### Clinical guidelines

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<th>Lumbar Spinal Fusion Surgery</th>
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#### CPT Codes:
- **Lumbar Fusion (Single level)** = 22533, 22558, 22612, 22630, 22633
- **Lumbar Fusion (Multiple levels)** = 22533, +22534, 22558, +22585, 22612, +22614, 22630, +22632, 22633, +22634 (+ indicates multiple level)
- **Lumbar Decompression** = 63030, +63035, 63005, 63012, 63042, +63044, 63047, +63048, 63056, +63057
- **Lumbar Microdiscectomy** = 63030, +63035

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<th>Guideline Number: NIA_CG_304</th>
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<td>Responsible Department: Clinical Operations</td>
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### OVERVIEW:

This guideline outlines the key surgical treatments and indications for common lumbar spinal disorders and is a consensus document based upon the best available evidence. Spine surgery is a complex area of medicine and this document breaks out the treatment modalities for lumbar spine disorders into surgical categories: **lumbar microdiscectomy, lumbar decompression, and lumbar fusion surgery**. See the *additional information* section for procedures considered not medically necessary.

### INTRODUCTION

A. **Lumbar Microdiscectomy** is a surgical procedure to remove part of the damaged spinal disc. The damaged spinal disc herniates into the spinal canal and irritates the nerve roots. Nerve root compression leads to symptoms like low back pain, radicular pain, numbness and tingling, muscular weakness, and paresthesia. Typical disc herniation pain is exacerbated with any movement that causes the disc to increase pressure on the nerve roots.

B. **Lumbar Decompression (Laminectomy, Facetectomy and Foraminotomy)**: Laminectomy is common decompression surgery. The American Association of Neurological Surgeons defines laminectomy as a surgery to remove the back part of vertebra, lamina, to create more space for the spinal cord and nerves. The most common indication for laminectomy is spinal stenosis. Spondylolisthesis and herniated disk are also frequent indications for laminectomy. Decompression surgery is usually performed as part of lumbar fusion surgery.
C. **Lumbar Fusion Surgery:** Lumbar spinal fusion (arthrodesis) is a surgical procedure used to treat spinal conditions of the lumbar, e.g., degenerative disc disease, spinal stenosis, injuries/fractures of the spine, spinal instability, and spondylolisthesis. Spinal fusion is a “welding” process that permanently fuses or joins together two or more adjacent bones in the spine, immobilizing the vertebrae and restricting motion at a painful joint. It is usually performed after other surgical procedures of the spine, such as discectomy or laminectomy. The goal of fusion is to increase spinal stability, reduce irritation of the affected nerve roots, compression on the spinal cord, disability, and pain and/or numbness. Clinical criteria for single level fusion versus multiple level fusions are outlined under the indications section.

**INDICATIONS FOR LUMBAR & PRE-SACRAL SURGERY:** (This section of the clinical guidelines provides the clinical criteria each of the lumbar and pre-sacral spine surgery categories.)

- **Indications for Lumbar Microdiscectomy** - Surgical indications for inter-vertebral disc herniation*:
  - Primary radicular symptoms noted upon clinical exam that hinders daily activities; **AND**
  - Failure to improve with at least six consecutive weeks of conservative treatment; **AND**
  - Imaging studies showing evidence of inter-vertebral disc herniation

*Other indications:* Microdiscectomy may be used as the first line of treatment *(no conservative treatment required)* in the following clinical scenarios:
  - Progressive nerve compression resulting in an acute neurologic deficit sensory or motor due to herniated disc; **OR**
  - Cauda equina syndrome (loss of bowel or bladder control).

**NOTE:** Percutaneous lumbar discectomy or radiofrequency disc decompression procedures are deemed investigational procedures and are not approved.

- **Indications for Lumbar Decompression:** Laminectomy, Facetectomy and Foraminotomy. These procedures allow decompression by partial or total removal of various parts of vertebral bone and ligaments. Surgical Indications for spinal canal decompression due to lumbar spinal stenosis*:
  - Low back pain, neurogenic claudication, and/or radicular leg pain that impairs daily activities for at least twelve (12) weeks; **AND**
  - Failure to improve with at least 6 weeks of conservative therapy; **AND**
  - Imaging findings consistent with clinical signs/symptoms; **AND**
  - Imaging studies do not show evidence of spinal instability.
*Other Indications*: Lumbar decompression may be used as the first line of treatment (no conservative treatment required) in the following clinical scenarios:

- Progressive nerve compression resulting in an acute neurologic (sensory or motor) deficit
- Cauda equina syndrome (loss of bowel or bladder control)
- Spinal stenosis due to tumor, infection, or trauma

**Indications for Lumbar Spine Fusion: Single Level with or without decompression**

Because of variable outcomes with fusion surgery, patients should be actively involved in the decision-making process and provided appropriate decision-support materials when considering this intervention. The following indicators must be present*:

- Lumbar back pain, neurogenic claudication, and/or radicular leg pain without sensory or motor deficit that impairs daily activities for at least 6 months: AND
- Failure to improve with least 6-12 weeks of conservative, non-operative therapy: AND
- Imaging studies corresponding to the clinical findings: AND
- At least one of the following clinical conditions:
  a) Spondylolisthesis [Neural Arch Defect -Spondylolytic spondylolisthesis, degenerative spondylolisthesis, and congenital unilateral neural arch hypoplasia]: OR
  b) Evidence of Segmental Instability - Excessive motion, as in degenerative spondylolisthesis, segmental instability, and surgically induced segmental instability: OR
  c) Revision surgery for failed previous operation(s) for pseudoarthrosis at the same level at least 6-12 months from prior surgery** if significant functional gains are anticipated: OR
  d) Revision surgery for failed previous operation(s) repeat disk herniations if significant functional gains are anticipated: OR
  e) Fusion for the treatment of spinal tumor, cancer, or infection: OR
  f) Chronic low back pain or degenerative disc disease must have failed at least 6 months of appropriate non-operative treatment (comprehensive rehabilitation) and must be evaluated on a case-by-case basis.

*Other Indications*: Lumbar spinal fusion may be used as the first line of treatment (no conservative treatment required) in the following clinical scenarios:

- Progressive nerve compression resulting in an acute neurologic deficit sensory or motor AND one of the aforementioned clinical conditions, except chronic low back pain or degenerative disc disease.
- Cauda equina syndrome (loss of bowel or bladder control)

**REPEAT LUMBAR SPINE FUSION OPERATIONS**: Repeat lumbar fusion operations will be reviewed on a case-by-case basis upon submission of medical records and imaging
studies that demonstrate remediable pathology. The below must also be documented and available for review of repeat fusion requests:

- Rationale as to why surgery is preferred over other non-invasive or less invasive treatment procedures.
- Signed documentation that the patient has participated in the decision-making process and understands the high rate of failure/complications.

Instrumentation, bone formation or grafting materials, including biologics, should be used at the surgeon’s discretion; however, use should be limited to FDA approved devices or biologics and indications.

NOTE: Pre-sacral, axial lumbar interbody fusion (AxiaLIF) is not an approved surgical approach due to insufficient evidence. Pre-Sacral Fusion Codes: 0195T, +0196T, 22586, 0309T. Artificial lumbar disc replacement or other lumbar implants are not an approved procedure due to insufficient evidence Lumbar Artificial Disc Replacement/Implant Codes: 22857, +0163T, 22862, +0164T, 22865, +0165T, 0221T, +0222T

Indications for multi-level fusions with or without decompression (All multi-level fusion surgeries will be reviewed on a case-by-case basis). Because of variable outcomes with fusion surgery, patients should be actively involved in the decision-making process and provided appropriate decision-support materials when considering this intervention. The following clinical indications must be present*:

- Lumbar back pain, neurogenic claudication, and/or radicular leg pain without sensory or motor deficit that impairs daily activities for at least 6 months: AND
- Failure to improve with least 6-12 weeks of conservative, non-operative therapy; AND
- Imaging studies corresponding to the clinical findings: AND
- At least one of the following clinical conditions:
  a) Multiple Level Spondylolisthesis; OR
  b) Fusion for the treatment of spinal tumor, trauma, cancer, or infection affecting multiple levels; OR
  c) Intra-Operative Segmental Instability

*Other Indications: Lumbar spinal fusion may be used as the first line of treatment (no conservative treatment required) in the following clinical scenarios:
- Progressive nerve compression resulting in an acute neurologic deficit (sensory or motor) AND one of the aforementioned clinical conditions.

Instrumentation, bone formation or grafting materials, including biologics, should be used at the surgeon’s discretion; however, use should be limited to FDA approved devices or biologics and indications.

This lumbar surgery guideline does not address spinal deformity surgeries or the clinical indications for spinal deformity surgery [CPT codes 22800-22812].
NOTE: Pre-sacral, axial lumbar interbody fusion (AxiaLIF) is not an approved surgical approach due to insufficient evidence. Pre-Sacral Fusion Codes: 0195T, +0196T, 22586, 0309T. Artificial lumbar disc replacement or other lumbar implants are not an approved procedure due to insufficient evidence Lumbar Artificial Disc Replacement/Implant Codes: 22857, +0163T, 22862, +0164T, 22865, +0165T, 0221T, +0222T

CONTRAINDICATIONS FOR SPINE SURGERY

- **Medical contraindications** to surgery, e.g., severe osteoporosis; infection of soft tissue adjacent to the spine, whether or not it has spread to the spine; severe cardiopulmonary disease; anemia; malnutrition and systemic infection.
- **Psychosocial risk factors.** It is imperative to rule out non-physiologic modifiers of pain presentation or non-operative conditions mimicking radiculopathy or instability (e.g., peripheral neuropathy, piriformis syndrome, myofascial pain, sympathetically mediated pain syndromes, sacroiliac dysfunction, psychological conditions, etc.) prior to consideration of elective surgical intervention.
- **Active Tobacco use** prior to fusion surgery. It is recommended that the patient refrain from smoking for at least six weeks prior to surgery and during the period of fusion healing.
- **Morbid Obesity.** Contraindication to surgery in cases where there is significant risk and concern for improper post-operative healing, post-operative complications related to morbid obesity, and/or an inability to participate in post-operative rehabilitation.

ADDITIONAL INFORMATION

**Services Not Covered:** The following procedures are considered are either still under investigation or are not recommended based upon the current evidence: Percutaneous lumbar discectomy; Laser discectomy; Percutaneous Radiofrequency Disc Decompression; intradiscal electrothermal annuloplasty (IDEA) or more commonly called IDET (Intradiscal Electrothermal therapy); Nucleus Pulpous Replacement; Pre-Sacral Fusion, or Lumbar Artificial Disc Replacement.

**PERCUTANEOUS DISCECTOMY** is an invasive operative procedure to accomplish partial removal of the disc through a needle which allows aspiration of a portion of the disc trocar under imaging control. Percutaneous discectomy is rarely indicated. It is sometimes useful in suspected septic discitis or in order to obtain diagnostic tissue.

Percutaneous discectomy is not recommended for contained disc herniations or bulges with associated radiculopathy, due to lack of evidence to support long-term improvement. This includes radiofrequency disc decompression.

**LASER DISCECTOMY** is a procedure which involves the delivery of laser energy into the center of the nucleus pulposus using a fluoroscopically guided laser fiber under local anesthesia. The energy denatures protein in the nucleus, causing a
structural change which is intended to reduce intradiscal pressure. Its effectiveness has not been fully established.

**INTRADISCAL ELECTROTHERMAL ANNULOPLASTY (IDEA)** (more commonly called IDET, or Intradiscal Electrothermal therapy) is an outpatient non-operative procedure in which a wire is guided into the identified painful disc using fluoroscopy. The wire is then heated at the nuclear-annular junction within the disc. Physicians performing this procedure must have been trained in the procedure and certified. Surgical Indications: Failure of conservative therapy including physical therapy, medication management, or therapeutic injections. Indications may include those with chronic low back pain, disc related back pain, or pain lasting for greater than 6 months. There is conflicting evidence regarding its effectiveness.

**NUCLEUS PULPOSUS REPLACEMENT** Involves the introduction of a prosthetic implant into the intervertebral disc, replacing the nucleus pulposus while preserving the annulus fibrosus. **INDICATIONS:** Nucleus Pulposus Replacement is limited to investigational use in the United States at this time and is not recommended

**LUMBAR ARTIFICIAL DISC REPLACEMENT:** Involves the insertion of a prosthetic device into an intervertebral space from which a degenerated disc has been removed, sparing only the peripheral annulus. The prosthetic device is designed to distribute the mechanical load of the vertebrae in a physiologic manner and maintain range of motion. Studies do not demonstrate a long-term advantage of measured function or pain over comparison groups undergoing fusion. The longevity of this prosthetic device has not yet been determined. Lumbar Artificial Disc Replacement Codes: 22857, +0163T, 22862, +0164T, 22865, +0165T, 0221T, +0222T

**Conservative Therapy:** (musculoskeletal) includes a combination of modalities, such as rest, ice, heat, modified activities, medical devices, (such as crutches, immobilizer, metal braces, orthotics, rigid stabilizer or splints, etc and not to include neoprene sleeves), medications, diathermy, chiropractic treatments, or physician supervised home exercise program. Part of this combination may include the physician instructing patient to rest the area or stay off the injured part.

**Home Exercise Program** - (HEP) – the following two elements are required to meet guidelines for completion of conservative therapy:

- Information provided on exercise prescription/plan AND
- Follow up with member with information provided regarding completion of HEP (after suitable 4-6 week period), or inability to complete HEP due to physical reason i.e. increased pain, inability to physically perform exercises. (Patient inconvenience or noncompliance without explanation does not constitute “inability to complete” HEP).

**Claims Billing & Coding:**
NIA uses a combination of internally developed edits in addition to an enhanced set of industry standard editing. NIA’s Claims Edit Module is a group of system edits that run multiple times per day. Edits that are part of this module include industry standard edits that apply to spine surgery services and NIA custom edits developed specifically for spine surgery. The following describes each of the edits NIA applies:

- **Outpatient Code Editor (OCE):** This edit performs all functions that require specific reference to HCPCS codes, HCPCS modifiers, and ICD-9-CM diagnosis codes. The OCE only functions on a single claim and does not have any cross claim capabilities. NIA is consistent with CMS.

- **National Correct Coding Initiative (NCCI) editing:** The edit prevents improper payment when incorrect code combinations are reported. The NCCI contains two tables of edits. The Column One/Column Two Correct Coding Edits table and the Mutually Exclusive Edits table include code pairs that should not be reported together for a number of reasons explained in the Coding Policy Manual. NIA is consistent with CMS.
  - Incidental edits: This edit applies if a procedure being billed is a component of another procedure that occurred on the same date of service for the same provider and tax ID and claimant.
  - Mutually exclusive editing: This edit applies if a procedure being billed is mutually exclusive with a procedure that occurred on the same date of service for the same provider tax ID and claimant.

- **Multiple Procedure Discounts (MPD):** This edit applies a reduction to the second and any other subsequent services by the same provider, in the same setting, for the same member. We typically apply a 50% reduction. NIA follows the CMS methodology that began in January 2011 which allows for application of MPD to codes within CMS’s two specific advanced imaging code families. However, NIA differs from CMS in that we apply MPD to all provider types unless health plan contracts prohibit this.

Lumbar Fusion - Fusions can be performed either anteriorly, laterally, or posteriorly, or via a combined approach; although simple posterolateral fusions are indicated in the great majority of cases requiring fusion. These are the surgical approaches:

- Intertransverse Fusion or Posterolateral Fusion
- Anterior Interbody Fusion (ALIF)
- Lateral or Transpsoas Interbody Fusion (XLIF)
- Posterior or Trans-foraminal Interbody Fusion (PLIF or TLIF)
- Anterior/posterior Fusion (360-degree)
- Pre-sacral, axial lumbar interbody fusion (AxiaLIF) is still being investigated and is not recommended.
Use of bone grafts including autologous or allograft which might be combined with metal or biocompatible devices to produce a rigid, bony connection between two or more adjacent vertebrae are common. Bone formation or grafting materials including biologics should be used at the surgeon’s discretion; however, use of biologics should be limited to FDA approved indications in order to limit complications (especially BMP).

All operative interventions must be based upon positive correlation of clinical findings, clinical course, and diagnostic tests. A comprehensive assimilation of these factors must lead to a specific diagnosis with positive identification of pathologic condition(s). It is imperative to rule out non-physiologic modifiers of pain presentation or non-operative conditions mimicking radiculopathy or instability (e.g., peripheral neuropathy, piriformis syndrome, myofascial pain, sympathetically mediated pain syndromes, sacroiliac dysfunction, psychological conditions, etc.) prior to consideration of elective surgical intervention.

Operative treatment is indicated when the natural history of surgically treated lesions is better than the natural history for non-operatively treated lesions.

- All patients being considered for surgical intervention should first undergo a comprehensive neuro-musculoskeletal examination to identify mechanical pain generators that may respond to non-surgical techniques or may be refractory to surgical intervention.
- While sufficient time allowances for non-operative treatment are required to determine the natural cause and response to non-operative treatment of low back pain disorders, timely decision making for operative intervention is critical to avoid de-conditioning and increased disability (exclusive of "emergent" or urgent pathology such as cauda equina syndrome or associated rapidly progressive neurologic loss).

In general, if the program of non-operative treatment fails, operative treatment is indicated when:

- Improvement of the symptoms has plateaued or failed to occur and the residual symptoms of pain and functional disability are unacceptable at the end of 6 to 12 weeks of active treatment, or at the end of longer duration of non-operative programs for debilitated patients with complex problems; and/or
- Frequent recurrences of symptoms cause serious functional limitations even if a non-operative active treatment program provides satisfactory relief of symptoms, and restoration of function on each recurrence.

**Lumbar spinal stenosis and associated lumbar spondylolisthesis** - Spinal stenosis is narrowing of the spinal column or of the neural foramina where spinal nerves leave the spinal column, causing pressure on the spinal cord. The most common cause is degenerative changes in the lumbar spine. Neurogenic claudication is the most common symptom, referring to “leg symptoms encompassing the buttock, groin and anterior thigh, as well as
In addition to pain, leg symptoms can include fatigue, heaviness, weakness and/or paresthesia. Some patients may also suffer from accompanying back pain. Symptoms are worse when standing or walking and are relieved by sitting. Lumbar spinal stenosis is often a disabling condition, and it is the most common reason for lumbar spinal surgery in adults over 65 years.

**Degenerative lumbar spondylolisthesis** - is the displacement of a vertebra in the lower part of the spine: one lumbar vertebra slips forward on another with an intact neural arch and begins to press on nerves. The slippage occurs at the L4-L5 level most commonly. The most common cause, in adults, is degenerative disease although it may also result from bone diseases and fractures. Spondylolisthesis seldom occurs before the age of 50 years and it disproportionately affects women, especially black women. Degenerative spondylolisthesis is not always symptomatic.

**Lumbar degenerative disease without stenosis or spondylolisthesis** - Spondylosis is an umbrella term describing age-related degeneration of the spine. Lumbar degenerative disease without stenosis or spondylolisthesis is characterized by disabling low back pain and spondylosis at L4-5, L5-S1, or both levels.
REFERENCES


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Reviewed/Approved by

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