to potentially interfere with bone/soft tissue healing (e.g., steroids); **OR**
- Malignancy; **OR**
- Chronic renal failure.

NOTE: Services will be deemed medically reasonable and necessary only when conducted by appropriately trained and licensed providers.

All Cervical Disc Replacement (CDR) procedures must be performed by a qualified physician, defined as follows:

1. The physician must have received training and acquired expertise within an accredited residency or fellowship program in the relevant specialty or subspecialty (e.g., neurosurgery, orthopedic spine), or possess equivalent education, training, and expertise endorsed by an academic institution or recognized specialty/subspecialty society.
2. The physician must demonstrate proficiency in the performance and management of Cervical Disc Replacement (CDR) and Cervical Disc Degenerative Disease (CDDD) procedures.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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)
0163T	Total disc arthroplasty (artificial disc), anterior

	approach, including discectomy to prepare interspace (other than for decompression), each additional interspace, lumbar (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)
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

The United States Food and Drug Administration (FDA) has granted approval for the following artificial intervertebral disc to be used for cervical arthroplasty:

- 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.⁶

The North American Spine Society (NASS) has published the following related Coverage Policy Recommendation:

- Cervical Artificial Disc Replacement (2015), indicated two-level cervical disc replacement for radiculopathy related to nerve root compression in C3–4 to C6–7. The procedure is also recommended for myelopathy or myeloradiculopathy related to central spinal stenosis from one or two-level degenerative disease in C3–4 to C6–7.⁵

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 have been shown to be safe and effective with improved segmental motion.²

Gupta et al. (2020) discuss the effectiveness of artificial disc replacement which serves to stabilize as well as preserve segmental spinal motion. The anterior approach is most commonly used.³

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Cohere Medicare Advantage Policy – Vertebral Body Tethering

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: May 29, 2024

Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Vertebral Body Tethering

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

Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Vertebral Body Tethering	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	4
Level of Care Criteria	4
Procedure Codes (CPT/HCPCS)	5
Medical Evidence	6
References	7
Clinical Guideline Revision History/Information	8

Medical Necessity Criteria

Service: Vertebral Body Tethering

Benefit Category

Not applicable.

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 purporting to straighten the spine. The procedure requires only small incisions, and devices are available for pediatric and adult patients.¹⁻⁴

Medical Necessity Criteria

Indications

- **Vertebral body tethering** is considered appropriate if **ALL** of the following are **TRUE**:
- ◆ This procedure is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness in scoliosis.

Non-Indications

- **Vertebral body tethering** is not considered appropriate if **ALL** of the following are **TRUE**:
- ◆ This procedure is clinically unproven and not medically necessary. There is inconclusive evidence of its effectiveness in scoliosis.

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

The United States Food and Drug Administration has granted approval to the Tether Vertebral Body Tethering System, for skeletally immature patients with progressive idiopathic scoliosis, after failing or not tolerating brace wear (2023).¹

In 2016, the International Society for the Advancement of Spine Surgery (ISASS) did not recommend decompression with interlaminar stabilization in patients with degenerative lumbar scoliosis (Cobb angle greater than 25° lumbar segmental.)³

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Cohere Medicare Advantage Policy – Vertebral Corpectomy

Clinical Guidelines for Medical Necessity Review

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

Guideline Name: Cohere Medicare Advantage Policy - Vertebral Corpectomy

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Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service: Vertebral Corpectomy	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	7
Level of Care Criteria	7
Procedure Codes (CPT/HCPCS)	7
Medical Evidence	11
References	13
Clinical Guideline Revision History/Information	15

Medical Necessity Criteria

Service: Vertebral Corpectomy

Benefit Category

Not applicable.

Recommended Clinical Approach

Corpectomy involves surgical removal of the central portion of a vertebral body and replacement with graft material.¹ Single or multi-level disc disease may be treated via an anterior approach (with fusion) as well as improvement of symptoms related to short-segment ossification of the posterior longitudinal ligament.²⁻³ Other approaches (posterior, lateral, oblique) may be chosen based on the location of compression or if a contraindication to the anterior approach exists.⁴ 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

→ **Full/partial vertebral corpectomy** is considered appropriate when **ANY** of the following is **TRUE**:

- ◆ The procedure is necessary as part of treatment for cervical spine injury or trauma as indicated by **ALL** of the following⁵:
 - Symptomatic acute cervical myelopathy or radiculopathy;
AND
 - Neuroimaging (e.g., MRI) findings correlate to symptoms⁶;
OR
- ◆ The procedure is a **full/partial cervical corpectomy** and **ALL** of the following are **TRUE**⁷:
 - **ANY** of the following radiographic findings on advanced imaging (MRI or CT myelogram) is **TRUE**⁸:
 - Existence of ossified posterior longitudinal ligament;
OR
 - The patient has an unstable cervical burst fracture;
OR

- Cervical vertebral osteomyelitis that has not responded to nonoperative management (intravenous and oral antimicrobial therapy); **OR**
- Cervical vertebral body tumor; **OR**
- Correction of cervical kyphosis; **OR**
- Failure of previous cervical surgery such as disc replacement; **OR**
- Cervical vertebral fracture related to previous surgery; **AND**
- **ANY** of the following is **TRUE**:
 - The patient has **cervical myelopathy** and **ANY** of the following is **TRUE**^{3,8}:
 - ◆ **ANY** of the following **cervical myelopathy** 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**
 - ◆ MRI or other neuroimaging reveals spinal cord compression related to cervical spondylosis that correlates with clinical presentation; **OR**
 - ◆ **ANY** of the following **cervical myelopathy** physical examination 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**
 - **ANY** of the following upper lower motor neuron (ULMN) findings in the upper extremities:
 - Weakness; **OR**
 - Atrophy; **OR**
 - ◆ **ANY** of the following upper lower motor neuron (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** and **ALL** of the following are **TRUE**:
 - ◆ **ANY** of the following **cervical 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; **OR**
 - ◆ **ANY** of the following **cervical 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); **AND**
 - ◆ **ANY** of the following is **TRUE**:
 - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 6 weeks. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement⁹; **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 procedure is a **full/partial thoracic corpectomy** and **ANY** of the following radiographic findings on advanced imaging (MRI or CT myelogram) **TRUE**:
 - Trauma (vertebral fractures) in the thoracic region; **OR**
 - Tumors present in the thoracic region; **OR**

- ◆ The procedure is a **full/partial lumbar corpectomy** and **ALL** of the following are **TRUE**:
 - **ANY** of the following seen on advanced imaging (MRI or CT myelogram)¹⁰:
 - The patient has an unstable lumbar burst fracture; **OR**
 - Lumbar vertebral osteomyelitis that has not responded to nonoperative management (intravenous and oral antimicrobial therapy); **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

→ **Full/partial vertebral corpectomy** is not considered appropriate if **ANY** of the following is **TRUE**:

- ◆ The procedure is for a cervical vertebral corpectomy, and the patient has had previous radiation treatment to the anterior neck; **OR**
- ◆ The procedure is for a cervical vertebral corpectomy, and the patient has had previous multiple anterior neck surgeries.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
22100	Partial excision of posterior vertebral component (eg, spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; cervical
22101	Partial excision of posterior vertebral component (eg, spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; thoracic
22102	Partial excision of posterior vertebral component (eg, spinous process, lamina or facet) for intrinsic bony lesion, single vertebral segment; lumbar
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)
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) (eg, 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) (eg, 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) (eg, 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

The North American Spine Society (NASS) has recently published the following Coverage Recommendations:

- *Cervical Fusion* (Kreiner et al., 2023): Anterior cervical corpectomy is recommended in cervical myelopathy; however, they state that instability frequently results from the procedure.¹¹
- *Lumbar Fusion* (Kreiner et al., 2021): Discusses predominantly lumbar fusion, with mentions of lumbar corpectomy in addition to discectomy as a cause of postoperative spinal instability.¹²

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.⁹
- Hutchins et al. (2021) published *Low Back Pain ACR Appropriateness Criteria* which recommends non-contrast 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, non-contrast MRI or CT is recommended as Usually Appropriate.¹⁰

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.³

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.⁴

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 require posterior fixation.⁵

In a 2022 systematic review, Piche et al. discuss large-scale open procedures in the past in contrast to current less invasive mini-open procedures, often avoiding complications such as vascular injury, bowel and urogenital injury, nerve injury, etc. The authors of the report state that their preference is the transpsoas method in order to improve visualization during the corpectomy procedure.¹³

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Cohere Medicare Advantage Policy – Xenograft Implantation

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Important Notices

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Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System

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Table of Contents

Important Notices	2
Table of Contents	3
Medical Necessity Criteria	4
Service:	4
Benefit Category	4
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	4
Level of Care Criteria	4
Procedure Codes (CPT/HCPCS)	5
Medical Evidence	6
References	7
Clinical Guideline Revision History/Information	8

Medical Necessity Criteria

Service: Xenograft Implantation

Benefit Category

Not applicable.

Recommended Clinical Approach

Xenograft implantation has been proposed as a type of bone, cartilage, or soft-tissue graft used to replace natural existing tissue damaged by trauma or disease.¹ While there are several different types of bone grafts currently in use or under study, the xenograft is a category that is obtained from a non-human animal or plant species.²

Medical Necessity Criteria

Indications

→ **Xenograft implantation** is considered appropriate if **ALL** of the following are **TRUE**³⁻⁴:

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

Non-Indications

→ **Xenograft implantation** is not considered appropriate if **ALL** of the following are **TRUE**:

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

Level of Care Criteria

None

Procedure Codes (CPT/HCPCS)

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

Medical Evidence

Moyad et al. (2011) reviewed the literature regarding cartilage injuries in the adult knee and the workup and management techniques in current use. In the past, 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.⁵

Anderson et al. (2022) reviewed studies related to NeoCart, a third-generation autologous chondrocyte (ACI) therapeutic. Phased clinical trials began in 2003, and it was 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.¹

Sutherland et al. (2015) examined the use of cartilage matrix including its promise as a biomaterial for enhanced cartilage regeneration. Such materials provide for enhanced cartilage regeneration due to ability to provide stem cells with physical attachment sites, as well as mechanical and chemical signals.²

References

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Clinical Guideline Revision History/Information

Original Date: May 27, 2024		
Review History		

Cohere Medicare Advantage Policy – Spinal Cord Stimulators

Clinical Policy for Medical Necessity Review

CHP-072-2 Version 2

Cohere UMC Approval Date: April 9, 2026

Last Annual Review: April 9, 2026

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Next Annual Review: April 9, 2027

Specialty: Musculoskeletal Care

Population Type: Adult (18+ years old), Pediatric (0-17 years old)

Table of contents

Procedure Codes (CPT/HCPCS)	3
Important Notices	5
Service: Spinal Cord Stimulators - Description	6
Service: Spinal Cord Stimulators - Medical Necessity Criteria	7
Service: Replacement of a Spinal Cord Stimulator (SCS) or Dorsal Root Ganglion (DRG) Stimulator - Medical Necessity Criteria	12
Service: Revision or Removal of a Spinal Cord Stimulator (SCS) or Dorsal Root Ganglion (DRG) Stimulator - Medical Necessity Criteria	15
Harms and Benefits	18
Medical Evidence	19
References	20
Policy Revision History/Information	22

Procedure Codes (CPT/HCPCS)

Service: Spinal Cord Stimulators

Code	Description
63650	Percutaneous implantation of neurostimulator electrode array, epidural
63655	Laminectomy for implantation of neurostimulator electrodes, plate/paddle, epidural
63685	Insertion or replacement of spinal neurostimulator pulse generator or receiver, requiring pocket creation and connection between electrode array and pulse generator or receiver
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

Service: Replacement of a Spinal Cord Stimulator (SCS) or Dorsal Root Ganglion (DRG) Stimulator

Code	Description
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

Service: Revision or Removal of a Spinal Cord Stimulator (SCS) or Dorsal Root Ganglion (DRG) Stimulator

Code	Description
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
63688	Revision or removal of implanted spinal neurostimulator pulse generator or receiver, with detachable connection to electrode array

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: Spinal Cord Stimulators - Description

A spinal cord stimulator (SCS) is an implantable device that delivers electrical impulses to the spinal cord to alleviate chronic pain. Before a permanent SCS placement, a trial is conducted to assess if the patient will respond adequately to the SCS.^{6,7} 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 patients with complex regional pain syndrome (CRPS) types I and II.⁸⁻¹² The SCS criteria in this policy apply to DRG stimulators as well, with the exception that DRG is only approvable for patients with complex regional pain syndrome (CRPS) types I and II in the lower extremity.

Service: Spinal Cord Stimulators - Medical Necessity Criteria

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Cohere defines CMS coverage criteria as follows¹:

- Fully established: Applicable LCD or NCD is comprehensive and does not require additional criteria to determine medical necessity consistently.
- Not fully established: Additional, unspecified criteria are needed to interpret or supplement general provisions to determine medical necessity consistently. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.

For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Spinal Cord Stimulators* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 - Related CMS Policies (NCDs or LCDs)²⁻⁵

Type	Title	Number	Cohere Definition of CMS Policy Establishment	Indications not fully established by CMS policy (refer to Cohere Health MA medical necessity criteria for these topics):
NCD	Electrical Nerve Stimulators	160.7	Not fully established	- Definition of late or last resort - Definition of chronic intractable pain - Dorsal root ganglion stimulator - Duration and types of conservative therapy - Criteria for lead and battery revision - Spinal cord stimulator trial duration and percentage of relief
NCD	Assessing Patient's Suitability for Electrical Nerve Stimulation Therapy	160.7.1	Not fully established	- Services beyond transcutaneous electrical nerve stimulation (TENS) and percutaneous electrical nerve stimulation (PENS) - Spinal cord stimulator or dorsal root ganglion stimulator
LCD	Spinal Cord Stimulators for Chronic Pain	L35136	Not fully established	- Definition of late or last resort - Definition of chronic intractable pain - Dorsal root ganglion stimulator - Duration and types of conservative therapy - Criteria for lead and battery revision

LCD	Spinal Cord Stimulators for Chronic Pain	L37632	Not fully established	- Definition of late or last resort - Definition of chronic intractable pain - Dorsal root ganglion stimulator - Duration and types of conservative therapy - Criteria for lead and battery revision
LCD	No LCD	N/A	N/A	Use NCD 160.7 and 160.7.1 and Cohere Medicare Advantage internal coverage criteria

Indications:

- A **spinal cord stimulator (SCS)** is considered appropriate if **ANY** of the following is **TRUE**:
 - A **trial implantation** when **ALL** of the following are **TRUE**²⁻⁵:
 - Pain has been present for 6 months or more; **AND**
 - Moderate to severe intractable pain greater than or equal to 4 out of 10 as measured on a pain scale (e.g. Numeric Rating Scale or Visual Analog Scale); **AND**
 - Pain-focused psychological evaluation and clearance performed within the last 12 months to determine if the patient is a suitable candidate for an SCS or dorsal root ganglion (DRG) stimulator; **AND**
 - The patient has **ANY** of the following conditions:
 - Complex regional pain syndrome (CRPS) as diagnosed by **ALL** of the following, as per Budapest criteria^{8,9}:
 - ▲ Ongoing pain, disproportionate to any inciting event; **AND**
 - ▲ A symptom in **AT LEAST THREE** of the following categories:
 - △ Motor/trophic: Decreased range of motion and/or motor dysfunction and/or trophic changes; **OR**
 - △ Sensory: Hyperesthesia and/or allodynia; **OR**
 - △ Sudomotor/edema: Edema and/or sweating changes and/or sweating asymmetry; **OR**
 - △ Vasomotor: Temperature asymmetry and/or skin color changes and/or skin color asymmetry; **AND**
 - ▲ A clinical sign in **AT LEAST TWO** of the following categories at the time of evaluation:
 - △ Motor/trophic: Decreased range of motion and/or motor dysfunction and/or trophic changes; **OR**
 - △ Sensory: Hyperesthesia and/or allodynia; **OR**
 - △ Sudomotor/edema: Edema and/or sweating changes and/or sweating asymmetry; **OR**
 - △ Vasomotor: Temperature asymmetry and/or skin color changes and/or skin color asymmetry; **AND**
 - ▲ Failure of conservative management^A 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 contraindicated¹¹; **AND**
 - △ **ANY** of the following:
 - ◆ Progression or worsening of symptoms due to physical therapy (PT)/home exercise prescription/plan(HEP) treatment; **OR**

- ◆ **ALL** of the following:
 - ◇ PT and/or documentation of patient compliance with a 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 12 months; **AND**
- △ Failure of adequate relief with interventional pain procedure (e.g., sympathetic nerve block); **OR**
- Failed back surgery syndrome (FBSS) and **ALL** of the following^{10,12,13}:
 - ▲ Failure of conservative management^A 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 contraindicated¹¹; **AND**
 - △ **ANY** of the following:
 - ◆ Progression or worsening of symptoms due to PT/HEP treatment; **OR**
 - ◆ **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 12 months; **AND**
 - △ Failure of adequate relief with interventional pain procedure (e.g., epidural steroid injection, facet joint procedures, etc.); **AND**
 - △ Spine surgeon evaluation within the last 12 months attesting that the patient is not a candidate for further surgical intervention¹⁴; **OR**
- Painful diabetic neuropathy (PDN) in a lower extremity and **ALL** of the following¹⁴⁻¹⁶:
 - ▲ Failed trial of at least two neuropathic medications (e.g., gabapentin, pregabalin, duloxetine, amitriptyline, nortriptyline, etc.), if not contraindicated¹¹; **AND**
 - ▲ Documentation within the last 6 months, from a primary care physician or endocrinologist, that states 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 3 months¹⁷⁻¹⁹; **OR**
- Non-surgical low back pain, with **ALL** of the following²⁰:
 - ▲ Predominantly radicular pain in lower extremities; **AND**
 - ▲ Failure of conservative management^A 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 contraindicated¹¹; **AND**
 - △ **ANY** of the following:
 - ◆ Progression or worsening of symptoms due to PT/HEP treatment; **OR**
 - ◆ **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 12 months; **AND**
 - △ Failure of adequate relief with interventional pain procedure (e.g., epidural steroid injection, facet joint procedures, etc.); **AND**
 - △ Spine surgeon evaluation within the last 12 months attesting that the patient is not a candidate for surgical intervention³¹; **OR**

- ☐ Inoperable chronic ischemic limb pain with failure of conservative management^A, including **ALL** of the following^{21,22}:
 - ▲ Anti-inflammatory medications, non-opioid analgesics, neuropathic medications, or other pain medications, if not contraindicated; **AND**
 - ▲ Vascular surgeon evaluation within the last 12 months attesting that the patient is not a candidate for surgical intervention; **AND**
 - ▲ Failure of adequate relief with interventional pain procedure(e.g., sympathetic nerve block); **OR**
- A **permanent implantation** is appropriate if the patient has had a successful trial, as indicated by **ALL** of the following²³:
 - Criteria of the trial was met; **AND**
 - Temporary trial of at least 3 days has been completed; **AND**
 - Temporary trial was completed within the last 12 months; **AND**
 - Demonstration of at least a 50% reduction in pain during the temporary trial; **AND**
 - Documented improvement in **ANY** of the following during the temporary trial:
 - ☐ Ability to perform daily activities; **OR**
 - ☐ Quality of life; **OR**
 - ☐ Functional disability scale; **OR**
 - ☐ Mobility; **OR**
 - ☐ Function.

Non-Indications:

- A **spinal cord stimulator (SCS) or dorsal root ganglion (DRG) stimulator** is not considered appropriate if **ANY** of the following is **TRUE**²³:
 - More than two SCS trials per anatomic spinal region per patient per lifetime^{4,6}; **OR**
 - A repeat trial after initial trial failure, unless extenuating circumstances were present that contributed to trial failure^{4,6}; **OR**
 - DRG or SCS trial in a patient with an existing SCS or DRG stimulator; **OR**
 - More than two percutaneous leads, or one paddle lead for a dorsal column stimulator⁴; **OR**
 - More than four leads for dorsal ganglion stimulator; **OR**
 - Replacement or upgrade when **ANY** of the following is **TRUE**:
 - No documented medical necessity for upgrade to magnetic resonance imaging (MRI) compatible SCS device; **OR**
 - SCS is functioning, and newer technology is requested (including but not limited to BurstDR, high-frequency SCS, closed-loop SCS, etc.); **OR**
 - Lead and electrode replacement, as both are not generally required at the time of a generator replacement due to the end of battery life; **OR**
 - Trials or implants performed by non-physicians; **OR**
 - SCS for all conditions except the indications covered in this policy (complex regional pain syndrome, failed back surgery syndrome, painful diabetic neuropathy, non-surgical low back pain, inoperable chronic ischemic limb pain); **OR**
 - DRG stimulation for all conditions except complex regional pain syndrome types I and II in the lower extremity.^{28,29}

Definitions and Notes

^AFailure 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: Replacement of a Spinal Cord Stimulator (SCS) or Dorsal Root Ganglion (DRG) Stimulator - Medical Necessity Criteria

Related Centers for Medicare & Medicaid Services (CMS) Documents

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NCD	Assessing Patient's Suitability for Electrical Nerve Stimulation Therapy	160.7.1	Not fully established	- Services beyond transcutaneous electrical nerve stimulation (TENS) and percutaneous electrical nerve stimulation (PENS) - Spinal cord stimulator or dorsal root ganglion stimulator

LCD	Spinal Cord Stimulators for Chronic Pain	L35136	Not fully established	- Definition of late or last resort - Definition of chronic intractable pain - Dorsal root ganglion stimulator - Duration and types of conservative therapy - Criteria for lead and battery revision
LCD	Spinal Cord Stimulators for Chronic Pain	L37632	Not fully established	- Definition of late or last resort - Definition of chronic intractable pain - Dorsal root ganglion stimulator - Duration and types of conservative therapy - Criteria for lead and battery revision
LCD	No LCD	N/A	N/A	Use NCD 160.7 and 160.7.1 and Cohere Medicare Advantage internal coverage criteria

Indications:

- **Replacement** of a spinal cord stimulator (SCS) or dorsal root ganglion (DRG) stimulator is considered appropriate if **ANY** of the following is **TRUE**²⁴⁻²⁷:
 - An irreparable change in the condition of the device, or in a part of the device; **OR**
 - Infection or wound complication surrounding SCS device; **OR**
 - Lead displacement or fracture; **OR**
 - SCS/DRG battery malfunction or depletion; **OR**
 - A magnetic resonance imaging (MRI)-compatible device is needed due to **ALL** of the following:
 - The patient has a non-MRI compatible device; **AND**
 - An MRI is required for concerns of disorders that cannot be properly evaluated by non-MRI imaging modalities; **AND**
 - Attestation by a physician to the medical necessity of an MRI scan.

Non-Indications:

- A **spinal cord stimulator (SCS) or dorsal root ganglion (DRG) stimulator** is not considered appropriate if **ANY** of the following is **TRUE**²³:
 - More than two SCS trials per anatomic spinal region per patient per lifetime^{4,6}; **OR**
 - A repeat trial after initial trial failure, unless extenuating circumstances were present that contributed to trial failure^{4,6}; **OR**
 - DRG or SCS trial in a patient with an existing SCS or DRG stimulator; **OR**
 - More than two percutaneous leads, or one paddle lead for a dorsal column stimulator⁴; **OR**
 - More than four leads for dorsal ganglion stimulator; **OR**
 - Replacement or upgrade when **ANY** of the following is **TRUE**:
 - No documented medical necessity for upgrade to magnetic resonance imaging (MRI) compatible SCS device; **OR**
 - SCS is functioning, and newer technology is requested (including but not limited to BurstDR, high-frequency SCS, closed-loop SCS, etc.); **OR**

- Lead and electrode replacement, as both are not generally required at the time of a generator replacement due to the end of battery life; **OR**
- Trials or implants performed by non-physicians; **OR**
- SCS for all conditions except the indications covered in this policy (complex regional pain syndrome, failed back surgery syndrome, painful diabetic neuropathy, non-surgical low back pain, inoperable chronic ischemic limb pain); **OR**
- DRG stimulation for all conditions except complex regional pain syndrome types I and II in the lower extremity.^{28,29}

Service: Revision or Removal of a Spinal Cord Stimulator (SCS) or Dorsal Root Ganglion (DRG) Stimulator - Medical Necessity Criteria

Related Centers for Medicare & Medicaid Services (CMS) Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

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For each jurisdiction, Cohere's internal coverage criteria will only be applied when CMS guidance is not fully established and additional guidelines are needed to support consistent and appropriate decision-making.

Cohere Health's position on NCDs or LCDs related to *Cohere Medicare Advantage Policy - Spinal Cord Stimulators* is reflected in Table 1 below. For the LCDs that are not fully established, please refer to the far right column as a guide for the application of Cohere Medicare Advantage criteria.

Table 1 - Related CMS Policies (NCDs or LCDs)²⁻⁵

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LCD	Spinal Cord Stimulators for Chronic Pain	L35136	Not fully established	- Definition of late or last resort - Definition of chronic intractable pain - Dorsal root ganglion stimulator - Duration and types of conservative therapy - Criteria for lead and battery revision
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LCD	No LCD	N/A	N/A	Use NCD 160.7 and 160.7.1 and Cohere Medicare Advantage internal coverage criteria

Indications:

- **Revision or removal** of a spinal cord stimulator (SCS) or dorsal root ganglion (DRG) stimulator is considered appropriate if **ANY** of the following is **TRUE**²⁴⁻²⁷:
 - An irreparable change in the condition of the device, or in a part of the device; **OR**
 - Change in the physiological condition of the individual; **OR**
 - Hardware-related pain; **OR**
 - Inadequate pain relief; **OR**
 - Infection or wound complication surrounding SCS device; **OR**
 - Lead displacement or fracture; **OR**
 - Loss of efficacy; **OR**
 - Patient intolerance to paresthesia.

Non-Indications:

- A **spinal cord stimulator (SCS) or dorsal root ganglion (DRG) stimulator** is not considered appropriate if **ANY** of the following is **TRUE**²³:
 - More than two SCS trials per anatomic spinal region per patient per lifetime^{4,6}; **OR**
 - A repeat trial after initial trial failure, unless extenuating circumstances were present that contributed to trial failure^{4,6}; **OR**
 - DRG or SCS trial in a patient with an existing SCS or DRG stimulator; **OR**
 - More than two percutaneous leads, or one paddle lead for a dorsal column stimulator⁴; **OR**
 - More than four leads for dorsal ganglion stimulator; **OR**
 - Replacement or upgrade when **ANY** of the following is **TRUE**:
 - No documented medical necessity for upgrade to magnetic resonance imaging (MRI) compatible SCS device; **OR**
 - SCS is functioning, and newer technology is requested (including but not limited to BurstDR, high-frequency SCS, closed-loop SCS, etc.); **OR**

- Lead and electrode replacement, as both are not generally required at the time of a generator replacement due to the end of battery life; **OR**
- Trials or implants performed by non-physicians; **OR**
- SCS for all conditions except the indications covered in this policy (complex regional pain syndrome, failed back surgery syndrome, painful diabetic neuropathy, non-surgical low back pain, inoperable chronic ischemic limb pain); **OR**
- DRG stimulation for all conditions except complex regional pain syndrome types I and II in the lower extremity.^{28,29}

Harms and Benefits

Cohere Health Medicare Advantage determinations are made in accordance with CMS's decisioning requirements outlined in 42 CFR 422.101. When CMS guidelines are not fully established, Cohere Health develops publicly accessible medical necessity criteria based on widely accepted medical society guidelines and/or robust clinical literature. The additional Cohere criteria will provide clinical benefits that are highly likely to outweigh any clinical harms, including from delayed or decreased access to items or services.¹

The potential clinical harms of using these criteria for spinal cord stimulators may include:

- Surgical complications, including needle puncture leading to nerve injury, lead/sheath trauma, dural puncture/cerebrospinal fluid leak, lead migration, lead fracture, lead retention upon removal/revision, pocket pain, and hematoma. Several of these risks are potentially avoidable with imaging, careful surgical technique, appropriate patient selection, and patient communication.^{30,31}
- Postsurgical device-related complications can include lead migration, erosion, lead and sheath fracture, or other damage, connection failure, and hardware malfunction.^{31,32}
- Other complications can include neurological symptoms such as nerve damage, numbness, paraesthesias, weakness, pain, dural puncture, infection, epidural hematoma, inappropriate stimulation, overstimulation, and headache.^{30,32-34}
- Potential delays or denials leading to worse patient outcomes, including increased use of medications, including opioids and other medications with abuse potential, worsening quality of life, reduced mobility, ongoing and worsening pain, ongoing and worsening muscle atrophy, and delays in physical rehabilitation.^{6,34}
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria for spinal cord stimulators may include:

- Improved patient outcomes through timely and appropriate access to spinal cord stimulation. SCS has been shown to alleviate chronic intractable pain due to several conditions, e.g., failed back surgery syndrome, complex regional pain syndrome, diabetic peripheral neuropathy.^{6,35} A 2007 clinical trial comparing medical management of pain due to failed back surgery syndrome and medical management with SCS (PROCESS trial) reported that while only 7% of the medical management patients reported 50% or greater improved pain, 34% of SCS patients reported pain improvement. SCS patients also reported greater quality of life, functional capacity, and treatment satisfaction.³⁶
- Reduction or complete elimination of opioid and other potentially dependence-inducing pharmacological treatment use and avoidance of medication-related adverse effects, including disrupted hormonal and immune system functioning, depression, tolerance, and opioid-induced hyperalgesia.^{6,36}
- Avoidance of repeated surgeries. In a study comparing outcomes in failed back surgery syndrome patients randomized to either SCS or repeated lumbosacral spine surgery, SCS patients were more satisfied than repeat-surgery patients at three-year followup.¹⁴
- Improved pain can decrease the overall long-term cost of care, improve overall quality of life, and increase the likelihood of returning to work.^{6,34}
- Appropriate patient selection in SCS trials can avoid unnecessary and ineffective invasive surgical procedures.^{6,34}
- Enhanced overall patient satisfaction and healthcare experience.

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 has 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.³⁸

Kapur et al. (2023) conducted a prospective, multicenter, randomized, single-masked feasibility study to evaluate the safety and efficacy of a novel charge-distributed multiphase stimulation approach during an extended SCS trial. 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. The authors concluded that 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.³⁹

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 was an 8-to-10-year follow-up of a previous SCS for PDPN trial that focused on a subgroup of 19 patients who continued SCS treatment after 8 years. The study found 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 authors concluded that SCS could remain an effective long-term treatment for reducing pain intensity in some patients with PDPN who still have the device implanted after 8 years.⁴⁰

In their systematic review and meta-analysis of implanted neuromodulation interventions, which included 908 randomized participants across 35 published or ongoing studies, O'Connell et al. (2022) found that patients treated with SCS experienced less pain and a higher quality of life 1-6 months after treatment, compared to patients who received only medical management or physical therapy. However, according to the authors, there was little evidence to suggest that SCS could reduce disability, medication use, or pain in the medium to long-term. Nor was it clear that SCS was cost-effective. The authors also noted that possible complications of SCS implantation included lead displacement or fracture, wound infection, and the need for surgical revision or replacement.⁴¹

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.⁴²

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Policy Revision History/Information

Clinical Policy Version	Date	Review History
Version 1	04/10/2025	Original Date.
Version 2	04/09/2026	Annual Review. Updated template, including addition of "Table 1 - Related CMS Policies" that describes Cohere definition of which LCDs/NCDs are not fully established. Removed active substance use disorder indication. Added criteria for the replacement of a spinal cord stimulator. Added criteria for the revision or removal of a spinal cord stimulator. Added 5 references.