



## **Lumbar Spinal Fusion – Single Service**

*Clinical Guidelines for Medical Necessity Review*

**Version:** 2  
**Effective Date:** July 25, 2024

# Important Notices

## Notices & Disclaimers:

**GUIDELINES 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 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.

©2023 Cohere Health, Inc. All Rights Reserved.

---

## Other Notices:

HCPCS® and CPT® copyright 2022 American Medical Association. All rights reserved.

Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein.

HCPCS and CPT are registered trademarks of the American Medical Association.

---

## Guideline Information:

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

**Guideline Name:** Lumbar Spinal Fusion (Single Service)

**Literature review current through:** 7/25/2024

**Document last updated:** 7/25/2024

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

## **Table of Contents**

<b>Important Notices</b>	<b>2</b>
Table of Contents	3
<b>Medical Necessity Criteria</b>	<b>3</b>
<b>Service: Lumbar Spinal Fusion</b>	<b>4</b>
General Guidelines	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	7
Level of Care Criteria	8
Procedure Codes (CPT/HCPCS)	8
<b>Medical Evidence</b>	<b>12</b>
<b>References</b>	<b>14</b>
<b>Clinical Guideline Revision History/Information</b>	<b>16</b>

# Medical Necessity Criteria

## ***Service: Lumbar Spinal Fusion***

### General Guidelines

- **Units, Frequency, & Duration:** No clearly established consensus or criteria regarding the timing of surgical intervention.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach:** Surgery provides more rapid relief than non-surgical treatment options. Surgery can also prevent further spinal cord dysfunction and neurological deficits, particularly in moderate or severe cases.<sup>1</sup> Advanced imaging is recommended prior to surgical intervention.<sup>2-4</sup>
- **Exclusions:** None.

### Medical Necessity Criteria

#### Indications

- **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; **AND**
  - ◆ **ANY** of the following is **TRUE**:
    - The procedure is **lumbar fusion with/without decompression**, and **ALL** of the following is **TRUE**:
      - Radiographic evidence of kyphosis/scoliosis greater than 40 degrees; **AND**
      - Failure of conservative management for greater than 6 weeks, including **ALL** of the following:
        - ◆ Oral steroids, anti-inflammatory medications, or analgesics; **AND**
        - ◆ Physical therapy, including a self-directed home exercise program; **AND**
        - ◆ Facet injections, medial branch blocks (MBBs), or epidural steroid injections (ESIs); **AND**
        - ◆ **ANY** of the following:
          - Corticosteroid injection if medically appropriate; **OR**

- Corticosteroid injection is contraindicated; **OR**
- The procedure is **lumbar fusion with/without decompression** with radiographic evidence of instability or iatrogenic instability caused by the decompression at all levels planned to be fused and **ANY** of the following is **TRUE**<sup>5-6</sup>:
  - The patient has signs or symptoms of a potential cauda equina syndrome and **ALL** of the following<sup>7</sup>:
    - ◆ MRI reveals compressive pathology; **AND**
    - ◆ **ANY** of the following symptoms:
      - Bowel, bladder, and erectile dysfunction; **OR**
      - Diffuse motor weakness; **OR**
      - Saddle-distribution anesthesia; **OR**
  - The patient has **lumbar stenosis** and **ALL** of the following are **TRUE**:
    - ◆ **ANY** of the following **lumbar stenosis symptoms**<sup>5</sup>:
      - Lower extremity pain, weakness, fatigue, paresthesias, and sensory changes; **OR**
      - Gluteal and low back pain (LBP); **OR**
      - Bilateral or unilateral symptoms; **OR**
      - Symptoms may present only with activity; **OR**
      - Exacerbating factors include standing, walking, and other upright exercises; **OR**
      - Pain may relieve in a sitting or supine position or with forward flexion at the waist; **OR**
      - Lower extremity pain that is made worse by walking; **AND**
    - ◆ **ANY** of the following lumbar stenosis **physical examination** findings<sup>8-9</sup>:
      - Focal motor weakness or sensory deficit; **OR**
      - Decreased or absent lower extremity reflexes; **OR**
      - Wide-based gait; **OR**

- Positive Romberg’s test (poor standing balance with eyes closed); **OR**
- Positive straight leg raise (SLR; reproduction of lower extremity pain upon extension at the knee); **AND**
- ◆ MRI reveals compressive pathology and **ANY** of the following<sup>10</sup>:
  - Failure of conservative management for greater than 6 weeks, including **ALL** of the following:
    - Oral steroids, anti-inflammatory medications, or analgesics; **AND**
    - Physical therapy, including a self-directed home exercise program; **AND**
    - Facet injections, MBBs, or ESIs; **AND**
    - **ANY** of the following:
      - ◆ Corticosteroid injection if medically appropriate; **OR**
      - ◆ Corticosteroid injection is contraindicated; **OR**
  - The patient has severe pain or disability affecting their quality of life and limiting their daily life (including working and unable to provide self care); **OR**
  - The patient has progressive neurological motor deficits; **OR**
- The patient has **lumbar radiculopathy** and **ALL** of the following are **TRUE**:
  - ◆ **ANY** of the following **lumbar radiculopathy** symptoms<sup>8</sup>:
    - Lower extremity pain, paresthesia, weakness, or numbness in a myotomal or dermatome distribution; **OR**
    - Increased pain with coughing, sneezing or straining; **OR**
    - Low back pain; **AND**
  - ◆ **ANY** of the following lumbar radiculopathy **physical examination** findings<sup>8-9</sup>:

- Sensory disturbance (i.e., loss of sensation or decreased sensory response) or weakness in a dermatomal/myotomal distribution; **OR**
- Absent or decreased Achilles reflex; **OR**
- Reduced spinal mobility; **OR**
- **ANY** of the following positive specialty tests:
  - Straight leg raise; **OR**
  - Crossed Lasègue's (or crossed straight leg raise); **OR**
  - Femoral nerve stretch; **OR**
  - Slump; **AND**
- ◆ MRI reveals compressive pathology and **ANY** of the following<sup>10</sup>:
  - The patient fails to show significant improvement in pain or disability level due to symptoms, despite receiving non-surgical management for more than six (6) weeks, including **ALL** of the following (unless medically contraindicated):
    - Physical therapy, including home exercise program; **AND**
    - Anti-inflammatory medications or oral steroids; **AND**
    - Facet injections, MBBs, or ESIs; **OR**
  - The patient has severe pain or disability affecting their quality of life and limiting their daily life (including working and being unable to provide self-care); **OR**
  - The patient has progressive neurological motor deficits.

## Non-Indications

→ **Lumbar spinal fusion** may not be considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Nicotine use.

## **Level of Care Criteria**

Inpatient or Outpatient

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

<b>CPT/HCPCS Code</b>	<b>Code Description</b>
20999	Unlisted procedure, musculoskeletal system, general
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, methylmethacrylate) to intervertebral disc space or vertebral body defect without interbody arthrodesis, each contiguous defect (List separately in addition to code for primary procedure)
22899	Unlisted procedure, spine

# Medical Evidence

In a systematic review by Lannon et al. (2021), degenerative cervical myelopathy (DCM) is described as a leading cause of spinal cord injury and spinal stenosis with increasing incidence. Early surgical referral is recommended along with conservative management to prevent progressive neurologic compromise. Surgical treatment may be recommended with clinically progressive myelopathic symptoms and cord compression as evidenced by imaging studies. A large retrospective, multicenter study with 2156 patients. Notable improvement was found in 18.8% of the patients (2-point improvement in mJOAscores) at 3-month follow-up. Among patients with severe baseline scores, improvement was noted at 12-month follow-up.<sup>11</sup>

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

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

The American College of Radiology (ACR) Expert Panel on Neurological Imaging has published appropriateness criteria related to myelopathic evaluation. Agarwal et al. (2021) updated the previous criteria for myelopathy with MRI recommended as initial imaging for acute onset myelopathy. MRI is also recommended for chronic or progressive myelopathy due to its superior resolution of soft tissue and ability to evaluate surrounding structures. CT may be appropriate, with CT myelography of possible use prior to surgical intervention.<sup>2</sup> Non-contrast MRI is usually appropriate for low back pain (LBP); radiography and CT may be appropriate for LBP with and without radiculopathy. This applies to surgical candidates with persistence or

progression of symptoms having failed six weeks of medical management. MRI, CT, and CT myelography are recommended for suspected cauda equina syndrome. In cases of osteoporosis or chronic steroid use, radiography, non-contrast MRI, or CT is usually appropriate.<sup>3</sup>

## 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. Expert Panel on Neurological Imaging, 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. Expert Panel on Neurological Imaging, 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 July 1, 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 July 1, 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. Lannon M, Kachur E. Degenerative cervical myelopathy: Clinical presentation, assessment, and natural history. *J Clin Med*. 2021 Aug 17;10(16):3626. doi: 10.3390/jcm10163626. PMID: 34441921.
12. McCormick JR, Sama AJ, Schiller NC, et al. Cervical spondylotic myelopathy: A guide to diagnosis and management. *J Am Board Fam Med*. 2020 Mar-Apr;33(2):303-313. doi: 10.3122/jabfm.2020.02.190195. PMID: 32179614.
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. 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.