



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

*Clinical Guidelines for Medical Necessity Review*

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

# 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.

© 2025 Cohere Health, Inc. All Rights Reserved.

---

## Other Notices:

HCPCS® and CPT® copyright 2025 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:** Disorders of the Musculoskeletal System

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

**Date of last literature review:** 2/18/2025

**Document last updated:** 2/18/2025

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

## **Table of Contents**

<b>Important Notices</b>	<b>2</b>
<b>Medical Necessity Criteria</b>	<b>4</b>
<b>Service: Title</b>	<b>4</b>
Recommended Clinical Approach	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	4
Level of Care Criteria	4
Procedure Codes (CPT/HCPCS)	4
<b>Medical Evidence</b>	<b>5</b>
<b>References</b>	<b>6</b>
<b>Clinical Guideline Revision History/Information</b>	<b>7</b>

# Medical Necessity Criteria

## **Service: Cervical Spinal Fusion**

### **Recommended Clinical Approach**

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

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

### **Medical Necessity Criteria**

#### **Indications**

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

◆ **ANY** of the following:

- Current nicotine user with no product use for 6 weeks, and **ANY** of the following:
  - Negative lab test within 30 days; **OR**
  - Surgery is urgently required for progressive neurologic deficit; **OR**
- No history of nicotine product use within the last 12 months; **OR**
- No lifetime history of nicotine product use; **AND**

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

- The patient has myelopathy, and **ALL** of the following are **TRUE**:
  - **ANY** of the following myelopathy symptoms:
    - ◆ Gait disturbance or abnormality; **OR**
    - ◆ Frequent falls; **OR**
    - ◆ Loss of dexterity/coordination; **OR**
    - ◆ Bowel or bladder dysfunction; **OR**
    - ◆ Spasticity or tremors; **OR**

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

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

daily life (including working and ability to provide self-care)<sup>8</sup>; **OR**

- ◆ Chronic instability on radiographic films measuring **ANY** of the following:
  - Sagittal plane angulation greater than 11° at a single level; **OR**
  - Greater than 3.5 mm of anterior subluxation in association with radicular/cord dysfunction; **OR**
  - Subluxation at the first cervical (C1) level at the atlantodental interval of more than 3 mm in an adult and 5 mm in a child<sup>9</sup>; **OR**
- Acute fracture or instability on radiographic films; **OR**
- Primary or metastatic tumor<sup>9</sup>; **OR**
- Revision or repeat spinal fusion (e.g., due to prior unhealed fusion attempt) when at least 6 months have elapsed since the original surgery and imaging studies confirm the absence of healing in the preceding 3 months unless failure has occurred (e.g., pseudoarthrosis).<sup>10</sup>

### Non-Indications

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

- ◆ Current laboratory-confirmed nicotine use (unless surgery is urgently required for progressive neurologic deficit); **OR**
- ◆ In anterior cervical discectomy and fusion (ACDF), when there is ossification of the posterior longitudinal ligament, unless kyphosis is present.

### Level of Care Criteria

Inpatient or Outpatient

### Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
----------------	------------------

20999	Unlisted procedure, musculoskeletal system, general
22532	Arthrodesis, lateral extracavitary technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic
22548	Arthrodesis, anterior transoral or extraoral technique, clivus-C1-C2 (atlas-axis), with or without excision of odontoid process
22551	Arthrodesis, anterior interbody, including disc space preparation, discectomy, osteophylectomy and decompression of spinal cord and/or nerve roots; cervical below C2
22552	Arthrodesis, anterior interbody, including disc space preparation, discectomy, osteophylectomy and decompression of spinal cord and/or nerve roots; cervical below C2, each additional interspace (List separately in addition to code for primary procedure)
22554	Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); cervical below C2
22556	Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic
22585	Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); each additional interspace (List separately in addition to code for primary procedure)
22590	Arthrodesis, posterior technique, craniocervical (occiput-C2)
22595	Arthrodesis, posterior technique, atlas-axis (C1-C2)
22600	Arthrodesis, posterior or posterolateral technique, single interspace; cervical below C2 segment
22610	Arthrodesis, posterior or posterolateral technique, single interspace; thoracic (with lateral transverse

	technique, when performed)
22614	Arthrodesis, posterior or posterolateral technique, single interspace; each additional interspace (List separately in addition to code for primary procedure)
22634	Arthrodesis, combined posterior or posterolateral technique with posterior interbody technique including laminectomy and/or discectomy sufficient to prepare interspace (other than for decompression), single interspace, lumbar; each additional interspace (List separately in addition to code for primary procedure)
22800	Arthrodesis, posterior, for spinal deformity, with or without cast; up to 6 vertebral segments
22802	Arthrodesis, posterior, for spinal deformity, with or without cast; 7 to 12 vertebral segments
22804	Arthrodesis, posterior, for spinal deformity, with or without cast; 13 or more vertebral segments
22808	Arthrodesis, anterior, for spinal deformity, with or without cast; 2 to 3 vertebral segments
22810	Arthrodesis, anterior, for spinal deformity, with or without cast; 4 to 7 vertebral segments
22812	Arthrodesis, anterior, for spinal deformity, with or without cast; 8 or more vertebral segments
22830	Exploration of spinal fusion
22840	Posterior non-segmental instrumentation (eg, Harrington rod technique, pedicle fixation across 1 interspace, atlantoaxial transarticular screw fixation, sublaminar wiring at C1, facet screw fixation) (List separately in addition to code for primary procedure)
22841	Internal spinal fixation by wiring of spinous processes (List separately in addition to code for primary procedure)
22842	Posterior segmental instrumentation (eg, pedicle

	fixation, dual rods with multiple hooks and sublaminar wires); 3 to 6 vertebral segments (List separately in addition to code for primary procedure)
22845	Anterior instrumentation; 2 to 3 vertebral segments (List separately in addition to code for primary procedure)
22846	Anterior instrumentation; 4 to 7 vertebral segments (List separately in addition to code for primary procedure)
22847	Anterior instrumentation; 8 or more vertebral segments (List separately in addition to code for primary procedure)
22849	Reinsertion of spinal fixation device
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
-------	---------------------------

## Medical Evidence

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

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

- Agarwal et al. (2021) updated the previous *Myelopathy Appropriate Use Criteria*, with magnetic resonance imaging (MRI) recommended as initial imaging for acute-onset myelopathy as well as chronic or progressive myelopathy due to its superior resolution of soft tissue and ability to evaluate surrounding structures. Computed tomography (CT) is designated as 'May Be Appropriate' in the ratings, with CT myelography of possible use prior to surgical intervention.<sup>1</sup>
- McDonald et al. (2019) recommend radiography, MRI or CT for initial imaging in new or increasing nontraumatic neck pain, as well as in cervical radiculopathy. In patients with a history of cervical spine surgery, radiography and non-contrast CT are primary recommendations with a disagreement on the appropriateness of MRI (contrast and non-contrast). CT myelography is rated as May Be Appropriate.<sup>12</sup>

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

In a 2020 clinical review, McCormick et al. discuss cervical spondylotic myelopathy including patient presentation of symptoms, preference of MRI as primary imaging, with CT myelography as an alternative, in patients with contraindications, and the necessity of surgery in moderate to severe cases. Prompt surgical referral is recommended.<sup>13</sup>

## References

1. 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. PMID: 33958120.
2. Bono CM, Fernand R, Ghiselli G, et al. Diagnosis and treatment of cervical radiculopathy from degenerative disorders. *Spine J*. 2011 Jan;11(1):64–72. doi: 10.1016/j.spinee.2010.10.023. PMID: 21168100.
3. 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.
4. Bydon M, Mathios D, Macki M, et al. Long-term patient outcomes after posterior cervical foraminotomy: An analysis of 151 cases: Clinical article. *J Neurosurg Spine*. 2014 Nov;21(5):727–31. doi: 10.3171/2014.7.SPINE131110. PMID: 25127430.
5. Young W. Cervical spondylotic myelopathy: A common cause of spinal cord dysfunction in older persons. Published 2020. Accessed July 1, 2024. <https://www.aafp.org/afp/2000/0901/p1064.html#afp20000901p1064-b15>.
6. Rhee JM, Shamji MF, Erwin WM, et al. Nonoperative management of cervical myelopathy: A systematic review. *Spine (Phila Pa 1976)*. 2013;38(22 Suppl 1):S55–S67. doi: 10.1097/BRS.0b013e3182a7f41d. PMID: 23963006.
7. Karadimas SK, Erwin WM, Ely CG, et al. Pathophysiology and natural history of cervical spondylotic myelopathy. *Spine (Phila Pa 1976)*. 2013;38(22 Suppl 1):S21–S36. doi: 10.1097/BRS.0b013e3182a7f2c3. PMID: 23963004.
8. Singh K, Qureshi S. ISASS Policy Statement. Cervical interbody. Published 2014. <https://www.isass.org>.
9. White AA 3rd, Johnson RM, Panjabi MM, Southwick WO. Biomechanical analysis of clinical stability in the cervical spine. *Clin Orthop Relat Res*. 1975;(109):85–96. doi:10.1097/00003086-197506000-00011.
10. North American Spine Society (NASS). NASS coverage policy recommendations: Cervical fusion. Published May 2023. Accessed July 1, 2024. <https://www.spine.org/>.
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. McDonald MA, Kirsch CFE, et al. ACR appropriateness criteria - cervical neck pain or cervical radiculopathy. *J Am Coll Radiol*. 2019 May;16(5S):S57-S76. doi: 10.1016/j.jacr.2019.02.023. PMID: 31054759.
13. 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.

# Clinical Guideline Revision History/Information

Original Date: September 22, 2023		
Review History		
Version 2	09/20/2024	Updated language regarding conservative treatment and nicotine use
Version 3	12/19/2024	<ul style="list-style-type: none"> <li>● Annual review.</li> <li>● Revised conservative care and nicotine use sections.</li> <li>● Literature review- additions made</li> <li>● Style updates made per Style Guide</li> </ul>
Version 4	2/20/2025	<p>Annual Review</p> <ul style="list-style-type: none"> <li>● Updated nicotine language to read: “Current nicotine user with no product use for 6 weeks, and <b>ANY</b> of the following: Negative lab test within 30 days; <b>OR</b> Surgery is urgently required for progressive neurologic deficit; <b>OR</b> No history of nicotine product use within the last 12 months; <b>OR</b> No lifetime history of nicotine product use”</li> <li>● Changed “Fracture or instability on radiographic films” indication to “Chronic instability on radiographic films”</li> <li>● Added “acute fracture or instability on radiographic films” and “Primary or metastatic tumor” indications.</li> </ul>