carelon

Status: Revised
Doc ID: MSK03-1024.2
Effective Date: 10/20/2024
Last Review Date: 01/23/2024

Approval and implementation dates for specific health plans may vary. Please consult the applicable health plan for more details.

Clinical Appropriateness Guidelines

Musculoskeletal

Appropriate Use Criteria: Spine Surgery

Proprietary

Table of Contents

Description and Application of the Guidelines 4
General Clinical Guideline 5
Cervical Decompression With or Without Fusion 7
- Description and Scope 7
- Clinical Indications 7
- Exclusions 11
- References 11
- Codes 13

Cervical Disc Arthroplasty 17
- Description and Scope 17
- Clinical Indications 17
- Contraindications 19
- Exclusions 20
- References 20
- Codes 22

Lumbar Disc Arthroplasty 23
- Description and Scope 23
- Clinical Indications 23
- Contraindications 25
- Exclusions 25
- References 25
- Codes 26

Lumbar Discectomy, Foraminotomy, and Laminotomy 27
- Description and Scope 27
- Clinical Indications 27
- Exclusions 29
- References 29
- Codes 30

Lumbar Fusion and Treatment of Spinal Deformity (including Scoliosis and Kyphosis) 32
- Description and Scope 32
- Clinical Indications 32
- Exclusions 37
- References 37
- Codes 40

Lumbar Laminectomy 43
- Description and Scope 43
- Clinical Indications 43
- Exclusions 46
- References 46
- Codes 47

Noninvasive Electrical Bone Growth Stimulation 49
Description 49
Clinical Indications 49
Exclusions 50
References 50
Codes 50
Vertebroplasty/Kyphoplasty 51
Description 51
Clinical Indications 51
Contraindications 52
Exclusions 52
References 52
Codes 54
Bone Graft Substitutes and Bone Morphogenetic Proteins 55
Description and Scope 55
General Considerations 55
Clinical Indications 55
Exclusions 56
References 56
Codes 57
History 57

Description and Application of the Guidelines

The Carelon Clinical Appropriateness Guidelines (hereinafter “the Carelon Clinical Appropriateness Guidelines” or the “Guidelines”) are designed to assist providers in making the most appropriate treatment decision for a specific clinical condition for an individual. The Guidelines establish objective and evidence-based criteria for medical necessity determinations, where possible, that can be used in support of the following:

- To establish criteria for when services are medically necessary
- To assist the practitioner as an educational tool
- To encourage standardization of medical practice patterns
- To curtail the performance of inappropriate and/or duplicate services
- To address patient safety concerns
- To enhance the quality of health care
- To promote the most efficient and cost-effective use of services

The Carelon guideline development process complies with applicable accreditation and legal standards, including the requirement that the Guidelines be developed with involvement from appropriate providers with current clinical expertise relevant to the Guidelines under review and be based on the most up-to-date clinical principles and best practices. Resources reviewed include widely used treatment guidelines, randomized controlled trials or prospective cohort studies, and large systematic reviews or meta-analyses. Carelon reviews all of its Guidelines at least annually.

Carelon makes its Guidelines publicly available on its website. Copies of the Guidelines are also available upon oral or written request. Additional details, such as summaries of evidence, a list of the sources of evidence, and an explanation of the rationale that supports the adoption of the Guidelines, are included in each guideline document.

Although the Guidelines are publicly available, Carelon considers the Guidelines to be important, proprietary information of Carelon, which cannot be sold, assigned, leased, licensed, reproduced or distributed without the written consent of Carelon.

Carelon applies objective and evidence-based criteria, and takes individual circumstances and the local delivery system into account when determining the medical appropriateness of health care services. The Carelon Guidelines are just guidelines for the provision of specialty health services. These criteria are designed to guide both providers and reviewers to the most appropriate services based on a patient’s unique circumstances. In all cases, clinical judgment consistent with the standards of good medical practice should be used when applying the Guidelines. Guideline determinations are made based on the information provided at the time of the request. It is expected that medical necessity decisions may change as new information is provided or based on unique aspects of the patient’s condition. The treating clinician has final authority and responsibility for treatment decisions regarding the care of the patient and for justifying and demonstrating the existence of medical necessity for the requested service. The Guidelines are not a substitute for the experience and judgment of a physician or other health care professionals. Any clinician seeking to apply or consult the Guidelines is expected to use independent medical judgment in the context of individual clinical circumstances to determine any patient’s care or treatment.

The Guidelines do not address coverage, benefit or other plan specific issues. Applicable federal and state coverage mandates take precedence over these clinical guidelines, and in the case of reviews for Medicare Advantage Plans, the Guidelines are only applied where there are not fully established CMS criteria. If requested by a health plan, Carelon will review requests based on health plan medical policy/guidelines in lieu of the Carelon Guidelines. Pharmaceuticals, radiotracers, or medical devices used in any of the diagnostic or therapeutic interventions listed in the Guidelines must be FDA approved or conditionally approved for the intended use. However, use of an FDA approved or conditionally approved product does not constitute medical necessity or guarantee reimbursement by the respective health plan.

The Guidelines may also be used by the health plan or by Carelon for purposes of provider education, or to review the medical necessity of services by any provider who has been notified of the need for medical necessity review, due to billing practices or claims that are not consistent with other providers in terms of frequency or some other manner.

General Clinical Guideline

Clinical Appropriateness Framework

Critical to any finding of clinical appropriateness under the guidelines for a specific diagnostic or therapeutic intervention are the following elements:

- Prior to any intervention, it is essential that the clinician confirm the diagnosis or establish its pretest likelihood based on a complete evaluation of the patient. This includes a history and physical examination and, where applicable, a review of relevant laboratory studies, diagnostic testing, and response to prior therapeutic intervention.
- The anticipated benefit of the recommended intervention is likely to outweigh any potential harms, including from delay or decreased access to services that may result (net benefit).
- Widely used treatment guidelines and/or current clinical literature and/or standards of medical practice should support that the recommended intervention offers the greatest net benefit among competing alternatives.
- There exists a reasonable likelihood that the intervention will change management and/or lead to an improved outcome for the patient.

Providers may be required to submit clinical documentation in support of a request for services. Such documentation must a) accurately reflect the clinical situation at the time of the requested service, and b) sufficiently document the ordering provider's clinical intent.

If these elements are not established with respect to a given request, the determination of appropriateness will most likely require a peer-to-peer conversation to understand the individual and unique facts that would justify a finding of clinical appropriateness. During the peer-to-peer conversation, factors such as patient acuity and setting of service may also be taken into account to the extent permitted by law.

Simultaneous Ordering of Multiple Diagnostic or Therapeutic Interventions

Requests for multiple diagnostic or therapeutic interventions at the same time will often require a peer-to-peer conversation to understand the individual circumstances that support the medical necessity of performing all interventions simultaneously. This is based on the fact that appropriateness of additional intervention is often dependent on the outcome of the initial intervention.

Additionally, either of the following may apply:

- Current literature and/or standards of medical practice support that one of the requested diagnostic or therapeutic interventions is more appropriate in the clinical situation presented; or
- One of the diagnostic or therapeutic interventions requested is more likely to improve patient outcomes based on current literature and/or standards of medical practice.

Repeat Diagnostic Intervention

In general, repeated testing of the same anatomic location for the same indication should be limited to evaluation following an intervention, or when there is a change in clinical status such that additional testing is required to determine next steps in management. At times, it may be necessary to repeat a test using different techniques or protocols to clarify a finding or result of the original study.

Repeated testing for the same indication using the same or similar technology may be subject to additional review or require peer-to-peer conversation in the following scenarios:

- Repeated diagnostic testing at the same facility due to technical issues
- Repeated diagnostic testing requested at a different facility due to provider preference or quality concerns

- Repeated diagnostic testing of the same anatomic area based on persistent symptoms with no clinical change, treatment, or intervention since the previous study
- Repeated diagnostic testing of the same anatomic area by different providers for the same member over a short period of time

Repeat Therapeutic Intervention

In general, repeated therapeutic intervention in the same anatomic area is considered appropriate when the prior intervention proved effective or beneficial and the expected duration of relief has lapsed. A repeat intervention requested prior to the expected duration of relief is not appropriate unless it can be confirmed that the prior intervention was never administered. Requests for on-going services may depend on completion of previously authorized services in situations where a patient's response to authorized services is relevant to a determination of clinical appropriateness.

Cervical Decompression With or Without Fusion

Description and Scope

Cervical spine surgery is commonly performed for cervical radiculopathy or myelopathy. The goal of surgery is adequate decompression of the nerve roots and/or spinal cord and stabilization of the spine.

Cervical decompression may be performed with or without a fusion procedure and broadly divided into anterior, posterior, or combined surgical approach. The choice of procedure depends on several factors, including:

- Location of the compression
- Presence of deformity or instability
- Number of levels involved
- Patient age and surgical fitness

Laminoplasty is a related procedure for achieving decompression without the need for fusion and is frequently used to treat multilevel central stenosis or ossification of the posterior longitudinal ligament (OPLL).

This guideline addresses the following interventions when performed as **elective, non-emergent** procedures and not as part of the care of an acute or traumatic event.

- **Anterior cervical corpectomy and fusion (ACCF)** – for long anterior compression of the spinal cord from spondylosis, large disc extrusions, or ossification of the posterior longitudinal ligament
- **Anterior cervical discectomy/fusion/internal fixation (ACDF)** – decompression of the nerve roots or spinal cord by disc or osteophyte removal, with or without a fusion
- **Posterior cervical foraminotomy** – for nerve root decompression in cases of soft posterolateral disc herniation or bony foraminal stenosis
- **Posterior laminectomy with or without fusion** – for congenital stenosis, multilevel central stenosis from spondylosis, or multiple discontinuous levels where fusion is recommended to prevent kyphotic deformity. Note that a regional kyphosis (greater than 13 degrees) has been associated with unfavorable outcomes following posterior-only surgery
- **Posterior laminoplasty** – osteoplastic enlargement of the spinal canal (for example, by one sided laminectomy and hinge opening of the contralateral side)

Clinical Indications

The following general requirements apply to all indications except where they differ from the specific requirements. The specific requirements take precedence over any stated general requirement.

General Information

The terms in this section provide operational definitions when they are referenced as requirements in the guideline.

Documentation supporting medical necessity and a clearly stated plan of care should be submitted at the time of the request and must include the following components:

Conservative management[1] must include a combination of strategies to reduce inflammation, alleviate pain, and correct underlying dysfunction, including physical therapy **AND** at least **ONE** complementary conservative treatment strategy.

- **Physical therapy requirement** includes **ANY** of the following:
    - Physical therapy rendered by a qualified provider of physical therapy services

    - Supervised home treatment program that includes **ALL** of the following:
        - Participation in a patient-specific or tailored program
        - Initial active instruction by MD/DO/PT with redemonstration of patient ability to perform exercises
        - Compliance (documented or by clinician attestation on follow-up evaluation)
    - **Exception to the physical therapy requirement** in unusual circumstances (for instance, intractable pain so severe that physical therapy is not possible) when clearly documented in the medical record
- **Complementary conservative treatment requirement** includes **ANY** of the following:
    - Anti-inflammatory medications and analgesics[2]
    - Adjunctive medications such as nerve membrane stabilizers or muscle relaxants[2]
    - Epidural corticosteroid injection(s)[2]
    - Alternative therapies such as acupuncture, chiropractic manipulation, massage therapy, activity modification, and/or a trial period of rest (e.g., from the aggravating/contributing factors), where applicable

[1] Additional condition or procedure-specific requirements may apply and can be found in the respective sections of the guideline.

[2] In the absence of contraindications

Clinical reevaluation. In most cases, reevaluation should include a physical examination. Direct contact by other methods, such as telephone communication or electronic messaging, may substitute for in-person evaluation when circumstances preclude an office visit. Clinical reevaluation must be done in reasonable proximity to the anticipated date of service such that the patient's condition would be unlikely to change by the date of service.

Failure of conservative management requires **ALL** of the following:

- Patient has completed a full course of conservative management (as defined above) for the current episode of care
- Worsening of or no significant improvement in signs and/or symptoms upon clinical reevaluation
- More invasive forms of therapy are being considered

Documentation of compliance with a plan of therapy that includes elements from these areas is required where conservative management is appropriate. *The requirement for a period of conservative management as a prerequisite to a surgical procedure is waived when there is evidence of progressive nerve or spinal cord compression resulting in a significant neurologic deficit, or when myelopathy, weakness, or bladder disturbance is present.*

Reporting of symptom severity. Severity of pain and its associated impact on activities of daily living (ADLs) and instrumental ADLs (IADLs) are key factors in determining the need for intervention. For purposes of this guideline, significant pain and functional impairment refer to pain rated at least 3 out of 10 in intensity and associated with inability to perform at least two (2) ADLs and/or IADLs.

Imaging studies. All imaging must be performed and read by an independent radiologist. If discrepancies should arise in the interpretation of the imaging, the radiologist report will supersede. The results of all imaging studies should correlate with the clinical findings in support of the requested procedure.

Osteotomy. Spinal osteotomy procedures are reported when a portion or portions of the vertebral segment or segments is (are) cut and removed in preparation for realigning the spine as part of a spinal deformity correction. These procedures may be required for congenital, developmental, and degenerative spinal deformities.

Corpectomy typically reflects a longitudinal resection of the vertebral body from disc space to disc space often resulting in a destabilization of the complex. In the cervical spine, at least 50% of the vertebral body is removed. In the thoracic/lumbar spine, at least 30% of the corpus is removed.

General Recommendations

Tobacco cessation. Adherence to a tobacco cessation program resulting in abstinence from tobacco for at least 6 weeks prior to spinal surgery is strongly recommended to reduce the risk of pseudoarthrosis.

When there are patient-specific modifiable comorbidities that may adversely impact patient-reported outcomes or health status, a shared decision-making discussion that covers these modifiable comorbidities is strongly recommended and should be documented.

Cervical Decompression (Laminectomy, Laminotomy, Laminoplasty, Facetectomy, Foraminotomy, Discectomy)

Cervical decompression with or without fusion is considered medically necessary to treat ANY of the following conditions:

Instability

Instability of the cervical spine due to **ANY** of the following conditions, where instability is caused by the condition itself, or when treatment of the condition is anticipated to result in instability (i.e., resection or debridement):

- Tumor of the spine or spinal canal
- Infection (osteomyelitis, discitis, or spinal abscess)
- Fracture or dislocation (may be traumatic or pathologic)
- Nontraumatic atlantoaxial (C1-C2) instability or subluxation (greater than 5 mm as documented by imaging) in **ANY** of the following:
    - Connective tissue disorders such as rheumatoid arthritis
    - Down syndrome
    - Os odontoideum
    - Skeletal dysplasia
- Symptomatic, non-traumatic cervical spondylosis as demonstrated by **EITHER** of the following radiographic findings:
    - Sagittal plane angulation of greater than 11 degrees between adjacent segments
    - Subluxation or translation of greater than 3 mm on static lateral views or dynamic radiographs

Cervical radiculopathy

When imaging studies demonstrate nerve root compression due to herniated disc or spondylotic osteophyte correlating with the distribution of signs and symptoms, and **ANY** of the following criteria apply:

- Objective neurologic findings which correlate with a cervical nerve root impingement
- Progressive or severe neurologic deficits secondary to spinal cord or foraminal compression
- Unremitting radicular pain which has not responded to at least 6 weeks of appropriate conservative management (physical therapy optional)

Spondylotic cervical myelopathy

Spondylotic cervical myelopathy when **BOTH** of the following criteria are met:

- Clinical signs and symptoms of myelopathy which may include loss of dexterity, urinary urgency, new-onset bowel or bladder incontinence, frequent falls, hyperreflexia, Hoffmann sign, increased tone or spasticity, gait abnormality, or pathologic Babinski sign

- Imaging studies which demonstrate cervical cord compression

Ossification of the posterior longitudinal ligament

Ossification of the posterior longitudinal ligament (OPLL), with or without kyphosis, when **BOTH** of the following criteria are met:

- Clinical signs and symptoms of myelopathy which may include loss of dexterity, urinary urgency, new-onset bowel or bladder incontinence, frequent falls, hyperreflexia, Hoffmann sign, increased tone or spasticity, gait abnormality, or pathologic Babinski sign
- Imaging studies which demonstrate cervical cord compression

Cervical synovial cyst

Cervical synovial cyst when **BOTH** of the following criteria are met:

- Radicular pain (with or without demonstrable neurologic deficits) which has not responded to at least 6 weeks of conservative management
- Documentation of a synovial cyst on CT or MRI performed within the past 6 months which correlates with symptoms and exam findings

Degenerative cervical kyphosis

Degenerative cervical kyphosis when **ANY** of the following criteria are met:

- Clinical signs and symptoms of myelopathy which may include loss of dexterity, urinary urgency, new-onset bowel or bladder incontinence, frequent falls, hyperreflexia, Hoffmann sign, increased tone or spasticity, gait abnormality, or pathologic Babinski sign, **AND** imaging studies which demonstrate cervical cord compression
- Debilitating neck pain with documented functional limitations (e.g., NDI >35)
- Clinically significant problems with horizontal gaze, swallowing, or breathing

Pseudoarthrosis

Pseudoarthrosis when **ALL** of the following criteria are met:

- Advanced imaging studies highly suggestive of nonunion at a motion segment at which a fusion had been previously attempted. This includes lack of bridging bone and/or dynamic motion demonstrated on flexion-extension radiographs
- At least 6 months have elapsed since the prior procedure, unless there is evidence of hardware breakage or loosening
- The patient experienced significant relief of symptoms following the procedure
- Recurrent symptoms or functional impairment has not responded to at least 6 weeks of conservative management following confirmation of the diagnosis

Implant/Instrumentation failure

Implant/Instrumentation failure demonstrated on standard or advanced imaging showing malposition or other evidence of failure (e.g., subsidence, surrounding radiolucency, dislocation/subluxation, vertebral body fracture, or hardware breakage).

Failed cervical disc arthroplasty

For replacement or revision arthroplasty, see Cervical Disc Arthroplasty.

Cervical decompression and/or fusion is considered medically necessary at the index level after a prior cervical disc arthroplasty when **EITHER of the following criteria are met**:

- Evidence of implant/device failure is demonstrated on standard or advanced imaging showing malposition or other evidence of failure (e.g., subsidence, surrounding radiolucency, dislocation/subluxation, vertebral body fracture, or hardware breakage); **AND** Symptoms can be attributed to implant failure or other implant related mechanical complications
- Clinical symptoms persist or recur in the absence of implant failure; **AND** Criteria for cervical radiculopathy or myelopathy are met (as above)

Progressive neck pain or deformity

Progressive neck pain or deformity following prior posterior cervical decompressive laminectomy or laminoplasty

Cordotomy

Biopsy, excision, or evacuation and imaging suggests ANY of the following:

- Tumor or metastatic neoplasm
- Infectious process (for example, epidural abscess)
- Arteriovenous malformation
- Malignant or non-malignant mass

Multilevel spinal stenosis

Cervical laminectomy or laminoplasty is considered medically necessary for treatment of multilevel spinal stenosis of the cervical spine when **ALL** of the following criteria are met:

- Clinical signs and symptoms of myelopathy which may include loss of dexterity, urinary urgency, new-onset bowel or bladder incontinence, frequent falls, hyperreflexia, Hoffmann sign, increased tone or spasticity, gait abnormality, or pathologic Babinski sign
- Imaging studies which demonstrate cervical cord compression
- Neutral to lordotic cervical alignment with no greater than 13 degrees of kyphosis

Exclusions

Indications other than those addressed in this guideline are considered **not medically necessary** including, but not limited to, the following:

- Isolated neck pain and spinal stenosis without MRI evidence of intrinsic cord compression
- Asymptomatic spinal stenosis without MRI evidence of intrinsic cord compression
- Cervical/Thoracic laminectomy when criteria above are not met

References

1. Badhiwala JH, Platt A, Witiw CD, et al. Cervical disc arthroplasty versus anterior cervical discectomy and fusion: a meta-analysis of rates of adjacent-level surgery to 7-year follow-up. J Spine Surg. 2020;6(1):217-32.
2. Bono CM, Ghiselli G, Gilbert TJ, et al. An evidence-based clinical guideline for the diagnosis and treatment of cervical radiculopathy from degenerative disorders. Spine J. 2011;11(1):64-72.
3. Burkus JK, Dryer RF, Arnold PM, et al. Clinical and Radiographic Outcomes in Patients Undergoing Single-level Anterior Cervical Arthrodesis: A Prospective Trial Comparing Allograft to a Reduced Dose of rhBMP-2. Clin Spine Surg. 2017;30(9):E1321-E32.
4. Byvaltsev VA, Stepanov IA, Riew DK. Mid-Term to Long-Term Outcomes After Total Cervical Disk Arthroplasty Compared With Anterior Diskectomy and Fusion: A Systematic Review and Meta-analysis of Randomized Controlled Trials. Clin Spine Surg. 2020;33(5):192-200.

5. Cai S, Tian Y, Zhang J, et al. Efficacy and Safety of Total Disc Replacement with Anterior Cervical Discectomy and Fusion in the Treatment of Cervical Disease: A Meta-analysis. Spine (Phila Pa 1976). 2020;21:21.
6. Chang KE, Pham MH, Hsieh PC. Adjacent segment disease requiring reoperation in cervical total disc arthroplasty: A literature review and update. J Clin Neurosci. 2017;37:20-4.
7. Cheung ZB, Gidumal S, White S, et al. Comparison of Anterior Cervical Discectomy and Fusion With a Stand-Alone Interbody Cage Versus a Conventional Cage-Plate Technique: A Systematic Review and Meta-Analysis. Global spine j. 2019;9(4):446-55.
8. Coric D, Bullard DE, Patel VV, et al. Pulsed electromagnetic field stimulation may improve fusion rates in cervical arthrodesis in high-risk populations. Bone Joint Res. 2018;7(2):124-30.
9. Engquist M, Lofgren H, Oberg B, et al. Surgery versus nonsurgical treatment of cervical radiculopathy: a prospective, randomized study comparing surgery plus physiotherapy with physiotherapy alone with a 2-year follow-up. Spine (Phila Pa 1976). 2013;38(20):1715-22.
10. Engquist M, Lofgren H, Oberg B, et al. A 5- to 8-year randomized study on the treatment of cervical radiculopathy: anterior cervical decompression and fusion plus physiotherapy versus physiotherapy alone. J Neurosurg Spine. 2017;26(1):19-27.
11. Findlay C, Ayis S, Demetriades AK. Total disc replacement versus anterior cervical discectomy and fusion. Bone Joint J. 2018;100-B(8):991-1001.
12. Foley KT, Mroz TE, Arnold PM, et al. Randomized, prospective, and controlled clinical trial of pulsed electromagnetic field stimulation for cervical fusion. Spine J. 2008;8(3):436-42.
13. Gebremariam L, Koes BW, Peul WC, et al. Evaluation of treatment effectiveness for the herniated cervical disc: a systematic review. Spine (Phila Pa 1976). 2012;37(2):E109-18.
14. Goedmakers CMW, Janssen T, Yang X, et al. Cervical radiculopathy: is a prosthesis preferred over fusion surgery? A systematic review. Eur Spine J. 2019;22:22.
15. Gornet MF, Lanman TH, Burkus JK, et al. Two-level cervical disc arthroplasty versus anterior cervical discectomy and fusion: 10-year outcomes of a prospective, randomized investigational device exemption clinical trial. J Neurosurg Spine. 2019:1-11.
16. Hollyer MA, Gill EC, Ayis S, et al. The safety and efficacy of hybrid surgery for multilevel cervical degenerative disc disease versus anterior cervical discectomy and fusion or cervical disc arthroplasty: a systematic review and meta-analysis. Acta Neurochir (Wien). 2020;162(2):289-303.
17. Joaquim AF, Makhni MC, Riew KD. Evidence-based use of arthroplasty in cervical degenerative disc disease. Int Orthop. 2019;43(4):767-75.
18. Kadanka Z, Bednarik J, Novotny O, et al. Cervical spondylotic myelopathy: conservative versus surgical treatment after 10 years. Eur Spine J. 2011;20(9):1533-8.
19. Kelly MP, Eliasberg CD, Riley MS, et al. Reoperation and complications after anterior cervical discectomy and fusion and cervical disc arthroplasty: a study of 52,395 cases. Eur Spine J. 2018;27(6):1432-9.
20. Li Y, Shen H, Khan KZ, et al. Comparison of Multilevel Cervical Disc Replacement and Multilevel Anterior Discectomy and Fusion: A Systematic Review of Biomechanical and Clinical Evidence. World Neurosurg. 2018;116:94-104.
21. Li Z, Chen L, Li B, et al. Efficacy and Safety of Surgical Interventions for Treating Multilevel Cervical Spondylotic Myelopathy via Anterior Approach: A Network Meta-Analysis. Pain physician. 2019;22(4):E275-E86.
22. Lu H, Peng L. Efficacy and safety of Mobi-C cervical artificial disc versus anterior discectomy and fusion in patients with symptomatic degenerative disc disease: A meta-analysis. Medicine (Baltimore). 2017;96(49):e8504.
23. Lu VM, Mobbs RJ, Phan K. Clinical Outcomes of Treating Cervical Adjacent Segment Disease by Anterior Cervical Discectomy and Fusion Versus Total Disc Replacement: A Systematic Review and Meta-Analysis. Global spine j. 2019;9(5):559-67.
24. Luo J, Wang H, Peng J, et al. Rate of Adjacent Segment Degeneration of Cervical Disc Arthroplasty Versus Fusion Meta-Analysis of Randomized Controlled Trials. World Neurosurg. 2018;113:225-31.
25. Ma Z, Ma X, Yang H, et al. Anterior cervical discectomy and fusion versus cervical arthroplasty for the management of cervical spondylosis: a meta-analysis. Eur Spine J. 2017;26(4):998-1008.
26. McAfee PC, Reah C, Gilder K, et al. A meta-analysis of comparative outcomes following cervical arthroplasty or anterior cervical fusion: Results from 4 prospective multicenter randomized clinical trials and up to 1226 patients. Spine (Phila Pa 1976). 2012;37(11):943-52.
27. Montano N, Ricciardi L, Olivi A. Comparison of Anterior Cervical Decompression and Fusion versus Laminoplasty in the Treatment of Multilevel Cervical Spondylotic Myelopathy: A Meta-Analysis of Clinical and Radiological Outcomes. World Neurosurg. 2019;130:530-6.e2.
28. Peolsson A, Soderlund A, Engquist M, et al. Physical function outcome in cervical radiculopathy patients after physiotherapy alone compared with anterior surgery followed by physiotherapy: a prospective randomized study with a 2-year follow-up. Spine (Phila Pa 1976). 2013;38(4):300-7.
29. Radcliff K, Coric D, Albert T. Five-year clinical results of cervical total disc replacement compared with anterior discectomy and fusion for treatment of 2-level symptomatic degenerative disc disease: a prospective, randomized, controlled, multicenter investigational device exemption clinical trial. J Neurosurg Spine. 2016;25(2):213-24.

30. Sahai N, Changoor S, Dunn CJ, et al. Minimally Invasive Posterior Cervical Foraminotomy as an Alternative to Anterior Cervical Discectomy and Fusion for Unilateral Cervical Radiculopathy: A Systematic Review and Meta-analysis. Spine (Phila Pa 1976). 2019;44(24):1731-9.
31. Tan W, Zhou C, Guo D, et al. Treatment of Single-Level Cervical Spondylosis: Cervical Disk Arthroplasty Versus Anterior Cervical Decompression and Fusion. Orthopedics. 2017;40(1):e23-e34.
32. Tetreault L, Palubiski LM, Kryshtalskyj M, et al. Significant Predictors of Outcome Following Surgery for the Treatment of Degenerative Cervical Myelopathy: A Systematic Review of the Literature. Neurosurg Clin N Am. 2018;29(1):115-27.e35.
33. Upadhyayula PS, Yue JK, Curtis EI, et al. A matched cohort comparison of cervical disc arthroplasty versus anterior cervical discectomy and fusion: Evaluating perioperative outcomes. J Clin Neurosci. 2017;43:235-9.
34. Wang QL, Tu ZM, Hu P, et al. Long-term Results Comparing Cervical Disc Arthroplasty to Anterior Cervical Discectomy and Fusion: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. Orthop Surg. 2020;12(1):16-30.
35. Wu TK, Liu H, Ning N, et al. Cervical disc arthroplasty for the treatment of adjacent segment disease: A systematic review of clinical evidence. Clin Neurol Neurosurg. 2017;162:1-11.
36. Wu TK, Liu H, Wang BY, et al. Minimum four-year subsequent surgery rates of cervical disc replacement versus fusion: A meta-analysis of prospective randomized clinical trials. Orthop Traumatol Surg Res. 2017;103(1):45-51.
37. Wu TK, Wang BY, Meng Y, et al. Multilevel cervical disc replacement versus multilevel anterior discectomy and fusion: A meta-analysis. Medicine (Baltimore). 2017;96(16):e6503.
38. Xu P, Sun GD, Xun L, et al. Posterior decompression and fusion versus laminoplasty for cervical ossification of posterior longitudinal ligament: a systematic review and meta-analysis. Neurosurg Rev. 2020;13:13.
39. Xu S, Liang Y, Zhu Z, et al. Adjacent segment degeneration or disease after cervical total disc replacement: a meta-analysis of randomized controlled trials. J Orthop Surg Res. 2018;13(1):244.
40. Yoshii T, Egawa S, Chikuda H, et al. Comparison of anterior decompression with fusion and posterior decompression with fusion for cervical spondylotic myelopathy-A systematic review and meta-analysis. J Orthop Sci. 2020;30:30.
41. Youssef JA, Heiner AD, Montgomery JR, et al. Outcomes of posterior cervical fusion and decompression: a systematic review and meta-analysis. Spine J. 2019;19(10):1714-29.
42. Zhai S, Li A, Li X, et al. Total disc replacement compared with fusion for cervical degenerative disc disease: A systematic review of overlapping meta-analyses. Medicine (Baltimore). 2020;99(19):e20143.
43. Zhang J, Meng F, Ding Y, et al. Comprehensive Analysis of Hybrid Surgery and Anterior Cervical Discectomy and Fusion in Cervical Diseases: A Meta-Analysis. Medicine (Baltimore). 2020;99(5):e19055.
44. Zhang Y, Lv N, He F, et al. Comparison of cervical disc arthroplasty and anterior cervical discectomy and fusion for the treatment of cervical disc degenerative diseases on the basis of more than 60 months of follow-up: a systematic review and meta-analysis. BMC Neurol. 2020;20(1):143.
45. Zhang Y, Shao Y, Liu H, et al. Association between sagittal balance and adjacent segment degeneration in anterior cervical surgery: a systematic review and meta-analysis. BMC Musculoskelet Disord. 2019;20(1):430.
46. Zhao H, Duan LJ, Gao YS, et al. What is the superior surgical strategy for bi-level cervical spondylosis-anterior cervical disc replacement or anterior cervical decompression and fusion?: A meta-analysis from 11 studies. Medicine (Baltimore). 2018;97(13):e0005.
47. Zhong ZM, Zhu SY, Zhuang JS, et al. Reoperation After Cervical Disc Arthroplasty Versus Anterior Cervical Discectomy and Fusion: A Meta-analysis. Clin Orthop. 2016;474(5):1307-16.
48. Zhu RS, Kan SL, Cao ZG, et al. Secondary Surgery after Cervical Disc Arthroplasty versus Fusion for Cervical Degenerative Disc Disease: A Meta-analysis with Trial Sequential Analysis. Orthop Surg. 2018;10(3):181-91.
49. Zou S, Gao J, Xu B, et al. Anterior cervical discectomy and fusion (ACDF) versus cervical disc arthroplasty (CDA) for two contiguous levels cervical disc degenerative disease: a meta-analysis of randomized controlled trials. Eur Spine J. 2017;26(4):985-97.

Codes

The following code list is not meant to be all-inclusive. Authorization requirements will vary by health plan. Please consult the applicable health plan for guidance on specific procedure codes.

Medical necessity reviews are initiated by submitting the correct AMA CPT codes. Specific CPT codes for services should be used when available. The submitted codes must accurately identify the service or procedure to be performed. If no such code exists, contact the health plan directly and report the service or procedure using the appropriate unlisted procedure or Not Otherwise Classified (NOC) code (which often ends in 99). Do not submit a code that is “close to” the procedure performed in lieu of an unlisted code. Correct coding demands that

the code reported is appropriate for the service provided (i.e., a code that most accurately represents the service provided), and not a code that is similar but represents another service. (*CPT® Assistant,* December 2010) Nonspecific or NOC codes may be subject to additional documentation requirements and review.

CPT/HCPCS

0095T	Removal of total disc arthroplasty (artificial disc), anterior approach, each additional interspace, cervical (List separately in addition to code for primary procedure)
22210	Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; cervical
22216	Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; each additional vertebral segment (List separately in addition to primary procedure)
22220	Osteotomy of spine, including discectomy, anterior approach, single vertebral segment; cervical
22226	Osteotomy of spine, including discectomy, anterior approach, single vertebral segment; each additional vertebral segment (List separately in addition to code for primary procedure)
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, osteophytectomy and decompression of spinal cord and/or nerve roots; cervical below C2
22552	Arthrodesis, anterior interbody, including disc space preparation, discectomy, osteophytectomy and decompression of spinal cord and/or nerve roots; cervical below C2, each additional interspace (List separately in addition to code for separate 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
22614	Arthrodesis, posterior or posterolateral technique, single interspace; each additional interspace (List separately in addition to code for primary procedure)
22632	Arthrodesis, posterior interbody technique, including laminectomy and/or discectomy to prepare interspace (other than for decompression), 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; each additional interspace (List separately in addition to code for primary procedure)
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)
22864	Removal of total disc arthroplasty (artificial disc), anterior approach, single interspace; cervical
63001	Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (e.g., spinal stenosis), 1 or 2 vertebral segments; cervical
63003	Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (e.g., spinal stenosis), 1 or 2 vertebral segments; thoracic
63015	Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (e.g., spinal stenosis), more than 2 vertebral segments; cervical
63016	Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (e.g., spinal stenosis), more than 2 vertebral segments; thoracic
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
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)
63045	Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, cauda equina and/or nerve root[s], [e.g., spinal or lateral recess stenosis]), single vertebral segment; cervical
63046	Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, cauda equina and/or nerve root[s], [e.g., 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)
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 [e.g., wire, suture, mini-plates], when performed)
63055	Transpedicular approach with decompression of spinal cord, equina and/or nerve root(s) (eg, herniated intervertebral disc), single segment; thoracic
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)

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)
63185	Laminectomy with rhizotomy; 1 or 2 segments
63190	Laminectomy with rhizotomy; more than 2 segments
63191	Laminectomy with section of spinal accessory nerve
63194	Laminectomy with cordotomy, with section of 1 spinothalamic tract, 1 stage; cervical
63196	Laminectomy with cordotomy, with section of both spinothalamic tracts, 1 stage; cervical
63198	Laminectomy with cordotomy with section of both spinothalamic tracts, 2 stages within 14 days; cervical
63250	Laminectomy for excision or occlusion of arteriovenous malformation of spinal cord; cervical
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
63300	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; extradural, cervical
63304	Vertebral corpectomy (vertebral body resection), partial or complete, for excision of intraspinal lesion, single segment; intradural, cervical
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)

Cervical Disc Arthroplasty

Description and Scope

Cervical disc arthroplasty, also known as cervical artificial disc replacement, was developed as an alternative to cervical fusion for treatment of cervical radiculopathy due to severe degenerative disc disease.

For the appropriate indications, cervical disc arthroplasty has shown promising results in the available data, suggesting at least equivalence to cervical fusion following adequate decompression.

This guideline addresses cervical disc arthroplasty when performed as an **elective, non-emergent** procedure and not as part of the care of an acute or traumatic event.

Clinical Indications

The following general requirements apply to all indications except where they differ from the specific requirements. The specific requirements take precedence over any stated general requirement.

General Information

The terms in the section provide operational definitions when they are referenced as requirements in the guideline.

Documentation supporting medical necessity and a clearly stated plan of care should be submitted at the time of the request and must include the following components:

Conservative management[1] must include a combination of strategies to reduce inflammation, alleviate pain, and correct underlying dysfunction, including physical therapy **AND** at least **ONE** complementary conservative treatment strategy.

- **Physical therapy requirement** includes **ANY** of the following:
    - Physical therapy rendered by a qualified provider of physical therapy services
    - Supervised home treatment program that includes **ALL** of the following:
        - Participation in a patient-specific or tailored program
        - Initial active instruction by MD/DO/PT with redemonstration of patient ability to perform exercises
        - Compliance (documented or by clinician attestation on follow-up evaluation)
    - **Exception to the physical therapy requirement** in unusual circumstances (for instance, intractable pain so severe that physical therapy is not possible) when clearly documented in the medical record
- **Complementary conservative treatment requirement** includes **ANY** of the following:
    - Anti-inflammatory medications and analgesics[2]
    - Adjunctive medications such as nerve membrane stabilizers or muscle relaxants[2]
    - Epidural corticosteroid injection(s)[2]
    - Alternative therapies such as acupuncture, chiropractic manipulation, massage therapy, activity modification, and/or a trial period of rest (e.g., from the aggravating/contributing factors), where applicable

[1] Additional condition or procedure-specific requirements may apply and can be found in the respective sections of the guideline.

[2] In the absence of contraindications

Clinical reevaluation. In most cases, reevaluation should include a physical examination. Direct contact by other methods, such as telephone communication or electronic messaging, may substitute for in-person evaluation when circumstances preclude an office visit. Clinical reevaluation must be done in reasonable proximity to the anticipated date of service such that the patient's condition would be unlikely to change by the date of service.

Failure of conservative management requires **ALL** of the following:

- Patient has completed a full course of conservative management (as defined above) for the current episode of care
- Worsening of or no significant improvement in signs and/or symptoms upon clinical reevaluation
- More invasive forms of therapy are being considered

Documentation of compliance with a plan of therapy that includes elements from these areas is required where conservative management is appropriate. *The requirement for a period of conservative management as a prerequisite to a surgical procedure is waived when there is evidence of progressive nerve or spinal cord compression resulting in a significant neurologic deficit, or when myelopathy, weakness, or bladder disturbance is present.*

Reporting of symptom severity. Severity of pain and its associated impact on activities of daily living (ADLs) and instrumental ADLs (IADLs) are key factors in determining the need for intervention. For purposes of this guideline, significant pain and functional impairment refer to pain rated at least 3 out of 10 in intensity and associated with inability to perform at least two (2) ADLs and/or IADLs.

Imaging studies. All imaging must be performed and read by an independent radiologist. If discrepancies should arise in the interpretation of the imaging, the radiologist report will supersede. The results of all imaging studies should correlate with the clinical findings in support of the requested procedure.

General Recommendations

Tobacco cessation. Adherence to a tobacco cessation program resulting in abstinence from tobacco for at least 6 weeks prior to spinal surgery is strongly recommended to reduce the risk of pseudoarthrosis.

When there are patient-specific modifiable comorbidities that may adversely impact patient-reported outcomes or health status, a shared decision-making discussion that covers these modifiable comorbidities is strongly recommended and should be documented.

Cervical Disc Arthroplasty

Cervical disc arthroplasty is considered medically necessary for the following indications:

Radiculopathy

Radiculopathy related to nerve root compression caused by one or two-level degenerative disease between C3-C4 and C6-C7, with or without neck pain, when **ALL** of the following criteria are met:

- Objective neurologic findings which correlate with a cervical nerve root impingement, progressive or severe neurologic deficits secondary to spinal cord or foraminal compression, and/or unremitting radicular pain which has not responded to at least 6 weeks of appropriate conservative management (physical therapy optional)
- Imaging studies demonstrate nerve root compression due to herniated disc or spondylotic osteophyte correlating with the distribution of signs and symptoms
- The individual is skeletally mature as documented by growth plate closure
- An FDA-approved cervical artificial intervertebral device is used in accordance with FDA labeling and will be implanted using an anterior approach

Myelopathy or myeloradiculopathy

Myelopathy or myeloradiculopathy related to central spinal stenosis caused by one or two-level degenerative disease between C3-C4 and C6-C7, with or without neck pain, when **ALL** of the following criteria are met:

- Clinical signs and symptoms of myelopathy which may include loss of dexterity, urinary urgency, new-onset bowel or bladder incontinence, frequent falls, hyperreflexia, Hoffmann sign, increased tone or spasticity, gait abnormality, or pathologic Babinski sign
- Imaging studies demonstrate cervical cord compression due to herniated nucleus pulposus or osteophyte formation
- The individual is skeletally mature as documented by growth plate closure
- An FDA-approved cervical artificial intervertebral device is used in accordance with FDA labeling and will be implanted using an anterior approach

Failed cervical disc arthroplasty

For fusion, see Cervical Decompression.

Revision or replacement of a cervical artificial disc at the index level is considered medically necessary when **EITHER of the following criteria are met**:

- Evidence of implant/device failure is demonstrated on standard or advanced imaging showing malposition or other evidence of failure (e.g., subsidence, surrounding radiolucency, dislocation/subluxation, vertebral body fracture, or hardware breakage); **AND** Symptoms can be attributed to implant failure or other implant related mechanical complications
- Clinical symptoms persist or recur in the absence of implant failure; **AND** Criteria for cervical radiculopathy or myelopathy are met (as above)

Two-level Cervical Disc Arthroplasty

Two-level arthroplasty (simultaneous or subsequent to one previously performed)

Two-level cervical disc arthroplasty is considered medically necessary when performed at two (2) contiguous levels simultaneously or at a second contiguous level to a previously performed arthroplasty when the criteria are met for each disc level, and the device being utilized is FDA-approved for two (2) levels (e.g., Mobi-C®, Prestige LP™, and Simplify® Disc).

Contraindications

- Active systemic infection or infection localized to the site of implantation
- Osteoporosis defined as dual energy x-ray absorptiometry (DEXA) bone density measured T-score of negative 2.5 or lower
- Marked cervical instability on neutral resting lateral or flexion/extension radiographs with greater than or equal to 3 mm translation or greater than 11 degrees of angular difference to either adjacent level
- Clinically compromised vertebral bodies at the affected level due to current or past trauma, anatomic deformity, or cervical spine malignancy
- Focal kyphosis at the level of planned arthroplasty
- Moderate or severe spondylosis at the level to be treated, characterized by bridging osteophytes, loss of greater than 50% of normal disc height, or severely limited range of motion (i.e., less than 2 degrees) at the affected level
- Severe facet joint arthropathy

- Ossification of the posterior longitudinal ligament (OPLL)
- Sensitivity or allergy to implant materials

Exclusions

Indications other than those addressed in this guideline are considered **not medically necessary** including, but not limited to, the following:

- Cervical total disc arthroplasty at more than two (2) levels or at two (2) non-contiguous levels
- Cervical total disc arthroplasty in an individual with a previous fusion at another cervical level
- Hybrid constructs in a single procedure involving cervical fusion with cervical total disc arthroplasty
- Cervical disc arthroplasty at levels other than C3-C4 to C6-C7

References

1. Badhiwala JH, Platt A, Witiw CD, et al. Cervical disc arthroplasty versus anterior cervical discectomy and fusion: a meta-analysis of rates of adjacent-level surgery to 7-year follow-up. J Spine Surg. 2020;6(1):217-32.
2. Bono CM, Ghiselli G, Gilbert TJ, et al. An evidence-based clinical guideline for the diagnosis and treatment of cervical radiculopathy from degenerative disorders. Spine J. 2011;11(1):64-72.
3. Byvaltsev VA, Kalinin AA, Aliyev MA, et al. Treatment of the two-level degenerative cervical disk diseases based on algorithmic anterior approach: a multicenter prospective study. Neurosurg Rev. 2023;46(1):247.
4. Byvaltsev VA, Stepanov IA, Riew DK. Mid-Term to Long-Term Outcomes After Total Cervical Disk Arthroplasty Compared With Anterior Diskectomy and Fusion: A Systematic Review and Meta-analysis of Randomized Controlled Trials. Clin Spine Surg. 2020;33(5):192-200.
5. Cai S, Tian Y, Zhang J, et al. Efficacy and Safety of Total Disc Replacement with Anterior Cervical Discectomy and Fusion in the Treatment of Cervical Disease: A Meta-analysis. Spine (Phila Pa 1976). 2020;21:21.
6. Chang KE, Pham MH, Hsieh PC. Adjacent segment disease requiring reoperation in cervical total disc arthroplasty: A literature review and update. J Clin Neurosci. 2017;37:20-4.
7. Chen C, Zhang X, Ma X. Durability of cervical disc arthroplasties and its influence factors: A systematic review and a network meta-analysis. Medicine (Baltimore). 2017;96(6):e5947.
8. Findlay C, Ayis S, Demetriades AK. Total disc replacement versus anterior cervical discectomy and fusion. Bone Joint J. 2018;100-B(8):991-1001.
9. Gornet MF, Lanman TH, Burkus JK, et al. Two-level cervical disc arthroplasty versus anterior cervical discectomy and fusion: 10-year outcomes of a prospective, randomized investigational device exemption clinical trial. J Neurosurg Spine. 2019:1-11.
10. Gornet MF, Schranck FW, Sorensen KM, et al. Multilevel Cervical Disc Arthroplasty: Long-Term Outcomes at 3 and 4 Levels. Int J Spine Surg. 2020;14(s2):S41-S9.
11. Hollyer MA, Gill EC, Ayis S, et al. The safety and efficacy of hybrid surgery for multilevel cervical degenerative disc disease versus anterior cervical discectomy and fusion or cervical disc arthroplasty: a systematic review and meta-analysis. Acta Neurochir (Wien). 2020;162(2):289-303.
12. Joaquim AF, Lee NJ, Riew KD. Revision Surgeries at the Index Level After Cervical Disc Arthroplasty - A Systematic Review. Neurospine. 2021;18(1):34-44.
13. Joaquim AF, Makhni MC, Riew KD. Evidence-based use of arthroplasty in cervical degenerative disc disease. Int Orthop. 2019;43(4):767-75.
14. Kelly MP, Eliasberg CD, Riley MS, et al. Reoperation and complications after anterior cervical discectomy and fusion and cervical disc arthroplasty: a study of 52,395 cases. Eur Spine J. 2018;27(6):1432-9.
15. Latka D, Kozlowska K, Miekisiak G, et al. Safety and efficacy of cervical disc arthroplasty in preventing the adjacent segment disease: a meta-analysis of mid- to long-term outcomes in prospective, randomized, controlled multicenter studies. Ther Clin Risk Manag. 2019;15:531-9.
16. Li Y, Shen H, Khan KZ, et al. Comparison of Multilevel Cervical Disc Replacement and Multilevel Anterior Discectomy and Fusion: A Systematic Review of Biomechanical and Clinical Evidence. World Neurosurg. 2018;116:94-104.
17. Li Z, Chen L, Li B, et al. Efficacy and Safety of Surgical Interventions for Treating Multilevel Cervical Spondylotic Myelopathy via Anterior Approach: A Network Meta-Analysis. Pain physician. 2019;22(4):E275-E86.

18. Lu H, Peng L. Efficacy and safety of Mobi-C cervical artificial disc versus anterior discectomy and fusion in patients with symptomatic degenerative disc disease: A meta-analysis. Medicine (Baltimore). 2017;96(49):e8504.
19. Lu VM, Mobbs RJ, Phan K. Clinical Outcomes of Treating Cervical Adjacent Segment Disease by Anterior Cervical Discectomy and Fusion Versus Total Disc Replacement: A Systematic Review and Meta-Analysis. Global spine j. 2019;9(5):559-67.
20. Luo J, Wang H, Peng J, et al. Rate of Adjacent Segment Degeneration of Cervical Disc Arthroplasty Versus Fusion Meta-Analysis of Randomized Controlled Trials. World Neurosurg. 2018;113:225-31.
21. Ma Z, Ma X, Yang H, et al. Anterior cervical discectomy and fusion versus cervical arthroplasty for the management of cervical spondylosis: a meta-analysis. Eur Spine J. 2017;26(4):998-1008.
22. McAfee PC, Reah C, Gilder K, et al. A meta-analysis of comparative outcomes following cervical arthroplasty or anterior cervical fusion: Results from 4 prospective multicenter randomized clinical trials and up to 1226 patients. Spine (Phila Pa 1976). 2012;37(11):943-52.
23. Radcliff K, Coric D, Albert T. Five-year clinical results of cervical total disc replacement compared with anterior discectomy and fusion for treatment of 2-level symptomatic degenerative disc disease: a prospective, randomized, controlled, multicenter investigational device exemption clinical trial. J Neurosurg Spine. 2016;25(2):213-24.
24. Reinas R, Kitumba D, Pereira L, et al. Multilevel cervical arthroplasty-clinical and radiological outcomes. J Spine Surg. 2020;6(1):233-42.
25. Tan W, Zhou C, Guo D, et al. Treatment of Single-Level Cervical Spondylosis: Cervical Disk Arthroplasty Versus Anterior Cervical Decompression and Fusion. Orthopedics. 2017;40(1):e23-e34.
26. Tian P, Fu X, Li ZJ, et al. Hybrid surgery versus anterior cervical discectomy and fusion for multilevel cervical degenerative disc diseases: a meta-analysis. Sci. 2015;5:13454.
27. Upadhyayula PS, Yue JK, Curtis EI, et al. A matched cohort comparison of cervical disc arthroplasty versus anterior cervical discectomy and fusion: Evaluating perioperative outcomes. J Clin Neurosci. 2017;43:235-9.
28. Wahood W, Yolcu YU, Kerezoudis P, et al. Artificial Discs in Cervical Disc Replacement: A Meta-Analysis for Comparison of Long-Term Outcomes. World Neurosurg. 2020;134:598-613.e5.
29. Wang QL, Tu ZM, Hu P, et al. Long-term Results Comparing Cervical Disc Arthroplasty to Anterior Cervical Discectomy and Fusion: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. Orthop Surg. 2020;12(1):16-30.
30. Wu TK, Liu H, Ning N, et al. Cervical disc arthroplasty for the treatment of adjacent segment disease: A systematic review of clinical evidence. Clin Neurol Neurosurg. 2017;162:1-11.
31. Wu TK, Liu H, Wang BY, et al. Minimum four-year subsequent surgery rates of cervical disc replacement versus fusion: A meta-analysis of prospective randomized clinical trials. Orthop Traumatol Surg Res. 2017;103(1):45-51.
32. Wu TK, Wang BY, Meng Y, et al. Multilevel cervical disc replacement versus multilevel anterior discectomy and fusion: A meta-analysis. Medicine (Baltimore). 2017;96(16):e6503.
33. Xu S, Liang Y, Zhu Z, et al. Adjacent segment degeneration or disease after cervical total disc replacement: a meta-analysis of randomized controlled trials. J Orthop Surg Res. 2018;13(1):244.
34. Yang YD, Zhao H, Chai Y, et al. A comparison study between hybrid surgery and anterior cervical discectomy and fusion for the treatment of multilevel cervical spondylosis. Bone Joint J. 2020;102-B(8):981-96.
35. Zang L, Ma M, Hu J, et al. Comparison of Hybrid Surgery Incorporating Anterior Cervical Discectomy and Fusion and Artificial Arthroplasty versus Multilevel Fusion for Multilevel Cervical Spondylosis: A Meta-Analysis. Med Sci Monit. 2015;21:4057-67.
36. Zhai S, Li A, Li X, et al. Total disc replacement compared with fusion for cervical degenerative disc disease: A systematic review of overlapping meta-analyses. Medicine (Baltimore). 2020;99(19):e20143.
37. Zhang J, Meng F, Ding Y, et al. Comprehensive Analysis of Hybrid Surgery and Anterior Cervical Discectomy and Fusion in Cervical Diseases: A Meta-Analysis. Medicine (Baltimore). 2020;99(5):e19055.
38. Zhang Y, Lv N, He F, et al. Comparison of cervical disc arthroplasty and anterior cervical discectomy and fusion for the treatment of cervical disc degenerative diseases on the basis of more than 60 months of follow-up: a systematic review and meta-analysis. BMC Neurol. 2020;20(1):143.
39. Zhao H, Cheng L, Hou Y, et al. Multi-level cervical disc arthroplasty (CDA) versus single-level CDA for the treatment of cervical disc diseases: a meta-analysis. Eur Spine J. 2015;24(1):101-12.
40. Zhao H, Duan LJ, Gao YS, et al. What is the superior surgical strategy for bi-level cervical spondylosis-anterior cervical disc replacement or anterior cervical decompression and fusion?: A meta-analysis from 11 studies. Medicine (Baltimore). 2018;97(13):e0005.
41. Zhong ZM, Zhu SY, Zhuang JS, et al. Reoperation After Cervical Disc Arthroplasty Versus Anterior Cervical Discectomy and Fusion: A Meta-analysis. Clin Orthop. 2016;474(5):1307-16.
42. Zhu RS, Kan SL, Cao ZG, et al. Secondary Surgery after Cervical Disc Arthroplasty versus Fusion for Cervical Degenerative Disc Disease: A Meta-analysis with Trial Sequential Analysis. Orthop Surg. 2018;10(3):181-91.
43. Zou S, Gao J, Xu B, et al. Anterior cervical discectomy and fusion (ACDF) versus cervical disc arthroplasty (CDA) for two contiguous levels cervical disc degenerative disease: a meta-analysis of randomized controlled trials. Eur Spine J. 2017;26(4):985-97.

Codes

The following code list is not meant to be all-inclusive. Authorization requirements will vary by health plan. Please consult the applicable health plan for guidance on specific procedure codes.

Medical necessity reviews are initiated by submitting the correct AMA CPT codes. Specific CPT codes for services should be used when available. The submitted codes must accurately identify the service or procedure to be performed. If no such code exists, contact the health plan directly and report the service or procedure using the appropriate unlisted procedure or Not Otherwise Classified (NOC) code (which often ends in 99). Do not submit a code that is “close to” the procedure performed in lieu of an unlisted code. Correct coding demands that the code reported is appropriate for the service provided (i.e., a code that most accurately represents the service provided), and not a code that is similar but represents another service. (*CPT® Assistant,* December 2010) Nonspecific or NOC codes may be subject to additional documentation requirements and review.

CPT/HCPCS

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)
22856	Total disc arthroplasty (artificial disc), anterior approach, including discectomy with end plate preparation (includes osteophytectomy for nerve root or spinal cord decompression and microdissection); single interspace, cervical
22858	Total disc arthroplasty (artificial disc), anterior approach, including discectomy with end plate preparation (includes osteophytectomy for nerve root or spinal cord decompression and microdissection); second level, cervical (List separately in addition to code for primary procedure)
22861	Revision including replacement of total disc arthroplasty (artificial disc), anterior approach, single interspace; cervical
22864	Removal of total disc arthroplasty (artificial disc), anterior approach, single interspace; cervical

Lumbar Disc Arthroplasty

Description and Scope

Lumbar disc arthroplasty, also known as lumbar artificial disc surgery or total disc arthroplasty, was developed as an alternative to lumbar fusion for treatment of back pain due to severe degenerative disc disease.

The procedure is similar to lumbar interbody fusion in that an anterior approach is required. Unlike fusion, motion at the level of disc replacement is maintained, which would seem to be advantageous in terms of preventing secondary degenerative changes and preserving spine mechanics.

This guideline addresses lumbar disc arthroplasty when performed as an **elective, non-emergent** procedure and not as part of the care of an acute or traumatic event.

Clinical Indications

The following general requirements apply to all indications except where they differ from the specific requirements. The specific requirements take precedence over any stated general requirement.

General Information

The terms in the section provide operational definitions when they are referenced as requirements in the guideline.

Documentation supporting medical necessity and a clearly stated plan of care should be submitted at the time of the request and must include the following components:

Conservative management[1] must include a combination of strategies to reduce inflammation, alleviate pain, and correct underlying dysfunction, including physical therapy **AND** at least **ONE** complementary conservative treatment strategy.

- **Physical therapy requirement** includes **ANY** of the following:
    - Physical therapy rendered by a qualified provider of physical therapy services
    - Supervised home treatment program that includes **ALL** of the following:
        - Participation in a patient-specific or tailored program
        - Initial active instruction by MD/DO/PT with redemonstration of patient ability to perform exercises
        - Compliance (documented or by clinician attestation on follow-up evaluation)
    - **Exception to the physical therapy requirement** in unusual circumstances (for instance, intractable pain so severe that physical therapy is not possible) when clearly documented in the medical record
- **Complementary conservative treatment requirement** includes **ANY** of the following:
    - Anti-inflammatory medications and analgesics[2]
    - Adjunctive medications such as nerve membrane stabilizers or muscle relaxants[2]
    - Epidural corticosteroid injection(s)[2]
    - Alternative therapies such as acupuncture, chiropractic manipulation, massage therapy, activity modification, and/or a trial period of rest (e.g., from the aggravating/contributing factors), where applicable

[1] Additional condition or procedure-specific requirements may apply and can be found in the respective sections of the guideline.

[2] In the absence of contraindications

Clinical reevaluation. In most cases, reevaluation should include a physical examination. Direct contact by other methods, such as telephone communication or electronic messaging, may substitute for in-person evaluation when circumstances preclude an office visit. Clinical reevaluation must be done in reasonable proximity to the anticipated date of service such that the patient's condition would be unlikely to change by the date of service.

Failure of conservative management requires **ALL** of the following:

- Patient has completed a full course of conservative management (as defined above) for the current episode of care
- Worsening of or no significant improvement in signs and/or symptoms upon clinical reevaluation
- More invasive forms of therapy are being considered

Documentation of compliance with a plan of therapy that includes elements from these areas is required where conservative management is appropriate. *The requirement for a period of conservative management as a prerequisite to a surgical procedure is waived when there is evidence of progressive nerve or spinal cord compression resulting in a significant neurologic deficit, or when cauda equina syndrome or conus medullaris syndrome is present, and urgent intervention is indicated*.

Reporting of symptom severity. Severity of pain and its associated impact on activities of daily living (ADLs) and instrumental ADLs (IADLs) are key factors in determining the need for intervention. For purposes of this guideline, significant pain and functional impairment refer to pain rated at least 3 out of 10 in intensity and associated with inability to perform at least two (2) ADLs and/or IADLs.

Imaging studies. All imaging must be performed and read by an independent radiologist. If discrepancies should arise in the interpretation of the imaging, the radiologist report will supersede. The results of all imaging studies should correlate with the clinical findings in support of the requested procedure.

General Recommendations

Tobacco cessation. Adherence to a tobacco cessation program resulting in abstinence from tobacco for at least 6 weeks prior to spinal surgery is strongly recommended to reduce the risk of pseudoarthrosis.

When there are patient-specific modifiable comorbidities that may adversely impact patient-reported outcomes or health status, a shared decision-making discussion that covers these modifiable comorbidities is strongly recommended and should be documented.

Lumbar Disc Arthroplasty

Lumbar disc arthroplasty is considered medically necessary when ALL of the following criteria are met:

- Age between 18 and 60 years
- Primary complaint is axial pain determined to be of discogenic origin
- Symptoms present for at least 6 months, which have not responded to a multifaceted program of conservative management over that period of time
- Presence of single or dual (when using 2-level FDA-approved implant) level, advanced disc disease at L3-L4, L4-L5, or L5-SI, as documented by MRI and plain radiographs demonstrating moderate to severe degeneration of the disc with Modic changes (peridiscal bone signal above and below the disc space in question)
- At least moderate pain and disability ideally documented by a visual analog scale (VAS) pain score of 40 or higher (out of 100, or 4 out of 10) or with functional limitation of one or more IADL

- Any underlying psychiatric disorder, such as depression, should be diagnosed and the management optimized prior to surgical intervention
- Absence of symptomatic degenerative disc disease at all other lumbar levels, as documented by normal radiographs, and MRI showing no abnormalities or mild degenerative changes
- Use of an FDA-approved implant for the intended level

Contraindications

- Significant facet arthropathy at the index level
- Disease above L3-L4 or L4-L5 depending on FDA-approved levels
- Bony lumbar spinal stenosis
- Pars defect
- Prior fusion at intended level
- Poorly managed psychiatric disorder
- Chronic radiculopathy (unremitting pain with predominance of leg pain symptoms greater than back pain symptoms persisting a minimum of one year)
- Clinically compromised vertebral bodies at affected level due to current or past trauma
- Lytic spondylolisthesis or degenerative spondylolisthesis of grade greater than 1
- Allergy or sensitivity to implant materials (cobalt, chromium, molybdenum, polyethylene, titanium)
- Presence of infection or tumor
- Osteopenia or osteoporosis (defined as DEXA bone density measured T-score less than or equal to -1.0)

Exclusions

Indications other than those addressed in this guideline are considered not medically necessary including, but not limited to, the following:

- Disc replacement at more than one spinal level (unless FDA approved for more than one level, e.g., prodisc® L Total Disc Replacement)
- Prior lumbar fusion
- Isolated radicular compression syndromes, especially due to disc herniation
- Hybrid lumbar total disc arthroplasty/lumbar fusion (lumbar total disc arthroplasty at one level at the same time as lumbar fusion at a different level)
- Arthroplasty using devices other than those which are FDA approved, or use of an FDA-approved device in a manner which does not meet FDA requirements

References

1. Bai DY, Liang L, Zhang BB, et al. Total disc replacement versus fusion for lumbar degenerative diseases - a meta-analysis of randomized controlled trials. Medicine (Baltimore). 2019;98(29):e16460.
2. Ding F, Jia Z, Zhao Z, et al. Total disc replacement versus fusion for lumbar degenerative disc disease: a systematic review of overlapping meta-analyses. Eur Spine J. 2017;26(3):806-15.
3. Jacobs W, Van der Gaag NA, Tuschel A, et al. Total disc replacement for chronic back pain in the presence of disc degeneration. Cochrane Database Syst Rev. 2012(9):Cd008326.

4. Li YZ, Sun P, Chen D, et al. Artificial Total Disc Replacement Versus Fusion for Lumbar Degenerative Disc Disease: An Update Systematic Review and Meta-Analysis. Turk Neurosurg. 2020;30(1):1-10.
5. National Institute for Health and Care Excellence (NICE). Low back pain and sciatica in over 16s: assessment and management. London: National Institute for Health and Care Excellence (NICE); 2020 Dec 11.
6. Nie H, Chen G, Wang X, et al. Comparison of Total Disc Replacement with lumbar fusion: a meta-analysis of randomized controlled trials. J Coll Physicians Surg Pak. 2015;25(1):60-7.
7. Skold C, Tropp H, Berg S. Five-year follow-up of total disc replacement compared to fusion: a randomized controlled trial. Eur Spine J. 2013;22(10):2288-95.

Codes

The following code list is not meant to be all-inclusive. Authorization requirements will vary by health plan. Please consult the applicable health plan for guidance on specific procedure codes.

Medical necessity reviews are initiated by submitting the correct AMA CPT codes. Specific CPT codes for services should be used when available. The submitted codes must accurately identify the service or procedure to be performed. If no such code exists, contact the health plan directly and report the service or procedure using the appropriate unlisted procedure or Not Otherwise Classified (NOC) code (which often ends in 99). Do not submit a code that is "close to" the procedure performed in lieu of an unlisted code. Correct coding demands that the code reported is appropriate for the service provided (i.e., a code that most accurately represents the service provided), and not a code that is similar but represents another service. (*CPT® Assistant,* December 2010) Nonspecific or NOC codes may be subject to additional documentation requirements and review.

CPT/HCPCS

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)
22857	Total disc arthroplasty (artificial disc), anterior approach, including discectomy to prepare interspace (other than for decompression); single interspace, lumbar
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)
22862	Revision including replacement of total disc arthroplasty (artificial disc), anterior approach, single interspace; lumbar
22865	Removal of total disc arthroplasty (artificial disc), anterior approach,single interspace; lumbar

Lumbar Discectomy, Foraminotomy, and Laminotomy

Description and Scope

Lumbar decompression procedures, performed alone or in combination with spinal fusion, are designed to relieve symptoms of neural compression.

Lumbar discectomy involves removal of the disc, in whole or part. Foraminotomy and laminotomy involve removal of a portion of the lamina (bony arch) on the dorsal surface of a vertebra. These procedures are typically performed to access the disc space and relieve pressure on the nerve roots and spinal cord.

Endoscopic decompression is an alternative to an open procedure. The procedure involves endoscopic visualization and removal of lumbar disc herniation via transforaminal or interlaminar approach and endoscopic decompression of lumbar stenosis. It is distinguished from open or other forms of minimally invasive decompression in that the operative field is not visualized with the naked eye but rather through an endoscope projected onto a monitor.

This guideline addresses lumbar discectomy, foraminotomy, and laminotomy when performed as **elective, non-emergent** procedures and not as part of the care of an acute or traumatic event.

Clinical Indications

The following general requirements apply to all indications except where they differ from the specific requirements. The specific requirements take precedence over any stated general requirement.

General Information

The terms in the section provide operational definitions when they are referenced as requirements in the guideline.

Documentation supporting medical necessity and a clearly stated plan of care should be submitted at the time of the request and must include the following components:

Conservative management[1] must include a combination of strategies to reduce inflammation, alleviate pain, and correct underlying dysfunction, including physical therapy **AND** at least **ONE** complementary conservative treatment strategy.

- **Physical therapy requirement** includes **ANY** of the following:
    - Physical therapy rendered by a qualified provider of physical therapy services
    - Supervised home treatment program that includes **ALL** of the following:
        - Participation in a patient-specific or tailored program
        - Initial active instruction by MD/DO/PT with redemonstration of patient ability to perform exercises
        - Compliance (documented or by clinician attestation on follow-up evaluation)
    - **Exception to the physical therapy requirement** in unusual circumstances (for instance, intractable pain so severe that physical therapy is not possible) when clearly documented in the medical record
- **Complementary conservative treatment** requirement includes **ANY** of the following:
    - Anti-inflammatory medications and analgesics[2]
    - Adjunctive medications such as nerve membrane stabilizers or muscle relaxants[2]
    - Epidural corticosteroid injection(s)[2]

- Alternative therapies such as acupuncture, chiropractic manipulation, massage therapy, activity modification, and/or a trial period of rest (e.g., from the aggravating/contributing factors), where applicable

[1] Additional condition or procedure-specific requirements may apply and can be found in the respective sections of the guideline.

[2] In the absence of contraindications

Clinical reevaluation. In most cases, reevaluation should include a physical examination. Direct contact by other methods, such as telephone communication or electronic messaging, may substitute for in-person evaluation when circumstances preclude an office visit. Clinical reevaluation must be done in reasonable proximity to the anticipated date of service such that the patient's condition would be unlikely to change by the date of service.

Failure of conservative management requires **ALL** of the following:

- Patient has completed a full course of conservative management (as defined above) for the current episode of care
- Worsening of or no significant improvement in signs and/or symptoms upon clinical reevaluation
- More invasive forms of therapy are being considered

Documentation of compliance with a plan of therapy that includes elements from these areas is required where conservative management is appropriate. *The requirement for a period of conservative management as a prerequisite to a surgical procedure is waived when there is evidence of progressive nerve or spinal cord compression resulting in a significant neurologic deficit, or when cauda equina syndrome or conus medullaris syndrome is present, and urgent intervention is indicated*.

Reporting of symptom severity. Severity of pain and its associated impact on activities of daily living (ADLs) and instrumental ADLs (IADLs) are key factors in determining the need for intervention. For purposes of this guideline, significant pain and functional impairment refer to pain rated at least 3 out of 10 in intensity and associated with inability to perform at least two (2) ADLs and/or IADLs.

Imaging studies. All imaging must be performed and read by an independent radiologist. If discrepancies should arise in the interpretation of the imaging, the radiologist report will supersede. The results of all imaging studies should correlate with the clinical findings in support of the requested procedure.

Lumbar Discectomy, Foraminotomy, and Laminotomy

Lumbar discectomy, foraminotomy, and laminotomy are considered medically necessary to treat the following conditions:

Acute neurologic deterioration

Acute neurologic deterioration including signs and symptoms of cauda equina syndrome, or rapid progression of neurologic deficits confirmed by imaging, regardless of underlying pathology.

Lumbar disc herniation

Also see Lumbar disc herniation in the Lumbar Laminectomy guideline.

Initial disc herniation when ALL of the following criteria are met:

- **EITHER** of the following
  - Radicular pain (radiculitis/radiculopathy) with significant functional impairment or physical exam findings that correlate with radiculopathy or nerve root compression such as:
    - Nerve root tension sign
    - Dermatomal sensory loss
    - Motor strength deficit (myotomal)

        - Abnormal reflex changes
    - Progressive or severe neurologic deficits secondary to cauda equina, lateral recess or foraminal compression (conservative management requirement waived)

- Documentation of nerve root compression or thecal sac impingement on MRI or other advanced imaging performed within the past 6 months that correlates with clinical findings
- All other reasonable sources of pain have been ruled out
- Failure of at least 6 weeks of conservative management (Physical therapy optional)

Recurrent disc herniation when BOTH criteria are met:

- Requirements for initial herniation
- Failure of at least 6 weeks of conservative management

Exclusions

Indications other than those addressed in this guideline are considered **not medically necessary** including, but not limited to, the following:

- Axial low back pain without a neural component
- Disc bulge or herniation without nerve compression
- Asymptomatic disc herniation
- Spinal stenosis that is asymptomatic, or with symptoms limited to low back pain
- Use of an annular closure device (e.g., bone anchored annular closure device)

References

1. Alvi MA, Kerezoudis P, Wahood W, et al. Operative Approaches for Lumbar Disc Herniation: A Systematic Review and Multiple Treatment Meta-Analysis of Conventional and Minimally Invasive Surgeries. World Neurosurg. 2018;114:391-407.e2.
2. Ammerman J, Watters WC, Inzana JA, et al. Closing the Treatment Gap for Lumbar Disc Herniation Patients with Large Annular Defects: A Systematic Review of Techniques and Outcomes in this High-risk Population. Cureus. 2019;11(5):e4613.
3. Boote J, Newsome R, Reddington M, et al. Physiotherapy for Patients with Sciatica Awaiting Lumbar Micro-discectomy Surgery: A Nested, Qualitative Study of Patients' Views and Experiences. Physiother Res Int. 2017;22(3).
4. Choy WJ, Phan K, Diwan AD, et al. Annular closure device for disc herniation: meta-analysis of clinical outcome and complications. BMC Musculoskelet Disord. 2018;19(1):290.
5. Delitto A, Piva SR, Moore CG, et al. Surgery versus nonsurgical treatment of lumbar spinal stenosis: a randomized trial. Ann Intern Med. 2015;162(7):465-73.
6. Dhall SS, Choudhri TF, Eck JC, et al. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 5: correlation between radiographic outcome and function. J Neurosurg Spine. 2014;21(1):31-6.
7. Fritz JM, Lurie JD, Zhao W, et al. Associations between physical therapy and long-term outcomes for individuals with lumbar spinal stenosis in the SPORT study. Spine J. 2014;14(8):1611-21.
8. Ghogawala Z, Resnick DK, Watters WC, 3rd, et al. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 2: assessment of functional outcome following lumbar fusion. J Neurosurg Spine. 2014;21(1):7-13.
9. Joaquim AF, Botelho RV, Mudo ML, et al. Lumbar herniated disc - endoscopic discectomy treatment. Rev Assoc Med Bras. 2018;64(5):397-407.
10. Junjie L, Jiheng Y, Jun L, et al. Comparison of Unilateral Biportal Endoscopy Decompression and Microscopic Decompression Effectiveness in Lumbar Spinal Stenosis Treatment: A Systematic Review and Meta-analysis. Asian Spine J. 2023;17(2):418-30.
11. Kovacs FM, Urrutia G, Alarcon JD. Surgery versus conservative treatment for symptomatic lumbar spinal stenosis: a systematic review of randomized controlled trials. Spine (Phila Pa 1976). 2011;36(20):E1335-51.
12. Kurzbuch AR, Tuleasca C, Fournier JY. Lumbar discectomy with annulus fibrosus closure: A retrospective series of 53 consecutive patients. Neurochirurgie. 2022;68(4):393-7.

13. Lewis RA, Williams NH, Sutton AJ, et al. Comparative clinical effectiveness of management strategies for sciatica: systematic review and network meta-analyses. Spine J. 2015;15(6):1461-77.
14. Miller LE, Allen RT, Duhon B, et al. Expert review with meta-analysis of randomized and nonrandomized controlled studies of Barricaid annular closure in patients at high risk for lumbar disc reherniation. Expert Rev Med Devices. 2020;17(5):461-9.
15. Muthu S, Ramakrishnan E, Chellamuthu G. Is Endoscopic Discectomy the Next Gold Standard in the Management of Lumbar Disc Disease? Systematic Review and Superiority Analysis. Global spine j. 2021;11(7):1104-20.
16. National Institute for Health and Care Excellence (NICE). Low back pain and sciatica in over 16s: assessment and management. London: National Institute for Health and Care Excellence (NICE); 2020 Dec 11.
17. North American Spine Society (NASS). Evidence-based clinical guidelines for multidisciplinary spine care. Clinical guidelines for diagnosis and treatment of lumbar disc herniation with radiculopathy. 2012. Available at: https://www.spine.org/Portals/0/Assets/Downloads/ResearchClinicalCare/Guidelines/LumbarDiscHerniation.pdf. Accessed on December 19, 2023.
18. Nunley P, Strenge KB, Huntsman K, et al. Lumbar Discectomy With Bone-Anchored Annular Closure Device in Patients With Large Annular Defects: One-Year Results. Cureus. 2023;15(6):e40195.
19. Park SM, Lee HJ, Park HJ, et al. Biportal endoscopic versus microscopic discectomy for lumbar herniated disc: a randomized controlled trial. Spine J. 2023;23(1):18-26.
20. Qin R, Liu B, Hao J, et al. Percutaneous Endoscopic Lumbar Discectomy Versus Posterior Open Lumbar Microdiscectomy for the Treatment of Symptomatic Lumbar Disc Herniation: A Systemic Review and Meta-Analysis. World Neurosurg. 2018;120:352-62.
21. Rushton A, Zoulas K, Powell A, et al. Physical prognostic factors predicting outcome following lumbar discectomy surgery: systematic review and narrative synthesis. BMC Musculoskelet Disord. 2018;19(1):326.
22. Sayed D, Grider J, Strand N, et al. The American Society of Pain and Neuroscience (ASPN) Evidence-Based Clinical Guideline of Interventional Treatments for Low Back Pain. J Pain Res. 2022;15:3729-832.
23. Wang Y, He X, Chen S, et al. Annulus Fibrosus Repair for Lumbar Disc Herniation: A Meta-Analysis of Clinical Outcomes From Controlled Studies. Global spine j. 2023:21925682231169963.
24. Wang YP, Qin SL, Yang S, et al. Efficacy and safety of unilateral biportal endoscopy compared with microscopic decompression in the treatment of lumbar spinal stenosis: A systematic review and updated meta-analysis. Experimental Ther. 2023;26(1):309.
25. Xie X, Zhang G, Liu N. Clinical effect of unilateral biportal endoscopy in the treatment of lumbar diseases: a systematic review and meta-analysis. Wideochir. 2022;17(1):61-8.
26. Yang Z, Wang H, Li W, et al. Comparative Effects and Safety of Full-Endoscopic Versus Microscopic Spinal Decompression for Lumbar Spinal Stenosis: A Meta-Analysis and Statistical Power Analysis of 6 Randomized Controlled Trials. Neurospine. 2022;19(4):996-1005.
27. Zaina F, Tomkins-Lane C, Carragee E, et al. Surgical versus non-surgical treatment for lumbar spinal stenosis. Cochrane Database Syst Rev. 2016(1):Cd010264.
28. Zhang B, Liu S, Liu J, et al. Transforaminal endoscopic discectomy versus conventional microdiscectomy for lumbar discherniation: a systematic review and meta-analysis. J Orthop Surg (Hong Kong). 2018;13(1):169.
29. Zhang J, Gao Y, Zhao B, et al. Comparison of percutaneous transforaminal endoscopic discectomy and open lumbar discectomy for lumbar disc herniations: A systematic review and meta-analysis. Front Surg. 2022;9:984868.
30. Zhou H, Wang X, Chen Z, et al. Unilateral biportal endoscopy versus microscopic decompression in the treatment of lumbar spinal stenosis: A meta-analysis. Medicine (Baltimore). 2023;102(14):e32756.

Codes

The following code list is not meant to be all-inclusive. Authorization requirements will vary by health plan. Please consult the applicable health plan for guidance on specific procedure codes.

Medical necessity reviews are initiated by submitting the correct AMA CPT codes. Specific CPT codes for services should be used when available. The submitted codes must accurately identify the service or procedure to be performed. If no such code exists, contact the health plan directly and report the service or procedure using the appropriate unlisted procedure or Not Otherwise Classified (NOC) code (which often ends in 99). Do not submit a code that is “close to” the procedure performed in lieu of an unlisted code. Correct coding demands that the code reported is appropriate for the service provided (i.e., a code that most accurately represents the service provided), and not a code that is similar but represents another service. (*CPT® Assistant,* December 2010) Nonspecific or NOC codes may be subject to additional documentation requirements and review.

CPT/HCPCS

63030	Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; single interspace, lumbar
63035	Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; each additional interspace, cervical or lumbar (List separately in addition to code for primary procedure)
63042	Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc, reexploration, single interspace; lumbar
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)
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)
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
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

Lumbar Fusion and Treatment of Spinal Deformity (including Scoliosis and Kyphosis)

Description and Scope

Lumbar fusion is one of the most common spinal surgical procedures and a well-established treatment for spinal instability resulting from a variety of conditions. Most techniques utilize a bone graft to join two or more adjacent vertebral bodies into a single unit, which permanently immobilizes the involved section of the spine.

Techniques to achieve lumbar spinal fusion are numerous and include different surgical approaches (anterior, posterior, lateral) to the spine, different areas of fusion (intervertebral body [interbody], transverse process [posterolateral]), different fusion materials (bone graft and/or metal instrumentation), and a variety of ancillary techniques to augment fusion.

Lumbar fusion has been widely used to treat back pain associated with degenerative disc disease and spinal stenosis in the absence of instability. A large number of fusion operations are also performed for nonspecific low back pain which has not responded to standard treatment. Evidence to support the efficacy of fusion in treating these common conditions has been inconsistent, and many experts agree that the procedure is overused.

This guideline addresses lumbar and thoracolumbar fusion when performed as **elective, non-emergent** procedures and not as part of the care of an acute or traumatic event such as fracture (excluding periprosthetic fracture).

Clinical Indications

The following general requirements apply to all indications except where they differ from the specific requirements. The specific requirements take precedence over any stated general requirement.

General Information

Discography results will not be used as a determining factor of medical necessity for any requested procedures.

When fusion at more than one level is planned, the criteria below apply to each level of lumbar fusion being considered. These criteria also apply to lumbar fusion of a level adjacent to a prior lumbar fusion.

The standard of care for lumbar spinal fusion is a single session including multiple approach techniques. Multi-session fusions occur on different days or require an additional anesthesia session and are not typically performed unless for treatment of severe scoliosis or other spinal deformities.

The terms in the section provide operational definitions when they are referenced as requirements in the guideline.

Documentation supporting medical necessity and a clearly stated plan of care should be submitted at the time of the request and must include the following components:

Conservative management[1] must include a combination of strategies to reduce inflammation, alleviate pain, and correct underlying dysfunction, including physical therapy **AND** at least **ONE** complementary conservative treatment strategy.

- **Physical therapy requirement** includes **ANY** of the following:
    - Physical therapy rendered by a qualified provider of physical therapy services
    - Supervised home treatment program that includes **ALL** of the following:
        - Participation in a patient-specific or tailored program

        - Initial active instruction by MD/DO/PT with redemonstration of patient ability to perform exercises
        - Compliance (documented or by clinician attestation on follow-up evaluation)
    - **Exception to the physical therapy requirement** in unusual circumstances (for instance, intractable pain so severe that physical therapy is not possible) when clearly documented in the medical record
- **Complementary conservative treatment requirement** includes **ANY** of the following:
    - Anti-inflammatory medications and analgesics[2]
    - Adjunctive medications such as nerve membrane stabilizers or muscle relaxants[2]
    - Epidural corticosteroid injection(s)[2]
    - Alternative therapies such as acupuncture, chiropractic manipulation, massage therapy, activity modification, and/or a trial period of rest (e.g., from the aggravating/contributing factors), where applicable

[1] Additional condition or procedure-specific requirements may apply and can be found in the respective sections of the guideline.

[2] In the absence of contraindications

Clinical reevaluation. In most cases, reevaluation should include a physical examination. Direct contact by other methods, such as telephone communication or electronic messaging, may substitute for in-person evaluation when circumstances preclude an office visit. Clinical reevaluation must be done in reasonable proximity to the anticipated date of service such that the patient's condition would be unlikely to change by the date of service.

Failure of conservative management requires **ALL** of the following:

- Patient has completed a full course of conservative management (as defined above) for the current episode of care
- Worsening of or no significant improvement in signs and/or symptoms upon clinical reevaluation
- More invasive forms of therapy are being considered

Documentation of compliance with a plan of therapy that includes elements from these areas is required where conservative management is appropriate. *The requirement for a period of conservative management as a prerequisite to a surgical procedure is waived when there is evidence of progressive nerve or spinal cord compression resulting in a significant neurologic deficit, or when cauda equina syndrome or conus medullaris syndrome is present, and urgent intervention is indicated.*

Reporting of symptom severity. Severity of pain and its associated impact on activities of daily living (ADLs) and instrumental ADLs (IADLs) are key factors in determining the need for intervention. For purposes of this guideline, significant pain and functional impairment refer to pain rated at least 3 out of 10 in intensity and associated with inability to perform at least two (2) ADLs and/or IADLs.

Imaging studies. All imaging must be performed and read by an independent radiologist. If discrepancies should arise in the interpretation of the imaging, the radiologist report will supersede. The results of all imaging studies should correlate with the clinical findings in support of the requested procedure.

Osteotomy. Spinal osteotomy procedures are reported when a portion or portions of the vertebral segment or segments is (are) cut and removed in preparation for realigning the spine as part of a spinal deformity correction. These procedures may be required for congenital, developmental, and degenerative spinal deformities.

Corpectomy typically reflects a longitudinal resection of the vertebral body from disc space to disc space often resulting in a destabilization of the complex. In the cervical spine, at least 50% of the vertebral body is removed. In the thoracic/lumbar spine, at least 30% of the corpus is removed.

General Recommendations

Tobacco cessation. Adherence to a tobacco cessation program resulting in abstinence from tobacco for at least 6 weeks prior to spinal surgery is strongly recommended to reduce the risk of pseudoarthrosis.

When there are patient-specific modifiable comorbidities that may adversely impact patient-reported outcomes or health status, a shared decision-making discussion that covers these modifiable comorbidities is strongly recommended and should be documented.

Lumbar Fusion

Lumbar fusion with or without decompression is considered medically necessary to treat ANY of the following conditions:

Failed lumbar disc arthroplasty

Implant failure demonstrated on standard or advanced imaging showing malposition or other evidence of failure (e.g., subsidence, surrounding radiolucency, dislocation/subluxation, vertebral body fracture)

In the absence of imaging demonstrating implant failure, **ALL** of the following criteria are met:

- At least 6 months have elapsed since the most recent disc implant procedure, following which the patient experienced significant relief of symptoms
- Symptoms of radicular pain, neurogenic claudication, or worsening refractory back pain correlate with imaging findings of neural compression
- Impairment or loss of function has not responded to a minimum of 12 weeks of conservative management since the previous surgery

Flat back syndrome

Flat back syndrome (iatrogenic or degenerative) when **ALL** of the following criteria are met:

- Presence of intractable back pain, neurogenic claudication or neurological deficit
- Failure of 6 months of conservative management
- Decompensated sagittal imbalance demonstrated on standing radiography, defined as mismatch between pelvic incidence (PI) and lumbar lordosis (LL) of more than 10 degrees and sagittal vertical axis (SVA) greater than 5 cm

Implant/Instrumentation failure

Implant/Instrumentation failure demonstrated on standard or advanced imaging showing malposition or other evidence of failure (e.g., subsidence, surrounding radiolucency, dislocation/subluxation, vertebral body fracture, or hardware breakage)

Instability

Instability due to **ANY** of the following conditions, where instability is caused by the condition itself, or when treatment of the condition is anticipated to result in instability (i.e., resection or debridement)

- Tumor of the spine or spinal canal
- Infection (osteomyelitis, discitis, or spinal abscess)
- Fracture or dislocation; may be traumatic or pathologic
- Degenerative spondylolisthesis with flexion and extension lateral spine x-rays* showing a fixed anterolisthesis of greater than or equal to 3 mm, or movement of greater than or equal to 3 mm and symptoms or functional impairment have not responded to at least 6 weeks of conservative management.

**The medical record must document the surgeon's interpretation of office-based flexion-extension lateral spine x-rays to evaluate for the presence or absence of anterior-posterior lumbar instability. Verbal attestation will not be sufficient to meet the requirements.*

Isthmic spondylolisthesis

Isthmic spondylolisthesis when **ALL** of the following conditions are met:

- Congenital (Wiltse I) or acquired pars defect (Wiltse II) with flexion and extension lateral spine x-rays* showing a fixed anterolisthesis of greater than or equal to 3 mm, or movement of greater than or equal to 3 mm) documented on x-ray
- Failure of at least 3 months of conservative management
- **ANY** of the following:
    - Persistent back pain (with or without neurogenic symptoms) with functional impairment
    - Listhesis greater than 50% in children, 75% in mature adolescents or progressed by more than 30%
    - Progressive postural deformity or gait abnormality
    - Persistent functional impairment
    - Neurological symptoms

**The medical record must document the surgeon's interpretation of office-based flexion-extension lateral spine x-rays to evaluate for the presence or absence of anterior-posterior lumbar instability. Verbal attestation will not be sufficient to meet the requirements.*

Lumbar disc herniation

Recurrent, same level, disc herniation when **ALL** of the following are demonstrated:

- At least 3 months have elapsed since the prior procedure
- The patient experienced significant relief of symptoms following the procedure
- Recurrent symptoms or functional impairment have not responded to at least 12 weeks of conservative management
- Neural compression correlating with the clinical presentation and instability is demonstrated on imaging studies

Note: Fusion for same-level disc herniation without instability may be considered following two (2) prior discectomies at that level.

Lumbar synovial cyst

Lumbar synovial cyst when **BOTH** of the following criteria are met:

- Radicular pain (with or without demonstrable neurologic deficits) or neurogenic claudication which has not responded to at least 6 weeks of conservative management
- Documentation of a synovial cyst on CT or MRI performed within the past 6 months which correlates with symptoms and exam findings

Pseudoarthrosis

Pseudoarthrosis when **ALL** of the following criteria are met:

- Advanced imaging studies highly suggestive of nonunion at a motion segment at which a fusion had been previously attempted
- At least 6 months have elapsed since the prior procedure

- The patient experienced significant relief of symptoms following the procedure
- Recurrent symptoms or functional impairment has not responded to at least 12 weeks of conservative management following confirmation of the diagnosis

Scheuermann's kyphosis

Scheuermann's kyphosis (SK) when **ALL** of the following criteria are met:

- Diagnosis established by radiography or advanced imaging
    - Dorsal kyphosis with wedging of greater than 5 degrees of 3 successive vertebrae, with or without endplate irregularities and Schmorl's nodes
- Six (6) months of initial conservative management has failed to improve symptoms
- Thoracic kyphosis is greater than 60 degrees or thoracolumbar kyphosis is greater than 20 degrees
- **EITHER** of the following clinical considerations:
    - Intractable pain and/or loss of function assessed with a validated patient centered outcome measure
    - Deformity that affects quality of life

Scoliosis

Progressive adolescent idiopathic scoliosis when **EITHER** of the following is present:

- Skeletally immature: Cobb angle greater than 40 degrees (Thoracic, Thoracolumbar, Lumbar)
- Skeletally mature: Cobb angle greater than 50 degrees (Thoracic, Thoracolumbar, Lumbar)

Juvenile, neuromuscular, congenital scoliosis when **EITHER** of the following is present:

- Progressive deformity (e.g., greater than 10 degrees of change) that leads to sagittal or frontal plane imbalance
- Neurologic compromise

Severe degenerative scoliosis with a minimum Cobb angle of 30 degrees, or sagittal vertical axis greater than 5 cm, and **EITHER** of the following:

- Documented progression of deformity with persistent axial (non-radiating) pain and functional impairment, unresponsive to at least 3 months of conservative management
- Persistent and significant neurogenic symptoms (claudication or radicular pain) with functional impairment, unresponsive to at least 3 months of conservative management

Spinal stenosis

Lumbar fusion is considered medically necessary as an adjunct to decompression for treatment of spinal stenosis (central or foraminal) when **ANY of the following** (1-4) are present **AND ALL 3 additional criteria** are met:

1. Instability (anterolisthesis) is demonstrated on imaging studies*, or anticipated due to **EITHER** of the following:
    a. Facet joint excision greater than 50% bilaterally or 75% unilaterally at the level fused
    b. Resection of the pars interarticularis at the level fused
2. **Indirect decompression is planned with an anterior approach**** and provided the procedure is not being done solely for degenerative disc disease (discogenic or axial low back pain)
3. Adjacent-level stenosis, e.g., stenosis that has developed above or below a previous fusion
4. Recurrent stenosis, e.g., stenosis that has developed at a level previously operated

Additional criteria (**ALL** are required)

1. Neurogenic claudication or radicular pain with significant functional impairment
2. Failure to respond to at least 6 weeks of conservative management
3. Documentation of central/lateral recess/or foraminal stenosis on MRI, CT, or CT myelography performed within the past 6 months

**Instability may be demonstrated by flexion and extension lateral spine x-rays showing a fixed anterolisthesis of greater than or equal to 3 mm, or movement of greater than or equal to 3 mm. The medical record must document the surgeon's interpretation of office-based flexion-extension lateral spine x-rays to evaluate for the presence or absence of anterior-posterior lumbar instability. Verbal attestation will not be sufficient to meet the requirements.*

***The clinical evidence suggests anterior interbody fusion may be effective for indirect decompression of symptomatic foraminal stenosis. The efficacy of indirect decompression for lateral recess or severe central stenosis is uncertain. The presence of severe facet disease and hypertrophy, immobile facets, presence of osteophytes in the lateral recesses or foramen, calcified discs, and osteophytes arising from the posterior endplates are relative contraindications to an indirect decompression procedure. Proper patient selection is paramount for success. Despite careful patient selection a second stage posterior decompression may be medically necessary if complete relief is not obtained within 24-48 hours of the initial first stage procedure.*

Exclusions

Indications other than those addressed in this guideline are considered **not medically necessary** including, but not limited to, the following:

- Isolated axial low back pain, with or without imaging findings of degenerative disc disease, annular tears, disc bulges, protrusion, extrusion, or sequestration
- Chronic nonspecific low back pain
- Facet joint syndrome
- Degenerative lumbar spondylosis without stenosis or spondylolisthesis

Staged, multi-session* spinal fusions are considered **not medically necessary** for fusion involving fewer than three (3) levels, unless performed for treatment of severe scoliosis or other spinal deformities.

**Multi-session is defined as procedures occurring on different days or requiring an additional anesthesia session.*

References

1. Ajiboye RM, Drysch A, Mosich GM, et al. Surgical Treatment of Recurrent Lumbar Disk Herniation: A Systematic Review and Meta-analysis. Orthopedics. 2018;41(4):e457-e69.
2. Andrade NS, Flynn JP, Bartanusz V. Twenty-year perspective of randomized controlled trials for surgery of chronic nonspecific low back pain: citation bias and tangential knowledge. Spine J. 2013;13(11):1698-704.
3. Bai DY, Liang L, Zhang BB, et al. Total disc replacement versus fusion for lumbar degenerative diseases - a meta-analysis of randomized controlled trials. Medicine (Baltimore). 2019;98(29):e16460.
4. Bashir el F, Ajani O. Management of lumbar spine juxtafacet cysts. World Neurosurg. 2012;77(1):141-6.
5. Bhalla A, Schoenfeld AJ, George J, et al. The influence of subgroup diagnosis on radiographic and clinical outcomes after lumbar fusion for degenerative disc disorders revisited: a systematic review of the literature. Spine J. 2017;17(1):143-9.
6. Blumenthal C, Curran J, Benzel EC, et al. Radiographic predictors of delayed instability following decompression without fusion for degenerative grade I lumbar spondylolisthesis. J Neurosurg Spine. 2013;18(4):340-6.
7. Bydon M, De la Garza-Ramos R, Macki M, et al. Lumbar fusion versus nonoperative management for treatment of discogenic low back pain: a systematic review and meta-analysis of randomized controlled trials. J Spinal Disord Tech. 2014;27(5):297-304.
8. Chan AK, Sharma V, Robinson LC, et al. Summary of Guidelines for the Treatment of Lumbar Spondylolisthesis. Neurosurg Clin N Am. 2019;30(3):353-64.
9. Cho CB, Ryu KS, Park CK. Anterior lumbar interbody fusion with stand-alone interbody cage in treatment of lumbar intervertebral foraminal stenosis: comparative study of two different types of cages. J Korean Neurosurg Soc. 2010;47(5):352-7.

10. Chotivichit A, Ruangchainikom M, Tongdee T, et al. A Prospective Randomized Controlled Trial Comparing Posterolateral Lumbar Fusion With and Without Bone Marrow Concentrate Augmentation in Single-Level Lumbar Spondylolisthesis. J Med Assoc Thai. 2016;99(10):1073-9.
11. Choudhri TF, Mummaneni PV, Dhall SS, et al. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 4: radiographic assessment of fusion status. J Neurosurg Spine. 2014;21(1):23-30.
12. Christensen FB, Hansen ES, Eiskjaer SP, et al. Circumferential lumbar spinal fusion with Brantigan cage versus posterolateral fusion with titanium Cotrel-Dubousset instrumentation: a prospective, randomized clinical study of 146 patients. Spine (Phila Pa 1976). 2002;27(23):2674-83.
13. Dhall SS, Choudhri TF, Eck JC, et al. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 5: correlation between radiographic outcome and function. J Neurosurg Spine. 2014;21(1):31-6.
14. Dijkerman ML, Overdevest GM, Moojen WA, et al. Decompression with or without concomitant fusion in lumbar stenosis due to degenerative spondylolisthesis: a systematic review. Eur Spine J. 2018;27(7):1629-43.
15. Ding F, Jia Z, Zhao Z, et al. Total disc replacement versus fusion for lumbar degenerative disc disease: a systematic review of overlapping meta-analyses. Eur Spine J. 2017;26(3):806-15.
16. Drysch A, Ajiboye RM, Sharma A, et al. Effectiveness of Reoperations for Adjacent Segment Disease Following Lumbar Spinal Fusion. Orthopedics. 2018;41(2):e161-e7.
17. Fan Y, Zhu L. Decompression alone versus fusion and Coflex in the treatment of lumbar degenerative disease: A network meta-analysis. Medicine (Baltimore). 2020;99(11):e19457.
18. Feng JT, Yang XG, Wang F, et al. Efficacy and safety of bone substitutes in lumbar spinal fusion: a systematic review and network meta-analysis of randomized controlled trials. Eur Spine J. 2019;23:23.
19. Formica M, Quarto E, Zanirato A, et al. Lateral Lumbar Interbody Fusion: What Is the Evidence of Indirect Neural Decompression? A Systematic Review of the Literature. Hss J. 2020;16(2):143-54.
20. Forsth P, Olafsson G, Carlsson T, et al. A Randomized, Controlled Trial of Fusion Surgery for Lumbar Spinal Stenosis. N Engl J Med. 2016;374(15):1413-23.
21. Froholdt A, Holm I, Keller A, et al. No difference in long-term trunk muscle strength, cross-sectional area, and density in patients with chronic low back pain 7 to 11 years after lumbar fusion versus cognitive intervention and exercises. Spine J. 2011;11(8):718-25.
22. Froholdt A, Reikeraas O, Holm I, et al. No difference in 9-year outcome in CLBP patients randomized to lumbar fusion versus cognitive intervention and exercises. Eur Spine J. 2012;21(12):2531-8.
23. Ghogawala Z, Dziura J, Butler WE, et al. Laminectomy plus Fusion versus Laminectomy Alone for Lumbar Spondylolisthesis. N Engl J Med. 2016;374(15):1424-34.
24. Ghogawala Z, Resnick DK, Watters WC, 3rd, et al. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 2: assessment of functional outcome following lumbar fusion. J Neurosurg Spine. 2014;21(1):7-13.
25. Ghogawala Z, Whitmore RG, Watters WC, 3rd, et al. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 3: assessment of economic outcome. J Neurosurg Spine. 2014;21(1):14-22.
26. Giang G, Mobbs R, Phan S, et al. Evaluating Outcomes of Stand-Alone Anterior Lumbar Interbody Fusion: A Systematic Review. World Neurosurg. 2017;104:259-71.
27. Hoy K, Grycel B, Andersen T, et al. Does transforaminal lumbar interbody fusion produce leg pain?-Results from a RCT. J Orthop Surg (Hong Kong). 2019;27(3):2309499019869469.
28. Institute of Health Economics. Toward Optimized Practice. Guideline for the evidence-informed primary care management of low back pain. 2011:37.
29. International Society for the Advancement of Spine Surgery. ISASS Policy Statement – Lumbar Spinal Fusion, (2011) Aurora IL, 17 pgs.
30. Kaiser MG, Eck JC, Groff MW, et al. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 17: bone growth stimulators as an adjunct for lumbar fusion. J Neurosurg Spine. 2014;21(1):133-9.
31. Kirnaz S, Navarro-Ramirez R, Gu J, et al. Indirect Decompression Failure After Lateral Lumbar Interbody Fusion-Reported Failures and Predictive Factors: Systematic Review. Global spine j. 2020;10(2 Suppl):8S-16S.
32. Kreiner DS, Baisden J, Mazanec DJ, et al. Guideline summary review: an evidence-based clinical guideline for the diagnosis and treatment of adult isthmic spondylolisthesis. Spine J. 2016;16(12):1478-85.
33. 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;13(7):734-43.
34. Kunakornsawat S, Kirinpanu A, Piyaskulkaew C, et al. A comparative study of radiographic results using HEALOS collagen-hydroxyapatite sponge with bone marrow aspiration versus local bone graft in the same patients undergoing posterolateral lumbar fusion. J Med Assoc Thai. 2013;96(8):929-35.
35. Lang G, Perrech M, Navarro-Ramirez R, et al. Potential and Limitations of Neural Decompression in Extreme Lateral Interbody Fusion-A Systematic Review. World Neurosurg. 2017;101:99-113.

36. Lee JW, Kim HC, Kim SI, et al. Effects of bone cement augmentation for uppermost instrumented vertebra on adjacent segment degeneration in lumbar fusions. World Neurosurg. 2022;14:14.
37. Li Y, Wu Z, Guo D, et al. A comprehensive comparison of posterior lumbar interbody fusion versus posterolateral fusion for the treatment of isthmic and degenerative spondylolisthesis: A meta-analysis of prospective studies. Clin Neurol Neurosurg. 2020;188:105594.
38. Li YZ, Sun P, Chen D, et al. Artificial Total Disc Replacement Versus Fusion for Lumbar Degenerative Disc Disease: An Update Systematic Review and Meta-Analysis. Turk Neurosurg. 2020;30(1):1-10.
39. Liang HF, Liu SH, Chen ZX, et al. Decompression plus fusion versus decompression alone for degenerative lumbar spondylolisthesis: a systematic review and meta-analysis. Eur Spine J. 2017;26(12):3084-95.
40. Liu S, Wang Y, Liang Z, et al. Comparative Clinical Effectiveness and Safety of Bone Morphogenetic Protein Versus Autologous Iliac Crest Bone Graft in Lumbar Fusion: a meta-analysis and systematic review. Spine (Phila Pa 1976). 2020;09:09.
41. Lyons MK, Atkinson JL, Wharen RE, et al. Surgical evaluation and management of lumbar synovial cysts: the Mayo Clinic experience. J Neurosurg. 2000;93(1 Suppl):53-7.
42. Mannion AF, Brox JI, Fairbank JC. Comparison of spinal fusion and nonoperative treatment in patients with chronic low back pain: long-term follow-up of three randomized controlled trials. Spine J. 2013;13(11):1438-48.
43. Manzur MK, Samuel AM, Morse KW, et al. Indirect Lumbar Decompression Combined With or Without Additional Direct Posterior Decompression: A Systematic Review. Global spine j. 2021:21925682211013011.
44. Mariscal G, Nunez JH, Barrios C, et al. A meta-analysis of bone morphogenetic protein-2 versus iliac crest bone graft for the posterolateral fusion of the lumbar spine. J Bone Miner Metab. 2020;38(1):54-62.
45. National Institute for Health and Care Excellence (NICE). Low back pain and sciatica in over 16s: assessment and management. London: National Institute for Health and Care Excellence (NICE); 2020 Dec 11.
46. Nie H, Chen G, Wang X, et al. Comparison of Total Disc Replacement with lumbar fusion: a meta-analysis of randomized controlled trials. J Coll Physicians Surg Pak. 2015;25(1):60-7.
47. Onyia CU, Menon SK. The debate on most ideal technique for managing recurrent lumbar disc herniation: a short review. Br J Neurosurg. 2017;31(6):701-8.
48. Parajon A, Alimi M, Navarro-Ramirez R, et al. Minimally Invasive Transforaminal Lumbar Interbody Fusion: Meta-analysis of the Fusion Rates. What is the Optimal Graft Material? Neurosurgery. 2017;81(6):958-71.
49. Park DK, Roberts R, Arnold P, et al. Lumbar Spine Fusion Rates With Local Bone in Posterolateral and Combined Posterolateral and Interbody Approaches. J Am Acad Orthop Surg Glob Res Rev. 2019;3(11):e018.
50. Phan K, Nazareth A, Hussain AK, et al. Relationship between sagittal balance and adjacent segment disease in surgical treatment of degenerative lumbar spine disease: meta-analysis and implications for choice of fusion technique. Eur Spine J. 2018;27(8):1981-91.
51. Reitman CA, Cho CH, Bono CM, et al. Management of degenerative spondylolisthesis: development of appropriate use criteria. Spine J. 2021;21(8):1256-67.
52. Resnick DK, Watters WC, 3rd, Sharan A, et al. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 9: lumbar fusion for stenosis with spondylolisthesis. J Neurosurg Spine. 2014;21(1):54-61.
53. Shen J, Xu S, Xu S, et al. Fusion or Not for Degenerative Lumbar Spinal Stenosis: A Meta-Analysis and Systematic Review. Pain physician. 2018;21(1):1-8.
54. Siu KC, Stoodley MA. Decompressive laminectomy without fusion for lumbar facet joint cysts. J Clin Neurosci. 2018;58:113-6.
55. Strube P, Hoff E, Hartwig T, et al. Stand-alone anterior versus anteroposterior lumbar interbody single-level fusion after a mean follow-up of 41 months. J Spinal Disord Tech. 2012;25(7):362-9.
56. Tang L, Wu Y, Jing D, et al. A Bayesian network meta-analysis of 5 different fusion surgical procedures for the treatment of lumbar spondylolisthesis. Medicine (Baltimore). 2020;99(14):e19639.
57. Theologis AA, Burch S. Prevention of Acute Proximal Junctional Fractures After Long Thoracolumbar Posterior Fusions for Adult Spinal Deformity Using 2-level Cement Augmentation at the Upper Instrumented Vertebra and the Vertebra 1 Level Proximal to the Upper Instrumented Vertebra. Spine (Phila Pa 1976). 2015;40(19):1516-26.
58. Vanaclocha-Vanaclocha V, Herrera JM, Saiz-Sapena N, et al. High frequency of lumbar fusion in patients denied surgical treatment of the sacroiliac joint. Br J Neurosurg. 2019;33(1):12-6.
59. Wang X, Wanyan P, Tian JH, et al. Meta-analysis of randomized trials comparing fusion surgery to non-surgical treatment for discogenic chronic low back pain. J Back Musculoskeletal Rehabil. 2015;28(4):621-7.
60. Wilhelm M, Reiman M, Goode A, et al. Psychological Predictors of Outcomes with Lumbar Spinal Fusion: A Systematic Literature Review. Physiother Res Int. 2017;22(2).
61. Xu S, Wang J, Liang Y, et al. Decompression with fusion is not in superiority to decompression alone in lumbar stenosis based on randomized controlled trials: A PRISMA-compliant meta-analysis. Medicine (Baltimore). 2019;98(46):e17849.
62. Yavin D, Casha S, Wiebe S, et al. Lumbar Fusion for Degenerative Disease: A Systematic Review and Meta-Analysis. Neurosurgery. 2017;80(5):701-15.

63. Ye F, Zeng Z, Wang J, et al. Comparison of the use of rhBMP-7 versus iliac crest autograft in single-level lumbar fusion: a meta-analysis of randomized controlled trials. J Bone Miner Metab. 2018;36(1):119-27.

64. Zaina F, Tomkins-Lane C, Carragee E, et al. Surgical versus non-surgical treatment for lumbar spinal stenosis. Cochrane Database Syst Rev. 2016(1):Cd010264.

Codes

The following code list is not meant to be all-inclusive. Authorization requirements will vary by health plan. Please consult the applicable health plan for guidance on specific procedure codes.

Medical necessity reviews are initiated by submitting the correct AMA CPT codes. Specific CPT codes for services should be used when available. The submitted codes must accurately identify the service or procedure to be performed. If no such code exists, contact the health plan directly and report the service or procedure using the appropriate unlisted procedure or Not Otherwise Classified (NOC) code (which often ends in 99). Do not submit a code that is “close to” the procedure performed in lieu of an unlisted code. Correct coding demands that the code reported is appropriate for the service provided (i.e., a code that most accurately represents the service provided), and not a code that is similar but represents another service. (*CPT® Assistant,* December 2010) Nonspecific or NOC codes may be subject to additional documentation requirements and review.

CPT/HCPCS

0164T	Removal of total disc arthroplasty, (artificial disc), anterior approach, each additional interspace, lumbar (List separately in addition to code for primary procedure)
22206	Osteotomy of spine, posterior or posterolateral approach, 3 columns, 1 vertebral segment (e.g., pedicle/vertebral body subtraction); thoracic
22207	Osteotomy of spine, posterior or posterolateral approach, 3 columns, 1 vertebral segment (e.g., pedicle/vertebral body subtraction); lumbar
22208	Osteotomy of spine, posterior or posterolateral approach, 3 columns, 1 vertebral segment (e.g., pedicle/vertebral body subtraction); each additional vertebral segment (List separately in addition to code for primary procedure)
22212	Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; thoracic
22214	Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; lumbar
22216	Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; each additional vertebral segment (List separately in addition to primary procedure)
22222	Osteotomy of spine, including discectomy, anterior approach, single vertebral segment; thoracic
22224	Osteotomy of spine, including discectomy, anterior approach, single vertebral segment; lumbar
22226	Osteotomy of spine, including discectomy, anterior approach, single vertebral segment; each additional vertebral segment (List separately in addition to code for primary procedure)
22533	Arthrodesis, lateral extracavitary technique, including minimal discectomy to prepare interspace (other than for decompression); lumbar
22534	Arthrodesis, lateral extracavitary technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic or lumbar, each additional vertebral segment (List separately in addition to code for primary procedure)
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)
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, 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; 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
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
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)
22865	Removal of total disc arthroplasty (artificial disc), anterior approach, single interspace; lumbar

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)
63085	Vertebral corpectomy (vertebral body resection), partial or complete, transthoracic approach with decompression of spinal cord and/or nerve root(s); thoracic, single segment
63086	Vertebral corpectomy (vertebral body resection), partial or complete, transthoracic approach with decompression of spinal cord and/or nerve root(s); thoracic, each additional segment (List separately in addition to code for primary procedure)
63087	Vertebral corpectomy (vertebral body resection), partial or complete, combined thoracolumbar approach with decompression of spinal cord, cauda equina or nerve root(s), lower thoracic or lumbar; single segment
63088	Vertebral corpectomy (vertebral body resection), partial or complete, combined thoracolumbar approach with decompression of spinal cord, cauda equina or nerve root(s), lower thoracic or lumbar; each additional segment (List separately in addition to code for primary procedure)
63090	Vertebral corpectomy (vertebral body resection), partial or complete, transperitoneal or retroperitoneal approach with decompression of spinal cord, cauda equina or nerve root(s), lower thoracic, lumbar, or sacral; single segment
63091	Vertebral corpectomy (vertebral body resection), partial or complete, transperitoneal or retroperitoneal approach with decompression of spinal cord, cauda equina or nerve root(s), lower thoracic, lumbar, or sacral; each additional segment (List separately in addition to code for primary procedure)
63101	Vertebral corpectomy (vertebral body resection), partial or complete, lateral extracavitary approach with decompression of spinal cord and/or nerve root(s) (e.g., for tumor or retropulsed bone fragments); thoracic, single segment
63102	Vertebral corpectomy (vertebral body resection), partial or complete, lateral extracavitary approach with decompression of spinal cord and/or nerve root(s) (e.g., for tumor or retropulsed bone fragments); lumbar, single segment
63103	Vertebral corpectomy (vertebral body resection), partial or complete, lateral extracavitary approach with decompression of spinal cord and/or nerve root(s) (e.g., for tumor or retropulsed bone fragments); thoracic or lumbar, each additional segment (List separately in addition to code for primary procedure)
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
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)

Lumbar Laminectomy

Description and Scope

Lumbar decompression procedures, performed alone or in combination with spinal fusion, are designed to relieve symptoms of neural compression. Laminectomy is the most widely utilized and involves removal of a portion of the bony arch, or lamina, on the dorsal surface of a vertebra. Removal of the lamina on only one side of the bone is referred to as a hemilaminectomy. The most common indication for laminectomy is spinal stenosis, a chronic narrowing of the spinal canal due to degenerative arthritis and disc degeneration.

In addition to spinal fusion, it is not uncommon for a laminectomy to be performed in combination with other decompression procedures, including removal of the intervertebral disc (discectomy).

Endoscopic decompression is an alternative to an open procedure. The procedure involves endoscopic visualization and removal of lumbar disc herniation via transforaminal or interlaminar approach and endoscopic decompression of lumbar stenosis. It is distinguished from open or other forms of minimally invasive decompression in that the operative field is not visualized with the naked eye but rather through an endoscope projected onto a monitor.

This guideline addresses lumbar laminectomy when performed as an **elective, non-emergent** procedure and not as part of the care of an acute or traumatic event.

Clinical Indications

The following general requirements apply to all indications except where they differ from the specific requirements. The specific requirements take precedence over any stated general requirement.

General Information

The terms in the section provide operational definitions when they are referenced as requirements in the guideline.

Documentation supporting medical necessity and a clearly stated plan of care should be submitted at the time of the request and must include the following components:

Conservative management[1] must include a combination of strategies to reduce inflammation, alleviate pain, and correct underlying dysfunction, including physical therapy **AND** at least **ONE** complementary conservative treatment strategy.

- **Physical therapy requirement** includes **ANY** of the following:
    - Physical therapy rendered by a qualified provider of physical therapy services
    - Supervised home treatment program that includes **ALL** of the following:
        - Participation in a patient-specific or tailored program
        - Initial active instruction by MD/DO/PT with redemonstration of patient ability to perform exercises
        - Compliance (documented or by clinician attestation on follow-up evaluation)
    - **Exception to the physical therapy requirement** in unusual circumstances (for instance, intractable pain so severe that physical therapy is not possible) when clearly documented in the medical record
- **Complementary conservative treatment** requirement includes **ANY** of the following:
    - Anti-inflammatory medications and analgesics[2]

- Adjunctive medications such as nerve membrane stabilizers or muscle relaxants[2]
- Epidural corticosteroid injection(s) [2]
- Alternative therapies such as acupuncture, chiropractic manipulation, massage therapy, activity modification, and/or a trial period of rest (e.g., from the aggravating/contributing factors), where applicable

[1] Additional condition or procedure-specific requirements may apply and can be found in the respective sections of the guideline.

[2] In the absence of contraindications

Clinical reevaluation. In most cases, reevaluation should include a physical examination. Direct contact by other methods, such as telephone communication or electronic messaging, may substitute for in-person evaluation when circumstances preclude an office visit. Clinical reevaluation must be done in reasonable proximity to the anticipated date of service such that the patient's condition would be unlikely to change by the date of service.

Failure of conservative management requires **ALL** of the following:

- Patient has completed a full course of conservative management (as defined above) for the current episode of care
- Worsening of or no significant improvement in signs and/or symptoms upon clinical reevaluation
- More invasive forms of therapy are being considered

Documentation of compliance with a plan of therapy that includes elements from these areas is required where conservative management is appropriate. *The requirement for a period of conservative management as a prerequisite to a surgical procedure is waived when there is evidence of progressive nerve or spinal cord compression resulting in a significant neurologic deficit, or when cauda equina syndrome or conus medullaris syndrome is present, and urgent intervention is indicated.*

Reporting of symptom severity. Severity of pain and its associated impact on activities of daily living (ADLs) and instrumental ADLs (IADLs) are key factors in determining the need for intervention. For purposes of this guideline, significant pain and functional impairment refer to pain rated at least 3 out of 10 in intensity and associated with inability to perform at least two (2) ADLs and/or IADLs.

Imaging studies. All imaging must be performed and read by an independent radiologist. If discrepancies should arise in the interpretation of the imaging, the radiologist report will supersede. The results of all imaging studies should correlate with the clinical findings in support of the requested procedure.

Lumbar Laminectomy

Acute neurologic deterioration

Laminectomy is considered medically necessary for acute neurologic deterioration including signs and symptoms of cauda equina or conus medullaris syndrome, or rapid progression of neurologic deficits confirmed by imaging, regardless of underlying pathology.

Lumbar disc herniation

Also see Lumbar disc herniation in the Lumbar Discectomy, Foraminotomy, and Laminotomy guideline.

Laminectomy is considered medically necessary for lumbar disc herniation when **ALL** of the following criteria are met:

- Radicular pain (radiculitis/radiculopathy) with significant functional impairment and/or physical exam findings that correlate with radiculopathy or nerve root compression such as:
  - Nerve root tension sign
  - Dermatomal sensory loss

    - Motor strength deficit (myotomal)
    - Abnormal reflex changes
- Documentation of a central disc herniation in the spinal canal causing bilateral nerve root compression or thecal sac impingement on MRI or other advanced imaging performed within the past 9 months and that correlates with clinical findings
- Laminotomy increases the relative risk of iatrogenic neurological deficit
- All other reasonable sources of pain have been ruled out
- Failure of at least 6 weeks of conservative management

Lumbar spinal stenosis (with or without spondylolisthesis)

Laminectomy is considered medically necessary when **ALL** of the following criteria are met:

- Neurogenic claudication (symptoms aggravated by standing/walking and/or alleviated by sitting/forward flexion) or radicular pain (VAS at least 4) with significant functional impairment
- Failure to respond to at least 6 weeks of conservative management
- Documentation of central/lateral recess/or foraminal stenosis on MRI, CT, or CT myelography performed within the past 12 months

Lumbar synovial cyst

Lumbar synovial cyst removal is considered medically necessary when **ALL** of the following criteria are met:

- Radicular pain (with or without demonstrable neurologic deficits) or neurogenic claudication which has not responded to at least 6 weeks of conservative management
- Documentation of a synovial cyst on CT or MRI performed within the past 6 months which correlates with symptoms and exam findings

Dorsal rhizotomy

Dorsal rhizotomy is considered medically necessary as a treatment for spasticity (for example, cerebral palsy).

Tethered cord syndrome

Tethered cord syndrome (TCS) is a group of motor and sensory signs and symptoms related to a disorder of the conus medullaris, usually the result of direct mechanical traction on the conus. Tethered cord syndrome can be primary or secondary.

Untethering of the caudal spinal cord is considered medically necessary (see relative contraindications* and exclusions**) when the patient has **ANY** of the following:

- Primary TCS – positive imaging and progressive neurogenic bladder (demonstrated by urodynamic studies), and **ANY** of the following:
    - New onset or progressive lower extremity weakness and/or gait changes
    - Unexplained and persistent new onset back pain of at least 6 weeks duration
    - Progressive scoliosis with Cobbs angle greater than 40 degrees
- A dermal sinus tract and tethered cord on MRI
- Normal positioning of the conus, i.e., occult tethered cord syndrome (OTCS), if they have unexplained urinary incontinence, as well as abnormal and deteriorating urodynamic studies (UDS)

***Relative contraindications for TCS**

- Unstable medical condition that would put the patient a risk for anesthesia or surgery

- Asymptomatic patients with a complex pathology, such as chaotic lipomas and anterior sacral meningoceles, can be observed and the surgery deferred until early symptoms and signs appear

****Exclusions for TCS**

- Prophylactic surgery in asymptomatic patients (i.e., patients with no signs or symptoms despite a low conus medullaris, or a normally positioned conus and a fatty filum on imaging)
- Low back pain as the only criteria, without urinary symptoms and with normal imaging and normal urodynamic studies

Biopsy, excision, or evacuation when imaging suggests ANY of the following:

- Tumor or metastatic neoplasm
- Infectious process (for example, epidural abscess)
- Arteriovenous malformation
- Malignant or non-malignant mass

Exclusions

Indications other than those addressed in this guideline are considered **not medically necessary** including, but not limited to, the following:

- Axial low back pain without a neural component
- Disc bulge or herniation without nerve compression
- Spinal stenosis that is asymptomatic, or with symptoms limited to low back pain
- Annular tears
- Tethered cord syndrome (see above)

References

1. Bashir el F, Ajani O. Management of lumbar spine juxtafacet cysts. World Neurosurg. 2012;77(1):141-6.
2. Blumenthal C, Curran J, Benzel EC, et al. Radiographic predictors of delayed instability following decompression without fusion for degenerative grade I lumbar spondylolisthesis. J Neurosurg Spine. 2013;18(4):340-6.
3. Chan AK, Sharma V, Robinson LC, et al. Summary of Guidelines for the Treatment of Lumbar Spondylolisthesis. Neurosurg Clin N Am. 2019;30(3):353-64.
4. Chotivichit A, Ruangchainikom M, Tongdee T, et al. A Prospective Randomized Controlled Trial Comparing Posterolateral Lumbar Fusion With and Without Bone Marrow Concentrate Augmentation in Single-Level Lumbar Spondylolisthesis. J Med Assoc Thai. 2016;99(10):1073-9.
5. Delitto A, Piva SR, Moore CG, et al. Surgery versus nonsurgical treatment of lumbar spinal stenosis: a randomized trial. Ann Intern Med. 2015;162(7):465-73.
6. Dhall SS, Choudhri TF, Eck JC, et al. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 5: correlation between radiographic outcome and function. J Neurosurg Spine. 2014;21(1):31-6.
7. Epstein NE. Lumbar laminectomy for the resection of synovial cysts and coexisting lumbar spinal stenosis or degenerative spondylolisthesis: an outcome study. Spine (Phila Pa 1976). 2004;29(9):1049-55; discussion 56.
8. Fraser JF, Huang RC, Girardi FP, et al. Pathogenesis, presentation, and treatment of lumbar spinal stenosis associated with coronal or sagittal spinal deformities. Neurosurg Focus. 2003;14(1):e6.
9. Fritz JM, Lurie JD, Zhao W, et al. Associations between physical therapy and long-term outcomes for individuals with lumbar spinal stenosis in the SPORT study. Spine J. 2014;14(8):1611-21.

10. Ghogawala Z, Dziura J, Butler WE, et al. Laminectomy plus Fusion versus Laminectomy Alone for Lumbar Spondylolisthesis. N Engl J Med. 2016;374(15):1424-34.
11. Ghogawala Z, Resnick DK, Watters WC, 3rd, et al. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 2: assessment of functional outcome following lumbar fusion. J Neurosurg Spine. 2014;21(1):7-13.
12. Guha D, Heary RF, Shamji MF. Iatrogenic spondylolisthesis following laminectomy for degenerative lumbar stenosis: systematic review and current concepts. Neurosurgical focus. 2015;39(4):E9.
13. Kaiser MG, Eck JC, Groff MW, et al. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 17: bone growth stimulators as an adjunct for lumbar fusion. J Neurosurg Spine. 2014;21(1):133-9.
14. Kovacs FM, Urrutia G, Alarcon JD. Surgery versus conservative treatment for symptomatic lumbar spinal stenosis: a systematic review of randomized controlled trials. Spine (Phila Pa 1976). 2011;36(20):E1335-51.
15. Lewis RA, Williams NH, Sutton AJ, et al. Comparative clinical effectiveness of management strategies for sciatica: systematic review and network meta-analyses. Spine J. 2015;15(6):1461-77.
16. Lyons MK, Atkinson JL, Wharen RE, et al. Surgical evaluation and management of lumbar synovial cysts: the Mayo Clinic experience. J Neurosurg. 2000;93(1 Suppl):53-7.
17. National Institute for Health and Care Excellence (NICE). Low back pain and sciatica in over 16s: assessment and management. London: National Institute for Health and Care Excellence (NICE); 2020 Dec 11.
18. Siu KC, Stoodley MA. Decompressive laminectomy without fusion for lumbar facet joint cysts. J Clin Neurosci. 2018;58:113-6.
19. Zaina F, Tomkins-Lane C, Carragee E, et al. Surgical versus non-surgical treatment for lumbar spinal stenosis. Cochrane Database Syst Rev. 2016(1):Cd010264.

Codes

The following code list is not meant to be all-inclusive. Authorization requirements will vary by health plan. Please consult the applicable health plan for guidance on specific procedure codes.

Medical necessity reviews are initiated by submitting the correct AMA CPT codes. Specific CPT codes for services should be used when available. The submitted codes must accurately identify the service or procedure to be performed. If no such code exists, contact the health plan directly and report the service or procedure using the appropriate unlisted procedure or Not Otherwise Classified (NOC) code (which often ends in 99). Do not submit a code that is “close to” the procedure performed in lieu of an unlisted code. Correct coding demands that the code reported is appropriate for the service provided (i.e., a code that most accurately represents the service provided), and not a code that is similar but represents another service. (*CPT® Assistant,* December 2010) Nonspecific or NOC codes may be subject to additional documentation requirements and review.

CPT/HCPCS

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
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
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)
63185	Laminectomy with rhizotomy; 1 or 2 segments
63190	Laminectomy with rhizotomy; more than 2 segments
63200	Laminectomy, with release of tethered spinal cord, lumbar
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
63272	Laminectomy for excision of intraspinal lesion other than neoplasm, intradural; lumbar
63277	Laminectomy for biopsy/excision of intraspinal neoplasm; extradural, lumbar
63282	Laminectomy for biopsy/excision of intraspinal neoplasm; intradural, extramedullary, lumbar
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
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

Noninvasive Electrical Bone Growth Stimulation

Description

Bone growth stimulators, also known as osteogenesis stimulators, are utilized to promote bone healing in spinal fusion through delivery of electrical current to the fusion site. Noninvasive devices are worn externally, beginning at any time from the date of surgery until up to 6 months after surgery.

Clinical Indications

Thoracic or Lumbar Fusion

Noninvasive electrical stimulation of the spine to augment primary thoracic or lumbar spinal fusion is considered medically necessary in individuals at high risk for pseudoarthrosis in **ANY** of the following scenarios:

- Fusion revision (e.g., repeat surgery due to prior unhealed fusion attempt) when at least 6 months have passed since the original surgery and imaging studies confirm that healing has not progressed in the preceding 3 months
- Fusion performed at two (2) or more adjacent levels*

  **Defined as 2 or more motion segments (3 vertebrae); alternatively, one level includes the upper and lower vertebral segment and the intervening disc space, e.g., L4-L5 is one level.*
- Presence of **ANY** of the following risk factors:
  - Diabetes
  - Metabolic bone disease (including osteoporosis, osteopenia, and bone disease secondary to renal disease, nutritional deficiency, or conditions in which bone healing is likely to be compromised
  - Immunocompromised
  - Systemic vascular disease
  - History of long-term use of corticosteroids
  - Active nicotine use

Cervical Fusion

Noninvasive electrical stimulation of the spine to augment spinal fusion in all regions of the cervical spine is considered medically necessary in individuals at high risk for pseudoarthrosis in **ANY** of the following scenarios:

- Fusion revision (e.g., repeat surgery due to prior unhealed fusion attempt) when at least 6 months has passed since the original surgery and imaging studies confirm that healing has not progressed in the preceding 3 months
- Fusion performed at three (3) or more adjacent levels** for cervical fusion when **ANY** of the following risk factors are present:
  - Diabetes
  - Osteoporosis
  - Active nicotine use

  ***Defined as 3 or more motion segments (4 vertebrae)*

Exclusions

Indications other than those addressed in this guideline are considered **not medically necessary** including, but not limited to, the following:

- Treatment of spondylolysis or pars interarticularis defect
- Semi-invasive electrical bone growth stimulation for any indication
- As an adjunct for primary bone healing of a spinal fracture
- As a nonsurgical treatment of an established pseudoarthrosis

References

1. Coric D, Bullard DE, Patel VV, et al. Pulsed electromagnetic field stimulation may improve fusion rates in cervical arthrodesis in high-risk populations. Bone Joint Res. 2018;7(2):124-30.
2. Foley KT, Mroz TE, Arnold PM, et al. Randomized, prospective, and controlled clinical trial of pulsed electromagnetic field stimulation for cervical fusion. Spine J. 2008;8(3):436-42.
3. Kaiser MG, Eck JC, Groff MW, et al. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 17: bone growth stimulators as an adjunct for lumbar fusion. J Neurosurg Spine. 2014;21(1):133-9.

Codes

The following code list is not meant to be all-inclusive. Authorization requirements will vary by health plan. Please consult the applicable health plan for guidance on specific procedure codes.

Medical necessity reviews are initiated by submitting the correct AMA CPT codes. Specific CPT codes for services should be used when available. The submitted codes must accurately identify the service or procedure to be performed. If no such code exists, contact the health plan directly and report the service or procedure using the appropriate unlisted procedure or Not Otherwise Classified (NOC) code (which often ends in 99). Do not submit a code that is “close to” the procedure performed in lieu of an unlisted code. Correct coding demands that the code reported is appropriate for the service provided (i.e., a code that most accurately represents the service provided), and not a code that is similar but represents another service. (*CPT® Assistant,* December 2010) Nonspecific or NOC codes may be subject to additional documentation requirements and review.

CPT/HCPCS

20974	Electrical stimulation to aid bone healing; noninvasive (nonoperative)
E0748	Osteogenesis stimulator, electrical, non-invasive, spinal applications

Vertebroplasty/Kyphoplasty

Description

Vertebral augmentation procedures have been developed as a treatment option for debilitating pain due to bony destruction of the vertebral body. These are interventional techniques in which bone cement is injected via percutaneous insertion of a needle into the vertebral body under image guidance. The most commonly utilized material is polymethylmethacrylate (PMMA).

Vertebroplasty involves direct injection of material into the bone to stabilize an area of collapse, while kyphoplasty utilizes inflatable bone tamps to create a cavity, thus reducing the fracture and creating a space into which material is then injected.

The objective in both procedures is to alleviate pain and strengthen bone. Their efficacy has been well established for treatment of pain related to malignant lytic bone lesions. The evidence regarding their use in treating pain due to osteoporotic fractures and other bone pathology is less compelling.

Clinical Indications

Percutaneous Vertebroplasty or Kyphoplasty

Percutaneous vertebroplasty or kyphoplasty of the cervical, lumbar, or thoracic region is considered medically necessary for treatment of the following conditions:

Osteolytic vertebral metastasis, myeloma, or plasmacytoma

Osteolytic vertebral metastasis, myeloma, or plasmacytoma with severe back pain related to destruction of the vertebral body NOT involving the major part of the cortical bone

Vertebral hemangiomas

Vertebral hemangiomas with severe pain or nerve compression, or aggressive radiologic signs, when radiation therapy has failed to relieve symptoms

Eosinophilic granuloma

Eosinophilic granuloma with pain and spinal instability

Vertebral compression fracture

Vertebral compression fracture due to osteoporosis or osteopenia when **ALL** of the following requirements are met:

- Recent onset of back pain localized to the fracture site which has not responded to at least 6 weeks of conservative medical management*

  ***Conservative management** should include, but is not limited to, initial bed rest with progressive activity, analgesics, physical therapy, bracing and exercises to correct postural deformity and increase muscle tone, salmon calcitonin, bisphosphonates, and calcium supplementation.*
- Tenderness to palpation directly over the fracture site
- Advanced imaging studies confirming a non-traumatic, acute compression fracture
- Recent imaging studies (MRI or CT) which eliminate disc herniation or other causes of spine pain

- Absence of imaging findings which would confer unacceptable risk to the spinal cord or related structures, including **ALL** of the following:
    - Spinal stenosis of greater than 20% due to retropulsed fragments
    - Vertebral body collapse to less than one third (33%) original height
    - Vertebral plana (collapse greater than 90%)
    - Anatomical damage of the vertebra that prevents safe access of the needle to the vertebral body
    - Burst fracture with retropulsed fragments demonstrated by imaging

Contraindications

- Severe cardiopulmonary disease
- Coagulation disorders
- Known allergy to any of the materials used in either procedure
- Active or incompletely treated infection

Exclusions

Indications other than those addressed in this guideline are considered **not medically necessary** including, but not limited to, the following:

- Prophylaxis in patients deemed to be at risk but with no evidence of acute vertebral fracture
- Prophylaxis for the prevention of proximal junctional kyphosis and failure following posterior spinal fusion
- Non-pathologic, acute (high-energy) traumatic fractures of the vertebra
- Compression fractures shown by the medical record to be more than one year old
- Asymptomatic vertebral compression fracture
- Percutaneous sacroplasty is considered **not medically necessary** for all indications due to lack of conclusive evidence indicating a positive impact to overall health outcomes

References

1. Astur N, Avanzi O. Balloon Kyphoplasty in the Treatment of Neoplastic Spine Lesions: A Systematic Review. Global spine j. 2019;9(3):348-56.
2. Aydogan M, Ozturk C, Karatoprak O, et al. The pedicle screw fixation with vertebroplasty augmentation in the surgical treatment of the severe osteoporotic spines. J Spinal Disord Tech. 2009;22(6):444-7.
3. Bernardo WM, Anhesini M, Buzzini R. Osteoporotic vertebral compression fracture - Treatment with kyphoplasty and vertebroplasty. Revista da Associacao Medica Brasileira (1992). 2018;64(3):204-7.
4. Bohl MA, Sethi R, Leveque JC. Incidence and Clinical Risk of Cement Extravasation in Adult Patients Undergoing Prophylactic Vertebroplasty During Surgical Spine Reconstruction. World Neurosurg. 2020;134:e928-e36.
5. Chang M, Zhang C, Shi J, et al. Comparison Between 7 Osteoporotic Vertebral Compression Fractures Treatments: Systematic Review and Network Meta-analysis. World Neurosurg. 2021;145:462-70.e1.
6. Clarencon F, Fahed R, Cormier E, et al. Safety and effectiveness of cervical vertebroplasty: report of a large cohort and systematic review. Eur Radiol. 2020;30(3):1571-83.
7. Ghobrial GM, Eichberg DG, Kolcun JPG, et al. Prophylactic vertebral cement augmentation at the uppermost instrumented vertebra and rostral adjacent vertebra for the prevention of proximal junctional kyphosis and failure following long-segment fusion for adult spinal deformity. Spine J. 2017;17(10):1499-505.
8. Kolz JM, Pinter ZW, Sebastian AS, et al. Postoperative and Intraoperative Cement Augmentation for Spinal Fusion. World Neurosurg. 2022;160:e454-e63.

9. Lee JW, Kim HC, Kim SI, et al. Effects of bone cement augmentation for uppermost instrumented vertebra on adjacent segment degeneration in lumbar fusions. World Neurosurg. 2022;14:14.
10. Li HM, Zhang RJ, Gao H, et al. New vertebral fractures after osteoporotic vertebral compression fracture between balloon kyphoplasty and nonsurgical treatment PRISMA. [Review]. Medicine (Baltimore). 2018;1(40):e12666.
11. Lin S, Cheng M, Liang W, et al. Efficacy of vertebral augmentation in the treatment of osteoporotic vertebral compression fractures: a systematic review and meta-analysis. Ann Palliat Med. 2021;10(11):11767-75.
12. Lou S, Shi X, Zhang X, et al. Percutaneous vertebroplasty versus non-operative treatment for osteoporotic vertebral compression fractures: a meta-analysis of randomized controlled trials. Osteoporos Int. 2019;30(12):2369-80.
13. Martin CT, Skolasky RL, Mohamed AS, et al. Preliminary Results of the Effect of Prophylactic Vertebroplasty on the Incidence of Proximal Junctional Complications After Posterior Spinal Fusion to the Low Thoracic Spine. Spine Deform. 2013;1(2):132-8.
14. McGuire R. AAOS Clinical Practice Guideline: the Treatment of Symptomatic Osteoporotic Spinal Compression Fractures. J Am Acad Orthop Surg. 2011;19(3):183-4.
15. Noriega D, Marcia S, Theumann N, et al. A prospective, international, randomized, noninferiority study comparing an implantable titanium vertebral augmentation device versus balloon kyphoplasty in the reduction of vertebral compression fractures (SAKOS study). Spine J. 2019;19(11):1782-95.
16. Noriega DC, Ramajo RH, Lite IS, et al. Safety and clinical performance of kyphoplasty and SpineJack(R) procedures in the treatment of osteoporotic vertebral compression fractures: a pilot, monocentric, investigator-initiated study. Osteoporos Int. 2016;27(6):2047-55.
17. Noriega DC, Rodriguez-Monsalve F, Ramajo R, et al. Long-term safety and clinical performance of kyphoplasty and SpineJack R procedures in the treatment of osteoporotic vertebral compression fractures: a pilot, monocentric, investigator-initiated study. Osteoporos Int. 2019;30(3):637-45.
18. Parreira PCS, Maher CG, Megale RZ, et al. An overview of clinical guidelines for the management of vertebral compression fracture: a systematic review. Spine J. 2017;17(12):1932-8.
19. Rahmani R, Sanda M, Sheffels E, et al. The efficacy of prophylactic vertebroplasty for preventing proximal junctional complications after spinal fusion: a systematic review. Spine J. 2022;06:06.
20. Raman T, Miller E, Martin CT, et al. The effect of prophylactic vertebroplasty on the incidence of proximal junctional kyphosis and proximal junctional failure following posterior spinal fusion in adult spinal deformity: a 5-year follow-up study. Spine J. 2017;17(10):1489-98.
21. Rodriguez AJ, Fink HA, Mirigian L, et al. Pain, Quality of Life, and Safety Outcomes of Kyphoplasty for Vertebral Compression Fractures: Report of a Task Force of the American Society for Bone and Mineral Research. J Bone Miner Res. 2017;32(9):1935-44.
22. Theologis AA, Burch S. Prevention of Acute Proximal Junctional Fractures After Long Thoracolumbar Posterior Fusions for Adult Spinal Deformity Using 2-level Cement Augmentation at the Upper Instrumented Vertebra and the Vertebra 1 Level Proximal to the Upper Instrumented Vertebra. Spine (Phila Pa 1976). 2015;40(19):1516-26.
23. Vanni D, Pantalone A, Bigossi F, et al. New perspective for third generation percutaneous vertebral augmentation procedures: Preliminary results at 12 months. J Craniovertebr Junction Spine. 2012;3(2):47-51.
24. Vercoulen TFG, Doodkorte RJP, Roth A, et al. Instrumentation Techniques to Prevent Proximal Junctional Kyphosis and Proximal Junctional Failure in Adult Spinal Deformity Correction: A Systematic Review of Clinical Studies. Global spine j. 2022;12(6):1282-96.
25. Washington State Health Care Authority. Vertebroplasty, Kyphoplasty and Sacroplasty Health Technology Assessment, (2010) Olympia WA, 126 pgs
26. Xie L, Zhao ZG, Zhang SJ, et al. Percutaneous vertebroplasty versus conservative treatment for osteoporotic vertebral compression fractures: An updated meta-analysis of prospective randomized controlled trials. Int J Surg. 2017;47:25-32.
27. Yang W, Song J, Liang M, et al. Functional Outcomes and New Vertebral Fractures in Percutaneous Vertebroplasty and Conservative Treatment of Acute Symptomatic Osteoporotic Vertebral Compression Fractures. World Neurosurg. 2019;131:e346-e52.
28. Zhang H, Xu C, Zhang T, et al. Does Percutaneous Vertebroplasty or Balloon Kyphoplasty for Osteoporotic Vertebral Compression Fractures Increase the Incidence of New Vertebral Fractures? A Meta-Analysis. Pain physician. 2017;20(1):E13-e28.
29. Zhang L, Zhai P. A Comparison of Percutaneous Vertebroplasty Versus Conservative Treatment in Terms of Treatment Effect for Osteoporotic Vertebral Compression Fractures: A Meta-Analysis. Surg Innov. 2020;27(1):19-25.
30. Zhu Y, Cheng J, Yin J, et al. Therapeutic effect of kyphoplasty and balloon vertebroplasty on osteoporotic vertebral compression fracture: A systematic review and meta-analysis of randomized controlled trials. Medicine (Baltimore). 2019;98(45):e17810.
31. Zygourakis CC, DiGiorgio AM, Crutcher CL, 2nd, et al. The Safety and Efficacy of CT-Guided, Fluoroscopy-Free Vertebroplasty in Adult Spinal Deformity Surgery. World Neurosurg. 2018;116:e944-e50.

Codes

The following code list is not meant to be all-inclusive. Authorization requirements will vary by health plan. Please consult the applicable health plan for guidance on specific procedure codes.

Medical necessity reviews are initiated by submitting the correct AMA CPT codes. Specific CPT codes for services should be used when available. The submitted codes must accurately identify the service or procedure to be performed. If no such code exists, contact the health plan directly and report the service or procedure using the appropriate unlisted procedure or Not Otherwise Classified (NOC) code (which often ends in 99). Do not submit a code that is “close to” the procedure performed in lieu of an unlisted code. Correct coding demands that the code reported is appropriate for the service provided (i.e., a code that most accurately represents the service provided), and not a code that is similar but represents another service. (*CPT® Assistant,* December 2010) Nonspecific or NOC codes may be subject to additional documentation requirements and review.

CPT/HCPCS

0200T	Percutaneous sacral augmentation (sacroplasty), unilateral injection(s), including the use of a balloon or mechanical device, when used, 1 or more needles
0201T	Percutaneous sacral augmentation (sacroplasty), bilateral injections, including the use of a balloon or mechanical device, when used, 2 or more needles
22510	Percutaneous vertebroplasty (bone biopsy included when performed), 1 vertebral body, unilateral or bilateral injection, inclusive of all imaging guidance; cervicothoracic
22511	Percutaneous vertebroplasty (bone biopsy included when performed), 1 vertebral body, unilateral or bilateral injection, inclusive of all imaging guidance; lumbosacral [when specified as lumbar]
22512	Percutaneous vertebroplasty (bone biopsy included when performed), 1 vertebral body, unilateral or bilateral injection, inclusive of all imaging guidance; each additional cervicothoracic or lumbosacral vertebral body [when specified as other than sacral] (List separately in addition to code for primary procedure)
22513	Percutaneous vertebral augmentation, including cavity creation (fracture reduction and bone biopsy included when performed) using mechanical device (e.g., kyphoplasty), 1 vertebral body, unilateral or bilateral cannulation, inclusive of all imaging guidance; thoracic
22514	Percutaneous vertebral augmentation, including cavity creation (fracture reduction and bone biopsy included when performed) using mechanical device (e.g., kyphoplasty), 1 vertebral body, unilateral or bilateral cannulation, inclusive of all imaging guidance; lumbar
22515	Percutaneous vertebral augmentation, including cavity creation (fracture reduction and bone biopsy included when performed) using mechanical device (e.g., kyphoplasty), 1 vertebral body, unilateral or bilateral cannulation, inclusive of all imaging guidance; each additional thoracic or lumbar vertebral body (List separately in addition to code for primary procedure)
C7504	Percutaneous vertebroplasties (bone biopsies included when performed), first cervicothoracic and any additional cervicothoracic or lumbosacral vertebral bodies, unilateral or bilateral injection, inclusive of all imaging guidance
C7505	Percutaneous vertebroplasties (bone biopsies included when performed), first lumbosacral and any additional cervicothoracic or lumbosacral vertebral bodies, unilateral or bilateral injection, inclusive of all imaging guidance
C7507	Percutaneous vertebral augmentations, first thoracic and any additional thoracic or lumbar vertebral bodies, including cavity creations (fracture reductions and bone biopsies included when performed) using mechanical device (eg, kyphoplasty), unilateral or bilateral cannulations, inclusive of all imaging guidance
C7508	Percutaneous vertebral augmentations, first lumbar and any additional thoracic or lumbar vertebral bodies, including cavity creations (fracture reductions and bone biopsies included when performed) using mechanical device (eg, kyphoplasty), unilateral or bilateral cannulations, inclusive of all imaging guidance
C1062	Intravertebral body fracture augmentation with implant (e.g., metal, polymer)

Bone Graft Substitutes and Bone Morphogenetic Proteins

Description and Scope

Iliac crest bone graft has long been the standard adjunct utilized in spinal fusion surgery. Morbidity associated with bone graft harvest has led to the development of alternative strategies for facilitating the fusion, including bone morphogenetic proteins, demineralized bone matrix, and graft expanders such as synthetic bone graft and allograft tissue.

Demineralized bone matrix (DBM) is comprised of allograft bone, typically harvested from cadavers, from which inorganic material has been removed. DBM products are produced as putty, paste, and flexible sheets which are placed during the fusion procedure to induce new bone formation and facilitate healing.

Recombinant human bone morphogenetic protein (rhBMP-2) is one of a family of naturally occurring proteins which stimulate bone growth. Produced for commercial use utilizing recombinant DNA technology, rhBMP-2 has shown some promise in facilitating bone graft healing.

This guideline addresses medical necessity for demineralized bone matrix and recombinant human bone morphogenetic protein when used as adjuncts to spinal fusion procedures.

General Considerations

Bone graft substitutes are typically used in patients who are at risk for graft failure (nonunion or pseudoarthrosis) and for those in whom autograft is not a viable option.

Established risk factors for pseudoarthrosis include the following:

- Diabetes
- Metabolic bone disease (including osteoporosis, osteopenia, and bone disease secondary to renal disease, nutritional deficiency, or conditions in which bone healing is likely to be compromised)
- Immunocompromised
- Systemic vascular disease
- History of long-term corticosteroid use
- Active nicotine use

Clinical Indications

Demineralized Bone Matrix

Bone graft substitutes containing demineralized bone matrix (DBM) and synthetic bone graft extenders are considered medically necessary when used as bone graft extenders or in place of a bone graft when autograft is not available.

Recombinant Human Bone Morphogenetic Protein-2

Recombinant human bone morphogenetic protein-2 (rhBMP-2) is considered medically necessary in skeletally mature persons undergoing the following instrumented lumbar fusion procedures with restrictions as noted:

Anterior lumbar interbody fusion (ALIF) or lateral lumbar interbody fusion (i.e., XLIF)

- Appropriate in all patients other than males with reproductive intent

Posterolateral or intertransverse lumbar fusion when autograft is not feasible for ANY of the following reasons:

- Autograft tissue is not available due to prior autograft
- There is insufficient autograft tissue for the intended procedure
- The patient is not an appropriate candidate for autograft due to **ANY** of the following:
    - Increased risk for complications from harvesting procedure, including anatomic disruption at donor site, or comorbid conditions known to increase surgical risk
    - Poor quality bone (osteopenia/osteoporosis)
    - Obesity
    - Infection or fracture at donor site
    - Lumbar pseudoarthrosis
    - Lumbar fusion greater than or equal to 2 levels

Exclusions

Indications other than those addressed in this guideline are considered **not medically necessary** as an adjunct to spinal fusion including, but not limited to, the following:

- Use of rhBMP-2 as an adjunct to cervical or thoracic spinal fusion procedures
- Use of rhBMP-2 as an adjunct to posterior lumbar interbody fusion (PLIF) or transforaminal lumbar interbody fusion (TLIF)
- Use of mesenchymal stem cell therapy, progenitor cells, or bone marrow aspirates
- Porous hydroxyapatite bone graft substitute

References

1. Burkus JK, Dryer RF, Arnold PM, et al. Clinical and Radiographic Outcomes in Patients Undergoing Single-level Anterior Cervical Arthrodesis: A Prospective Trial Comparing Allograft to a Reduced Dose of rhBMP-2. Clin Spine Surg. 2017;30(9):E1321-E32.
2. Elder BD, Ishida W, Goodwin CR, et al. Bone graft options for spinal fusion following resection of spinal column tumors: systematic review and meta-analysis. Neurosurg Focus. 2017;42(1):E16.
3. Kunakornsawat S, Kirinpanu A, Piyaskulkaew C, et al. A comparative study of radiographic results using HEALOS collagen-hydroxyapatite sponge with bone marrow aspiration versus local bone graft in the same patients undergoing posterolateral lumbar fusion. J Med Assoc Thai. 2013;96(8):929-35.
4. Liu S, Wang Y, Liang Z, et al. Comparative Clinical Effectiveness and Safety of Bone Morphogenetic Protein Versus Autologous Iliac Crest Bone Graft in Lumbar Fusion: a meta-analysis and systematic review. Spine (Phila Pa 1976). 2020;09:09.
5. Lynch PJ, Tubic G, Foster JM, et al. Minimally Invasive Inferior Intra-Articular Sacroiliac Joint Fusion: Successful Application of Osseous Stabilization Using Allograft Bone. Orthop Res Rev. 2022;14:429-35.
6. Mariscal G, Nunez JH, Barrios C, et al. A meta-analysis of bone morphogenetic protein-2 versus iliac crest bone graft for the posterolateral fusion of the lumbar spine. J Bone Miner Metab. 2020;38(1):54-62.
7. Parajon A, Alimi M, Navarro-Ramirez R, et al. Minimally Invasive Transforaminal Lumbar Interbody Fusion: Meta-analysis of the Fusion Rates. What is the Optimal Graft Material? Neurosurgery. 2017;81(6):958-71.
8. Ye F, Zeng Z, Wang J, et al. Comparison of the use of rhBMP-7 versus iliac crest autograft in single-level lumbar fusion: a meta-analysis of randomized controlled trials. J Bone Miner Metab. 2018;36(1):119-27.

Codes

The following code list is not meant to be all-inclusive. Authorization requirements will vary by health plan. Please consult the applicable health plan for guidance on specific procedure codes.

Medical necessity reviews are initiated by submitting the correct AMA CPT codes. Specific CPT codes for services should be used when available. The submitted codes must accurately identify the service or procedure to be performed. If no such code exists, contact the health plan directly and report the service or procedure using the appropriate unlisted procedure or Not Otherwise Classified (NOC) code (which often ends in 99). Do not submit a code that is "close to" the procedure performed in lieu of an unlisted code. Correct coding demands that the code reported is appropriate for the service provided (i.e., a code that most accurately represents the service provided), and not a code that is similar but represents another service. (*CPT® Assistant,* December 2010) Nonspecific or NOC codes may be subject to additional documentation requirements and review.

CPT/HCPCS

20930	Allograft, morselized, or placement of osteopromotive material, for spine surgery only (List separately in addition to code for primary procedure)
20931	Allograft, structural, for spine surgery only (List separately in addition to code for primary procedure)
20932	Allograft, includes templating, cutting, placement and internal fixation, when performed; osteoarticular, including articular surface and contiguous bone (List separately in addition to code for primary procedure)
20933	Allograft, includes templating, cutting, placement and internal fixation, when performed; hemicortical intercalary, partial (ie, hemicylindrical) (List separately in addition to code for primary procedure)
20934	Allograft, includes templating, cutting, placement and internal fixation, when performed; intercalary, complete (ie, cylindrical) (List separately in addition to code for primary procedure)
20936	Autograft for spine surgery only (includes harvesting the graft); local (e.g., ribs, spinous process, or laminar fragments) obtained from same incision (List separately in addition to code for primary procedure)
20937	Autograft for spine surgery only (includes harvesting the graft); morselized (through separate skin or fascial incision) (List separately in addition to code for primary procedure)
20938	Autograft for spine surgery only (includes harvesting the graft); structural, bicortical or tricortical (through separate skin or fascial incision) (List separately in addition to code for primary procedure)
20939	Bone marrow aspiration for bone grafting, spine surgery only, through separate skin or fascial incision (List separately in addition to code for primary procedure)
C9359	Porous purified collagen matrix bone void filler (Integra Mozaik Osteoconductive Scaffold Putty, Integra OS Osteoconductive Scaffold Putty), per 0.5 cc
C9362	Porous purified collagen matrix bone void filler (Integra Mozaik Osteoconductive Scaffold Strip), per 0.5 cc

History

Status	Review Date	Effective Date	Action
Revised	01/23/2024	10/20/2024	Independent Multispecialty Physician Panel (IMPP) review. Added clarification to Cervical disc arthroplasty exclusions. Added Lumbar discectomy exclusion for annular closure device. For Lumbar laminectomy, expanded timeframe for imaging lumbar disc herniation to 9 months and lumbar spinal stenosis to 12 months. Added other clarifications throughout. Updated references. Added CPT code 62380, and HCPCS codes C1062 and C9757. Added required language per new Medicare regulations.
Updated	n/a	01/01/2024	Added guidance for correct coding to code sections.
Revised	04/12/2023	09/10/2023; 11/05/2023 for Indiana Medicaid	IMPP review. Added clarifications and elements to required documentation and management.

Status	Review Date	Effective Date	Action
Revised	01/24/2023	09/10/2023; 11/05/2023 for Indiana Medicaid	IMPP review. Cervical decompression and Cervical disc arthroplasty for radiculopathy, Lumbar discectomy, foraminotomy, laminotomy for lumbar disc herniation – removed conservative management requirement when objective neurologic deficits present; PT optional; for recurrent lumbar disc herniation, shortened conservative management required to 6 weeks. Cervical decompression for degenerative cervical kyphosis – added indications for debilitating neck pain and other clinically significant problems. Cervical decompression, Lumbar fusion for pseudarthrosis – shortened time since prior procedure to 6 months. Lumbar disc arthroplasty – removed exclusion for "prior spine surgery of any form at the target level" to align with FDA language. Lumbar fusion for isthmic spondylolisthesis – instability present for pars defect. Lumbar laminectomy without fusion – added indication for synovial cyst. Vertebroplasty/Kyphoplasty for osteolytic metastasis, myeloma, or plasmacytoma – removed prior chemo or radiation therapy; new exclusion for prophylactic vertebroplasty in posterior spinal fusion. References updated. Added HCPCS C7504, C7505, C7507, C7508.
Updated	–	01/01/2023	2023 Annual CPT code update: removed 0163T, added 22860; description changes for 22630, 22633, 22857.
Revised	11/11/2021	09/11/2022* *Not for Indiana Medicaid	IMPP review. Cervical decompression with or without fusion, cervical disc arthroplasty: added criteria for when revision or replacement may be medically necessary. New indication for 2-level cervical disc arthroplasty at a 2nd contiguous level to a previously performed arthroplasty. Lumbar disc arthroplasty: added requirement to manage underlying psychiatric disorder; added contraindications (i.e., prior fusion, poorly managed psychiatric disorder, chronic radiculopathy) and exclusion for prior lumbar fusion. Lumbar fusion: removed "associated neurological deficits" as a clinical consideration for Scheuermann's kyphosis; expanded scoliosis indication to include thoracic for progressive adolescent idiopathic, increased Cobb angle to greater than 50 degrees in skeletally mature patients; revised spinal stenosis to require surgeon's interpretation of flexion-extension lateral spine x-ray documented in the medical record, added indications for recurrent and adjacent-level stenosis after a prior fusion, and planned indirect decompression via anterior approach. Removed HCPCS code C9757.
Revised	11/11/2021	06/12/2022; 09/11/2022 for Anthem Medicaid except Indiana	IMPP review. Added indication for 2-level lumbar disc arthroplasty when using a 2-Level FDA-approved implant (exception added under exclusions). Lumbar discectomy: removed exclusion for annular closure devices. Lumbar fusion: removed exclusion for anterior lumbar interbody fusion for indirect lumbar decompression in the absence of instability. Updated references.
Updated	–	01/01/2022	2022 Annual CPT code update: added 63052 and 63053; description changes for 22600, 22610, 22612, 22614, 22633, 22634, 63048.
Revised	05/26/2021	11/07/2021	IMPP review. Clarification allows for use of an additional FDA-approved device (Simplify Disc) for two-level cervical artificial disc replacement. Updated references.
Revised	12/03/2020	09/12/2021	IMPP review. Aligned conservative care definitions across musculoskeletal surgery and spine imaging guidelines. Added a more rigorous definition of the supervised home PT requirement for cervical and lumbar surgery and removed cognitive behavioral therapy as a conservative care modality. Added standard conservative management requirement for instability to align with spinal stenosis indications. New comprehensive indication for tethered cord syndrome.
Revised	07/08/2020	03/14/2021	IMPP review. Added exclusion for use of bone-anchored annular closure devices (lumbar discectomy/foraminotomy/laminotomy). Added HCPCS code C9757.
Updated	–	01/01/2021	2021 Annual CPT code update: removed 63180 and 63182.
Revised	–	05/17/2020	Added CPT codes 0200T and 0201T.

Status	Review Date	Effective Date	Action
Revised	06/10/2019	02/09/2020	IMPP review. Modified conservative management requirements to include physical therapy or home therapy plus a complementary modality for all spine procedures. Decreased duration of conservative management requirement and added age, level, and sign/symptom requirements for lumbar disc arthroplasty. Decreased duration of conservative management requirement for lumbar fusion and lumbar laminectomy in patients with spinal stenosis. Added active nicotine use as a risk factor for pseudoarthrosis in graft failure (bone growth stimulation and bone graft substitutes). Added thoracic fusion for noninvasive electric stimulation. For lumbar fusion, added indication for implant/instrumentation failure, added juvenile and congenital to adolescent idiopathic scoliosis, and added exclusion for anterior lumbar interbody fusion for foraminal stenosis without evidence of instability. For lumbar laminectomy, aligned lumbar disc herniation criteria with discectomy and added indication for synovial cyst.
Revised	–	01/01/2020	2020 Annual CPT code update: removed 0375T.
Revised	09/12/2018	05/18/2019	IMPP review. Reporting of symptom severity expanded to include instrumental ADLs. Removed nicotine-free documentation requirement from tobacco cessation. Added exclusions for cervical/thoracic laminectomy and lumbar laminectomy when criteria not met. Added radicular pain clarification to initial lumbar herniated disc criteria (lumbar discectomy/foraminotomy/laminotomy). For lumbar fusion, added criteria for flat back deformity and isthmic spondylolisthesis; added indication for Scheuermann's kyphosis. Added risk factor criteria for cervical noninvasive bone growth stimulation.
Revised	09/12/2018	01/01/2019	IMPP review. Added indications for non-traumatic atlantoaxial instability (cervical decompression). Added indications/criteria for the appropriate use of laminectomy for cordotomy (cervical laminectomy); biopsy, excision, or evacuation (cervical/lumbar laminectomy); and dorsal rhizotomy (lumbar laminectomy). Code updates: added 0095T, 22210, 22216, 22220, 22226, 22532, 22548, 22556, 22590, 22595, 63003, 63016, 63046, 63055, 63180, 63182, 63185, 63190, 63191, 63194, 63196, 63198, 63250, 63265, 63270, 63275, 63280, 63285, 63300, 63304, 63308 (cervical decompression); added 0095T, 0098T, 0375T (cervical disc arthroplasty); added 0163T, 0164T, 0165T (lumbar disc arthroplasty); added 0164T and removed 22210, 22220, 63300, 63304 (lumbar fusion); added 63185, 63190, 63200, 63252, 63267, 63272, 63277, 63282, 63287, 63290 (lumbar laminectomy); added 20932, 20933, 20934, 20939, C9359, C9362 (bone graft substitutes).
Revised	07/11/2018	03/09/2019	IMPP review. Added the General Clinical Guideline.
Revised	12/12/2017	07/01/2018	IMPP review. Added osteotomy and corpectomy to definitions and clarified instrumentation failure to include implants and imaging evidence for cervical decompression and lumbar fusion. Added *anterolisthesis* to specify source of instability and removed *need for bilateral or wide decompression* for lumbar fusion in treatment of spinal stenosis.
Created	06/13/2017	11/01/2017	IMPP review. Original effective date.