Cohere Medical Policy - Lumbar or Thoracic Spinal Fusion

Clinical Guidelines for Medical Necessity Review

Version: 3
Effective Date: December 19, 2024

Important Notices

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Other Notices:

Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System
Guideline Name: Cohere Medical Policy - Lumbar Spinal Fusion

Date of last literature review: 12/16/2024
Document last updated: 12/17/2024
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

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Service: Lumbar or Thoracic Spinal Fusion

Recommended Clinical Approach

Lumbar or thoracic spinal fusion (arthrodesis) may be necessary for conditions such as fracture or dislocation, spinal deformities (e.g., scoliosis or kyphosis), spinal stenosis, infection, tumors, or degenerative changes. This may be accomplished by an anterior, posterior, or posterolateral approach. Surgery may provide more rapid relief than non-surgical treatment options, as well as prevent further spinal cord dysfunction and neurological deficits.[1] Advanced imaging is recommended prior to surgical intervention.[2-4]

Medical Necessity Criteria

Indications

- ➔ **Lumbar or thoracic spinal fusion** is considered appropriate if **ANY** of the following is **TRUE**:
  - ◆ A **lumbar spinal fusion** is considered appropriate if **ALL** of the following are **TRUE**:
    - No nicotine product use for 6 weeks with a negative lab test within 30 days (unless surgery is urgently required for progressive neurologic deficit); **AND**
    - **ANY** of the following is **TRUE**:
      - The procedure is **lumbar fusion with or without decompression,** and **ALL** of the following are **TRUE**:
        - ◆ **ANY** of the following:
          - Radiographic evidence of kyphosis or scoliosis greater than 40 degrees; **OR**
          - Failure of conservative management for greater than 6 weeks, including **AT LEAST TWO** of the following:
            - Anti-inflammatory medications, analgesics, or prescription medications (e.g., oral steroids,

narcotics, neuropathic pain medications) if not contraindicated; **OR**
        - Physical therapy or physician-directed home exercise program; **OR**
        - Injections, when medically appropriate, including **ANY** of the following:
            - Facet injections; **OR**
            - Medial branch blocks (MBB); **OR**
- The procedure is **lumbar fusion with or without decompression** with radiographic evidence of instability or iatrogenic instability caused by the decompression at all levels planned to be fused, and **ANY** of the following is **TRUE**[5-6]:
    - The patient has signs or symptoms of a potential cauda equina syndrome and **ALL** of the following[7]:
        - Magnetic resonance imaging (MRI) reveals compressive pathology; **AND**
        - **ANY** of the following symptoms:
            - Bowel, bladder, and erectile dysfunction; **OR**
            - Diffuse motor weakness; **OR**
            - Saddle-distribution anesthesia; **OR**
    - The patient has lumbar stenosis, and **ALL** of the following are **TRUE**:
        - **ANY** of the following 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 that present only with activity; **OR**

    - Exacerbating factors include standing, walking, and other upright exercises; **OR**
    - Pain that is relieved in a sitting or supine position or with forward flexion at the waist; **OR**
    - Lower extremity pain that is made worse by walking; **AND**
- **ANY** of the following physical examination findings[5, 8-9]:
    - Focal motor weakness or sensory deficit; **OR**
    - Decreased or absent lower extremity reflexes; **OR**
    - Wide-based gait; **OR**
    - Positive Romberg's test (poor standing balance with eyes closed); **OR**
    - Positive straight leg raise (SLR; reproduction of lower extremity pain upon extension at the knee); **AND**
- MRI reveals compressive pathology and **ANY** of the following[10]:
    - Failure of conservative management for greater than 6 weeks, including **AT LEAST TWO** of the following:
        - Anti-inflammatory medications, analgesics or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **OR**
        - Physical therapy, including a physician-directed home exercise program; **OR**

        - Injections, when medically appropriate, including **ANY** of the following:
            - Facet injections; **OR**
            - Medial branch blocks (MBB); **OR**
    - The patient has severe pain or disability affecting their quality of life and limiting their daily life (including working and inability to provide self-care); **OR**
    - The patient has progressive neurological motor deficits; **OR**
    - Unstable fracture noted on imaging with neuro deficit or myelopathy with **ANY** of the following;
        - Chance fracture; **OR**
        - Burst fracture with neuro deficit;
        - Fracture-dislocation; **OR**
- The patient has lumbar radiculopathy and **ALL** of the following are **TRUE**:
    - **ANY** of the following symptoms[8]:
        - Lower extremity pain, paresthesia, weakness, or numbness in a myotomal or dermatome distribution; **OR**
        - Radicular pain with coughing, sneezing, or straining; **OR**
        - LBP; **AND**
    - **ANY** of the following physical examination findings[8-9]:
        - Sensory disturbance (e.g., loss of sensation or decreased sensory response) or weakness in a dermatomal or myotomal distribution; **OR**

    - Absent or decreased lower extremity reflex; **OR**
    - Reduced spinal mobility; **OR**
    - **ANY** of the following positive specialty tests (unless medically contraindicated):
        - Straight leg raise; **OR**
        - Crossed Lasègue's (or crossed straight leg raise); **OR**
        - Femoral nerve stretch; **OR**
        - Slump; **AND**
- MRI reveals compressive pathology and the patient has **ANY** of the following[10]:
    - Failure to show significant improvement in pain or disability level due to symptoms, despite receiving non-surgical management for more than 6 weeks, including **AT LEAST TWO** of the following (unless medically contraindicated):
        - Anti-inflammatory medications, analgesics or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **OR**
        - Physical therapy, including a physician-directed home exercise program; **OR**
        - Injections, when medically appropriate, including **ANY** of the following:
            - Facet injections; **OR**
            - Medial branch blocks (MBB); **OR**

        - Severe pain or disability affecting their quality of life and limiting their daily life (including working and being unable to provide self-care); **OR**
        - Progressive neurological motor deficits; **OR**

- A **thoracic spinal fusion** is considered appropriate if **ALL** of the following are **TRUE**:
    - No nicotine product use for 6 weeks with a negative lab test within 30 days (unless surgery is urgently required for progressive neurologic deficit); **AND**
    - **ANY** of the following is **TRUE**:
        - The procedure is thoracic fusion with or without decompression with **ALL** of the following:
            - Radiographic evidence of **ANY** of the following:
                - Lumbar curve greater than 40 degrees requiring extension into the thoracic spine; **OR**
                - Positive sagittal balance or sagittal vertebral axis (SVA) greater than 5 cm; **OR**
                - Pelvic incidence - lumbar lordosis (PI-LL) mismatch greater than 10 degrees; **AND**
            - Failure to show significant improvement in pain or disability level due to symptoms, despite receiving non-surgical management for more than 6 weeks, including **AT LEAST TWO** of the following (unless medically contraindicated):
                - Anti-inflammatory medications, analgesics or prescription medications (e.g., oral steroids, narcotics, neuropathic pain medications) if not contraindicated; **OR**
                - Physical therapy, including a physician-directed home exercise program; **OR**

- Injections, when medically appropriate, including **ANY** of the following:
    - Facet injections; **OR**
    - Medial branch blocks (MBB); **OR**

◆ Junctional fusion for adjacent segment disease (e.g., stenosis, kyphosis, listhesis) is appropriate when **ANY** of the following is **TRUE**:

- Adjacent cervical fusion is medically appropriate and approvable; **OR**
- Adjacent lumbar fusion is medically appropriate and approvable; **OR**
- Adjacent thoracic fusion is medically appropriate and approvable; **OR**

◆ Revision or repeat spinal fusion (e.g., due to prior unhealed fusion attempt) when at least 12 months have elapsed since the original surgery and imaging studies confirm the absence of healing in the preceding 3 months unless failure has occurred (e.g., pseudoarthrosis)[11].

Non-Indications

➔ A **thoracic or lumbar spinal fusion** is not considered appropriate if **ANY** of the following is **TRUE**:

◆ Current laboratory-confirmed nicotine use (unless surgery is urgently required for progressive neurologic deficit); **OR**

◆ **ANY** of the following[7]:

- In disc herniation, adjunct to primary excision of a central or posterolateral disc herniation at any level in the absence of instability or spondylolisthesis; **OR**
- In lumbar stenosis when greater than 50% bilateral facet resection is not required to achieve neurologic decompression; **OR**
- Discogenic LBP that does not meet the criteria listed in the Indications section above.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
20999	Unlisted procedure, musculoskeletal system, general
22532	Arthrodesis, lateral extra cavitary technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic
22533	Arthrodesis, lateral, lumbar
22534	Each additional, thoracic or lumbar, (add-on code)
22556	Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic
22558	Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); lumbar
22585	Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); each additional interspace (List separately in addition to code for primary procedure)
22586	Arthrodesis, pre-sacral interbody technique, including disc space preparation, discectomy, with posterior instrumentation, with image guidance, includes bone graft when performed, L5-S1 interspace
22610	Arthrodesis, posterior or posterolateral technique, single interspace; thoracic (with lateral transverse technique, when performed)
22612	Arthrodesis, posterior or posterolateral technique, single interspace; lumbar (with lateral transverse technique, when performed)
22614	Arthrodesis, posterior or posterolateral technique, single

	interspace; each additional interspace (List separately in addition to code for primary procedure)
22630	Arthrodesis, posterior interbody technique, including laminectomy and/or discectomy to prepare interspace (other than for decompression), single interspace, lumbar
22632	Arthrodesis, posterior interbody technique, including laminectomy and/or discectomy to prepare interspace (other than for decompression), single interspace, lumbar; each additional interspace (List separately in addition to code for primary procedure)
22633	Arthrodesis, combined posterior or posterolateral technique with posterior interbody technique including laminectomy and/or discectomy sufficient to prepare interspace (other than for decompression), single interspace, lumbar
22634	Arthrodesis, combined posterior or posterolateral technique with posterior interbody technique including laminectomy and/or discectomy sufficient to prepare interspace (other than for decompression), single interspace, lumbar; each additional interspace (List separately in addition to code for primary procedure)
22800	Arthrodesis, posterior, for spinal deformity, with or without cast; up to 6 vertebral segments
22802	Arthrodesis, posterior, for spinal deformity, with or without cast; 7 to 12 vertebral segments
22804	Arthrodesis, posterior, for spinal deformity, with or without cast; 13 or more vertebral segments
22808	Arthrodesis, anterior, for spinal deformity, with or without cast; 2 to 3 vertebral segments
22810	Arthrodesis, anterior, for spinal deformity, with or without cast; 4 to 7 vertebral segments

22812	Arthrodesis, anterior, for spinal deformity, with or without cast; 8 or more vertebral segments
22830	Exploration of spinal fusion
22840	Posterior non-segmental instrumentation (eg, Harrington rod technique, pedicle fixation across 1 interspace, atlantoaxial transarticular screw fixation, sublaminar wiring at C1, facet screw fixation) (List separately in addition to code for primary procedure)
22841	Internal spinal fixation by wiring of spinous processes (List separately in addition to code for primary procedure)
22842	Posterior segmental instrumentation (eg, pedicle fixation, dual rods with multiple hooks and sublaminar wires); 3 to 6 vertebral segments (List separately in addition to code for primary procedure)
22843	Posterior segmental instrumentation (eg, pedicle fixation, dual rods with multiple hooks and sublaminar wires); 7 to 12 vertebral segments (List separately in addition to code for primary procedure)
22844	Posterior segmental instrumentation (eg, pedicle fixation, dual rods with multiple hooks and sublaminar wires); 13 or more vertebral segments (List separately in addition to code for primary procedure)
22845	Anterior instrumentation; 2 to 3 vertebral segments (List separately in addition to code for primary procedure)
22846	Anterior instrumentation; 4 to 7 vertebral segments (List separately in addition to code for primary procedure)
22847	Anterior instrumentation; 8 or more vertebral segments (List separately in addition to code for primary procedure)
22848	Pelvic fixation (attachment of caudal end of

	instrumentation to pelvic bony structures) other than sacrum (List separately in addition to code for primary procedure)
22849	Reinsertion of spinal fixation device
22853	Insertion of interbody biomechanical device(s) (eg, synthetic cage, mesh) with integral anterior instrumentation for device anchoring (eg, screws, flanges), when performed, to intervertebral disc space in conjunction with interbody arthrodesis, each interspace (List separately in addition to code for primary procedure)
22854	Insertion of intervertebral biomechanical device(s) (eg, synthetic cage, mesh) with integral anterior instrumentation for device anchoring (eg, screws, flanges), when performed, to vertebral corpectomy(ies) (vertebral body resection, partial or complete) defect, in conjunction with interbody arthrodesis, each contiguous defect (List separately in addition to code for primary procedure)
22859	Insertion of intervertebral biomechanical device(s) (eg, synthetic cage, mesh, methylmethacrylate) to intervertebral disc space or vertebral body defect without interbody arthrodesis, each contiguous defect (List separately in addition to code for primary procedure)
22899	Unlisted procedure, spine

Medical Evidence

Kreiner et al. (2020) published a systematic review of guidelines for low back pain (LBP) diagnosis and treatment. Insufficient evidence was found to recommend for or against a particular fusion technique for the treatment of LBP. No literature evidence was found to adequately address differences in clinical outcomes or functional status for single-level vs. multilevel fusions. No studies were found to address the effectiveness of fusion over discectomy, discectomy with rhizotomy or decompression alone.[13]

The American College of Radiology (ACR) Expert Panel on Neurological Imaging has published appropriateness criteria related to myelopathic evaluation. Agarwal et al. (2021) updated the previous criteria for myelopathy with magnetic resonance imaging (MRI) recommended as initial imaging for acute onset myelopathy. MRI is also recommended for chronic or progressive myelopathy due to its superior resolution of soft tissue and ability to evaluate surrounding structures. Computed tomography (CT) may be appropriate, with CT myelography of possible use prior to surgical intervention.[2] Non-contrast MRI is usually appropriate for (LBP; radiography and CT may be appropriate for LBP with and without radiculopathy. This applies to surgical candidates with persistence or progression of symptoms having failed six weeks of medical management. MRI, CT, and CT myelography are recommended for suspected cauda equina syndrome. In cases of osteoporosis or chronic steroid use, radiography, non-contrast MRI, or CT is usually appropriate.[3]

Reid et al. (2019) completed a literature review regarding the current state of lumbar fusion indications and techniques for degenerative spine disease. The group states that few randomized trials exist that studied lumbar fusion for degenerative disease. Lumbar instrumentation technologies in degenerative diseases are discussed, including issues from Harrington rod implantation, such as sagittal imbalance and flatback syndrome. Pedicle screw fixation development is stated to significantly improve successful fusion rates.[12]

References

1. Gibson JN, Waddell G. Surgery for degenerative lumbar spondylosis. *Cochrane Database Syst Rev*. 2005;2005(4):CD001352. Published 2005 Oct 19. doi: 10.1002/14651858.CD001352.pub3.
2. Agarwal V, Shah LM, et al. ACR appropriateness criteria - myelopathy: 2021 update. *J Am Coll Radiol*. 2021;18(5S):S73-S82. doi: 10.1016/j.jacr.2021.01.020.
3. Hutchins TA, Peckham M, et al. ACR appropriateness criteria - low back pain: 2021 update. *J Am Coll Radiol*. 2021;18(11S):S361-S379. doi: 10.1016/j.jacr.2021.08.002.
4. North American Spine Society (NASS). Clinical guidelines for multidisciplinary spine care: Diagnosis and treatment of adult isthmic spondylolisthesis. Published 2014. Accessed November 25, 2024. https://www.spine.org/Portals/0/assets/downloads/ResearchClinicalCare/Guidelines/AdultIsthmicSpondylolisthesis.pdf.
5. Kreiner DS, Shaffer WO, Baisden JL, et al. An evidence-based clinical guideline for the diagnosis and treatment of degenerative lumbar spinal stenosis (update). *Spine J*. 2013 Jul;13(7):734-43. doi: 10.1016/j.spinee.2012.11.059. PMID: 23830297.
6. Samuel AM, Moore HG, Cunningham ME. Treatment for degenerative lumbar spondylolisthesis: Current concepts and new evidence. *Curr Rev Musculoskelet Med*. 2017;10(4):521-529. doi: 10.1007/s12178-017- 9442-3.
7. North American Spine Society (NASS). NASS coverage policy recommendations: Lumbar fusion. Published June 2021. Accessed November 25, 2024. https://www.spine.org/.
8. Kreiner DS, Hwang SW, Easa JE, et al. An evidence-based clinical guideline for the diagnosis and treatment of lumbar disc herniation with radiculopathy. *Spine J*. 2014 Jan;14(1):180-91. doi: 10.1016/j.spinee.2013.08.003. PMID: 24239490.
9. Coster S, de Bruijn SFTM, Tavy DLJ. Diagnostic value of history, physical examination and needle electromyography in diagnosing lumbosacral radiculopathy. *J Neurol*. 2010;257(3):332-337. doi: 10.1007/s00415-009-5316-y. PMID: 19763381.

10. Atlas SJ, Delitto A. Spinal stenosis: Surgical versus nonsurgical treatment. *Clin Orthop Relat Res*. 2006;443:198-207. doi: 10.1097/01.blo.0000198722.70138.96. PMID: 16462443.
11. Resnick D, Jacobson JA, Chung CB, Kransdorf MH, Pathria MN. Imaging after spine surgery. *Resnick's Bone and Joint Imaging*. 4th ed. St. Louis, MO; Elsevier; 2025.
12. Reid PC, Morr S, Kaiser MG. State of the union: a review of lumbar fusion indications and techniques for degenerative spine disease. *J Neurosurg Spine.* 2019;31:1-14. https://thejns.org/doi/abs/10.3171/2019.4.SPINE18915.
13. Kreiner DS, Matz P, Bono CM, et al. Guideline summary review: an evidence-based clinical guideline for the diagnosis and treatment of low back pain. *Spine J.* 2020 Jul;20(7):998-1024. doi: 10.1016/j.spinee.2020.04.006. Erratum in: *Spine J*. 2021 Apr;21(4):726-727. doi: 10.1016/j.spinee.2021.02.006. PMID: 32333996.

Clinical Guideline Revision History/Information

Original Date: September 29, 2023		
Review History		
Version 2	7/25/2024	Updated language regarding conservative treatment and nicotine use.
Version 2A	9/20/2024	Added CPT code 22840.
Version 3	12/19/2024	• Annual review. Added thoracic criteria. • Revised conservative care and nicotine use sections. • Literature review- additions made • Style updates made per Style Guide