2018-2019 NIA Clinical Guidelines for Medical Necessity Review

MUSCULOSKELETAL AND SURGERY GUIDELINES

Version: 2

Guidelines for Clinical Review Determination

Preamble

NIA is committed to the philosophy of supporting safe and effective treatment for patients. The medical necessity criteria that follow are guidelines for the provision of diagnostic imaging. These criteria are designed to guide both providers and reviewers to the most appropriate diagnostic tests based on a patient's unique circumstances. In all cases, clinical judgment consistent with the standards of good medical practice will 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.

Guideline Development Process

These medical necessity criteria were developed by NIA for the purpose of making clinical review determinations for requests for diagnostic tests. The developers of the criteria sets included representatives from the disciplines of radiology, internal medicine, nursing, and cardiology. They were developed following a literature search pertaining to established clinical guidelines and accepted diagnostic imaging practices.

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22600/63001 – Cervical Spinal Surgery

CPT Codes:

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Anterior Cervical Decompression with Fusion - Multiple Level** (ACDF) 22548, 22551, 22554, +22552, +22585

Cervical Posterior Decompression with Fusion - Multiple Levels** 22590, 22595, 22600, +22614

Cervical Posterior Decompression with Fusion - Single Level** 22590, 22595, 22600

Cervical Artificial Disc – Single Level 22856, 22861, 22864

Cervical Artificial Disc – Two Levels (**0375T is not a covered service and is not reimbursable) 22858, 0098T, 0095T

Cervical Posterior Decompression (without fusion) 63001, 63015, 63020, 63040, 63045, 63050, 63051, +63035, +63043, +63048,

Cervical Anterior Decompression (without fusion) 63075, +63076

OVERVIEW:

This guideline outlines the key surgical treatments and indications for common cervical 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 clinical indications by surgical type. Operative treatment is indicated only when the natural history of an operatively treatable problem is better than the natural history of the problem without operative treatment. Choice of surgical approach is based on anatomy, the patient's pathology, and the surgeon's experience and preference. All operative interventions must be based on a positive correlation with clinical findings, the natural history of the disease, the clinical course, and diagnostic tests or imaging results.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual needs and based on an assessment of the local delivery system.

INDICATIONS FOR CERVICAL SPINE SURGERY:

A. <u>Anterior Cervical Decompression with Fusion (ACDF) - Single Level</u>

1) Anterior cervical discectomy and fusion with either a bone bank allograft or autograft with or without plating is the standard approach anteriorly and is most **commonly used for disc herniation**. **The following criteria must be met*:**

a) Positive clinical findings of myelopathy with evidence of progressive neurologic deficits consistent with **spinal cord compression** - immediate surgical evaluation is indicated (AA0S, 2013; Bono, 2011; Cunningham, 2010; Holly, 2009; Matz, 2009a; Matz, 2009b; Matz, 2009d; Matz, 2009e; Mummaneni, 2009; Tetreault, 2013; Yalamanchili, 2012; Zhu, 2013). Symptoms may include:
    i) upper extremity weakness
    ii) unsteady gait related to myelopathy/balance or generalized lower extremity weakness
    iii) disturbance with coordination
    iv) hyperreflexia
    v) Hoffmann sign
    vi) positive Babinski sign and/or clonus

OR

b) Progressive neurological deficit (motor deficit, bowel or bladder dysfunction) with evidence of spinal cord or nerve root compression on Magnetic Resonance Imaging (MRI) or Computed Tomography (CT) imaging - immediate surgical evaluation is indicated. (Bono, 2011; Matz, 2009b; Tetreault, 2013).

OR

c) **When <u>All</u> of the following criteria are met** (Bono, 2011: Nikolaidis, 2010)**:**
    i) **Cervical radiculopathy** or myelopathy from ruptured disc, spondylosis, spinal instability, or deformity; ***AND***
    ii) Persistent or recurrent symptoms/pain with functional limitations that are unresponsive to at least **6 weeks of appropriate conservative treatment;** ***AND***
    iii) Documented failure of at least 6 consecutive weeks of **any 2 o**f the following physician-directed conservative treatments:

        (1) Analgesics, steroids, and/or NSAIDs

        (2) Structured program of physical therapy

        (3) Structured home exercise program prescribed by a physical therapist, chiropractic provider or physician

        (4) Epidural steroid injections and or selective nerve root block; ***AND***

    iv) Imaging studies confirm the presence of spinal cord or spinal nerve root compression (disc herniation or foraminal stenosis) at the level **<u>corresponding with the clinical findings</u>** (Bono, 2011). Imaging studies may include:

        (1) MRI (preferred study for assessing cervical spine soft tissue); **OR**

        (2) CT with or without myelography— indicated in patients in whom MRI is contraindicated; preferred for examining bony structures, or in patients presenting with clinical symptoms or signs inconsistent with MRI findings (e.g., foraminal compression not seen on MRI).

2) ***Cervical spine decompression with fusion as first-line treatment without conservative care measures in the following clinical cases** (Matz, 2009b; Tetreault, 2013; Zhu, 2013; White, 1987) :
   a) As outlined above for myelopathy or progressive neurological deficit scenarios.
   b) Significant spinal cord or nerve root compression due to tumor, infection or trauma.
   c) Fracture or instability on radiographic films measuring:
      i) Sagittal plane angulation of greater than 11 degrees at a single interspace or greater than 3.5mm anterior subluxation in association with radicular/cord dysfunction; **OR**
      ii) Subluxation at the (C1) level of the atlantodental interval of more than 3 mm in an adult and 5 mm in a child.

3) **Not Recommended** (Nikolaidis, 2010; van Middelkoop, 2012):
   a) In asymptomatic or mildly symptomatic cases of cervical spinal stenosis.
   b) In cases of neck pain alone, without neurological deficits, and no evidence of significant spinal nerve root or cord compression on MRI or CT. *See V. Cervical Fusion for Treatment of Axial Neck Pain Criteria*

B. Anterior Cervical Decompression with Fusion (ACDF) - Multiple Level

1) Anterior cervical discectomy and fusion with either a bone bank allograft or autograft with or without plating is the standard approach anteriorly and is most **commonly used for disc herniation**. **The following criteria must be met*:**
   a) Positive clinical findings of myelopathy with evidence of progressive neurologic deficits consistent with worsening **spinal cord compression** - immediate surgical evaluation is indicated (AA0S, 2013; Bono, 2011; Cunningham, 2010; Holly, 2009; Matz, 2009a; Matz, 2009b; Matz, 2009d; Matz, 2009e; Mummaneni, 2009; Tetreault, 2013; Yalamanchili, 2012; Zhu, 2013). Symptoms may include:
      i) upper extremity weakness
      ii) unsteady gait related to myelopathy/balance or generalized lower extremity weakness
      iii) disturbance with coordination
      iv) hyperreflexia
      v) Hoffmann sign
      vi) positive Babinski sign and or clonus

      OR

   b) Progressive neurological deficit (motor deficit, bowel or bladder dysfunction) with corresponding evidence of spinal cord or nerve root compression on an MRI or CT scan images - immediate surgical evaluation is indicated (Bono,2011; Matz, 2009b; Tetreault, 2013).

      OR

   c) **When ALL of the following criteria are met** (Bono, 2011; Nikolaidis, 2010):

i) Cervical radiculopathy or myelopathy due to ruptured disc, spondylosis, spinal instability, or deformity; ***AND***

ii) Persistent or recurrent pain/symptoms with functional limitations that are unresponsive to at least **6 weeks of conservative treatment**; ***AND***

iii) Documented failure of at least 6 consecutive weeks of **any 2 o**f the following physician-directed conservative treatments:

(1) Analgesics, steroids, and/or NSAIDs
(2) Structured program of physical therapy
(3) Structured home exercise program prescribed by a physical therapist, chiropractic provider or physician
(4) Epidural steroid injections and or selective nerve root block;

AND

iv) Imaging studies confirm the presence of spinal cord or spinal nerve root compression (disc herniation or foraminal stenosis) at multiple levels corresponding with the clinical findings. Imaging studies may include any of the following (Bono 2011):

(1) MRI (preferred study for assessing cervical spine soft tissue); **OR**

(2) CT with or without myelography - indicated in patients in whom MRI is contraindicated; preferred for examining bony structures, or in patients presenting with clinical symptoms or signs inconsistent with MRI findings (e.g., foraminal compression not seen on MRI)

2) **Cervical spine decompression with fusion performed as first-line treatment without conservative care measures in the following clinical cases** (Matz, 2009b; Tetreault, 2013; White, 1987; Zhu, 2013)**:**
   a) As outlined above for myelopathy or progressive neurological deficit scenarios.
   b) Significant spinal cord or nerve root compression due to tumor, infection or trauma.
   c) Fracture or instability on radiographic films measuring:
      i) Sagittal plan angulation of greater than 11 degrees at a single interspace or greater than 3.5mm anterior subluxation in association with radicular/cord dysfunction; **OR**
      ii) Subluxation at the (C1) level of the atlantodental interval of more than 3 mm in an adult and 5 mm in a child.
3) **Not Recommended** (Nikolaidis, 2010; van Middelkoop, 2012) **:**
   a) In asymptomatic or mildly symptomatic cases of cervical spinal stenosis.
   b) In cases of neck pain alone, without neurological deficits, and no evidence of significant spinal nerve root or cord compression on MRI or CT. *See V. Cervical Fusion for Treatment of Axial Neck Pain Criteria.*

C. Cervical Posterior Decompression with Fusion - Single Level

1) Surgical indications for cervical spine stenosis/cervical spondylotic myelopathy (CSM) must meet the following criteria*:

a) Positive clinical findings of myelopathy with evidence of progressive neurologic deficits consistent with worsening **spinal cord compression** - immediate surgical evaluation is indicated (AA0S, 2013; Anderson, 2007; Cunningham, 2010; Holly, 2009; Matz, 2009d; Mummaneni, 2009; Tetreault, 2013; Yalamanchili, 2012; Zhu, 2013)**.** Symptoms may include:

i) upper extremity weakness

ii) unsteady gait related to myelopathy/balance or generalized lower extremity weakness

iii) disturbance with coordination

iv) hyperreflexia

v) Hoffmann sign

vi) positive Babinski sign and / or clonus

OR

b) Progressive neurological deficit (motor deficit, bowel or bladder dysfunction) with corresponding evidence of spinal cord or nerve root compression on an MRI or CT scan images - immediate surgical evaluation is indicated (Bono, 2011; Matz, 2009b; Tetreault, 2013).

OR

c) When **ALL of the following** criteria are met (Bono, 2011; Nikolaidis, 2010):

i) Cervical radiculopathy or myelopathy from ruptured disc, spondylosis, spinal instability, or deformity; ***AND***

ii) Persistent or recurrent symptoms/pain with functional limitations that are unresponsive to at least **6 weeks of conservative treatment**; ***AND***

iii) Documented failure of at least 6 consecutive weeks of **any 2** of the following physician-directed conservative treatments:

(1) Analgesics, steroids, and/or NSAIDs

(2) Structured program of physical therapy

(3) Structured home exercise program prescribed by a physical therapist, chiropractic provider or physician

(4) Epidural steroid injections and or selective nerve root block; ***AND***

iv) Imaging studies confirm the presence of spinal cord or spinal nerve root compression (disc herniation or foraminal stenosis) at single level corresponding with the clinical findings (Bono, 2011). Imaging studies may include:

(1) MRI (preferred study for assessing cervical spine soft tissue); **OR**

(2) CT with or without myelography - indicated in patients in whom MRI is contraindicated; preferred for examining bony structures, or in patients presenting with clinical symptoms or signs inconsistent with MRI findings (e.g., foraminal compression not seen on MRI); ***AND***

v) Single level **symptomatic cervical** disease as evidence by (Anderson, 2007)**:**

(1) cervical spinal stenosis due to cervical spondylotic myelopathy (CSM); **or**

(2) cervical spinal stenosis due to ossification of the posterior longitudinal ligament (OPLL); **or**

(3) single level spinal cord or nerve root compression due to herniated disc.

2) Cervical spine decompression with fusion performed as first-line treatment without conservative care measures in the following clinical cases (Anderson, 2007; Tetreault, 2013; White, 1987; Zhu, 2013):

a) As outlined above for myelopathy or progressive neurological deficit scenarios.
b) Significant spinal cord or nerve root compression due to tumor, infection or trauma.
c) Fracture or instability on radiographic films measuring:
   i) Sagittal plane angulation of greater than 11 degrees at a single interspace or greater than 3.5mm anterior subluxation in association with radicular/cord dysfunction; **OR**
   ii) Subluxation at the (C1) level of the atlantodental interval of more than 3 mm in an adult and 5 mm in a child.

3) Not Recommended (Nikolaidis, 2010; Wang, 2011):

a) In asymptomatic or mildly symptomatic cases of cervical spinal stenosis.
b) In cases of neck pain alone, without neurological deficits, and no evidence of significant spinal nerve root or cord compression on MRI or CT. *See V. Cervical Fusion for Treatment of Axial Neck Pain Criteria.*

D. <u>Cervical Posterior Decompression with Fusion - Multiple Levels</u>

1) Surgical indications for cervical spine stenosis/cervical spondylotic myelopathy (CSM) must meet the following criteria*:
   a) Positive clinical findings of myelopathy with evidence of progressive neurologic deficits consistent with worsening **spinal cord compression** - immediate surgical evaluation is indicated (AA0S, 2013; Anderson, 2007; Cunningham, 2010; Holly, 2009; Matz, 2009d; Mummaneni, 2009; Tetreault, 2013; Yalamanchili, 2012; Zhu, 2013). Symptoms may include:
      i) upper extremity weakness
      ii) unsteady gait related to myelopathy/balance or generalized lower extremity weakness
      iii) disturbance with coordination
      iv) hyperreflexia
      v) Hoffmann sign
      vi) positive Babinski sign and / or clonus

   OR

   b) Progressive neurological deficit (motor deficit, bowel or bladder dysfunction) with corresponding evidence of spinal cord or nerve root compression on an MRI or CT scan images - immediate surgical evaluation is indicated (Bono, 2011; Matz, 2009b; Tetreault, 2013).

   OR

   c) **When <u>ALL</u> of the following criteria are met** (Bono, 2011; Nikolaidis, 2010):

i) Cervical radiculopathy or myelopathy from ruptured disc, spondylosis, spinal instability, or deformity; ***AND***

ii) Persistent or recurrent symptoms/pain with functional limitations that are unresponsive to at **least 6 weeks of conservative treatment; *AND***

iii) Documented failure of at least 6 consecutive weeks of **any 2** of the following physician-directed conservative treatments:

(1) Analgesics, steroids, and/or NSAIDs
(2) Structured program of physical therapy
(3) Structured home exercise program prescribed by a physical therapist, chiropractic provider or physician
(4) Epidural steroid injections and or facet injections /selective nerve root block; ***AND***

iv) Imaging studies indicate significant spinal cord or spinal nerve root compression at **multiple levels corresponding with the clinical findings**. Imaging studies may include (Bono, 2011):

(1) MRI (preferred study for assessing cervical spine soft tissue); **OR**

(2) CT with or without myelography - indicated in patients in whom MRI is contraindicated; preferred for examining bony structures, or in patients presenting with clinical symptoms or signs inconsistent with MRI findings (e.g., foraminal compression not seen on MRI); ***AND***

v) Multilevel (>=2) symptomatic cervical disease as evidence by (Anderson, 2007; Bono, 2011):

(1) cervical spinal stenosis due to cervical spondylotic myelopathy (CSM); **or**

(2) cervical spinal stenosis due to ossification of the posterior longitudinal ligament (OPLL); **or**

(3) evidence of significant spinal cord or nerve root compression from herniated discs at two or more levels.

2) ***Cervical spine decompression with fusion performed as first-line treatment without conservative care measures in the following clinical cases** (Anderson, 2007; Tetreault, 2013; White, 1987; Zhu, 2013)**:**
   a) As outlined above for myelopathy or progressive neurological deficit scenarios.
   b) Significant spinal cord or nerve root compression due to tumor, infection or trauma.
   c) Fracture or instability on radiographic films measuring:
      i) Sagittal plane angulation of greater than 11 degrees at a single interspace or greater than 3.5mm anterior subluxation in association with radicular/cord dysfunction; **OR**
      ii) Subluxation at the (C1) level of the atlantodental interval of more than 3 mm in an adult and 5 mm in a child.
3) **Not Recommended** (Nikolaidis, 2010; Wang, 2011):
   a) In asymptomatic or mildly symptomatic cases of cervical spinal stenosis.

b) In cases of neck pain alone, without neurological deficits, and no evidence of significant spinal nerve root or cord compression on MRI or CT. *See V. Cervical Fusion for Treatment of Axial Neck Pain Criteria.*

Cervical Fusion for Treatment of Axial Neck Pain:

In patients with non-radicular cervical pain for whom fusion is being considered, **ALL of the following criteria must be met** (Riew, 2010):

1) Improvement of the symptoms has failed or plateaued, and the residual symptoms of pain and functional disability are unacceptable at the **end of 6 to 12 consecutive months of appropriate, active treatment**, or at the end of longer duration of non-operative programs for debilitated patients with complex problems [NOTE: Mere passage of time with poorly guided treatment is not considered an active treatment program]; ***AND***
2) All pain generators are adequately defined and treated; ***AND***
3) All physical medicine and manual therapy interventions are completed; ***AND***
4) X-ray, MRI, or CT demonstrating disc pathology or spinal instability; ***AND***
5) Spine pathology limited to one or two levels unless other complicating factors are involved; ***AND***
6) Psychosocial evaluation for confounding issues addressed.

NOTE: The effectiveness of three-level or greater cervical fusion for non-radicular pain has not been established (van Middelkoop, 2012).

VI. **Cervical Posterior Decompression**

1) Surgical indications for cervical nerve root decompression due to radiculopathy, disc herniation or foraminal stenosis. A posterior laminotomy and discectomy is occasionally used for patients with specific lateral disc herniations when the surgeon's preference is that the individual would respond better with a posterior approach than an anterior one.

The following criteria must be met*:

a) Positive clinical findings of myelopathy with evidence of progressive neurologic deficits consistent with worsening **spinal cord compression** - immediate surgical evaluation is indicated (AA0S, 2013; Bono, 2011; Heary, 2009; Mummaneni, 2009; Ryken, 2009; Tetreault, 2013; Wang, 2013; Yalamanchili, 2012; Zhu, 2013). Symptoms may include:

i) upper extremity weakness

ii) unsteady gait related to myelopathy/balance or generalized lower extremity weakness

iii) disturbance with coordination

iv) hyperreflexia

v) Hoffmann sign

vi) positive Babinski sign and / or clonus

OR

b) Progressive neurological deficit (motor deficit, bowel or bladder dysfunction) with corresponding evidence of spinal cord or nerve root compression on an MRI or CT scan images - immediate surgical evaluation is indicated (Tetreault, 2013; Wang, 2013).

OR

c) When **ALL of the following criteria are met** (Bono, 2011):

i) Cervical radiculopathy from ruptured disc, spondylosis, or deformity; ***AND***

ii) Persistent or recurrent symptoms/pain with functional limitations that are unresponsive to at **least 6 weeks of appropriate conservative treatment; *AND***

iii) Documented failure of at least 6 consecutive weeks of **any 2** of the following physician-directed conservative treatments:

(1) Analgesics, steroids, and/or NSAIDs

(2) Structured program of physical therapy

(3) Structured home exercise program prescribed by a physical therapist, chiropractic provider or physician

(4) Epidural steroid injections and or facet injections /selective nerve root block; ***AND***

iv) Imaging studies confirm the presence of spinal cord or spinal nerve root compression at the level(s) **corresponding with the clinical findings** (Bono, 2011). Imaging studies may include any of the following:

(1) MRI (preferred study for assessing cervical spine soft tissue); ***OR***

(2) CT with or without myelography— indicated in patients in whom MRI is contraindicated; preferred for examining bony structures, or in patients presenting with clinical symptoms or signs inconsistent with MRI findings (e.g., foraminal compression not seen on MRI);

2) Cervical decompression performed as first-line treatment without conservative care in the following clinical cases (Ryken, 2009; Tetreault, 2013; Wang, 2013; Zhu, 2013):

a) As outlined above for myelopathy or progressive neurological deficit scenarios.
b) Spinal cord or nerve root compression due to tumor, infection or trauma.

3) Not Recommended (Nikolaidis, 2010; Wang, 2011):

a) In asymptomatic or mildly symptomatic cases.
b) In cases of neck pain alone, without neurological deficits and abnormal imaging findings. *See E. Cervical Fusion for Treatment of Axial Neck Pain Criteria.*

c) In patients with kyphosis or at risk for development of postoperative kyphosis.

VII. Cervical Artificial Disc Replacement (Single or Two Level)

This involves the insertion of a prosthetic device into the cervical intervertebral space with the goal of maintaining physiologic motion at the treated cervical segment. The use of artificial discs in motion-preserving technology is based on the surgeon's preference and training. Only FDA-approved artificial discs are appropriate.

1) Indications for artificial cervical disc replacement are as follows (Bono, 2011; Cheng, 2009; Davis, 2015; Matz, 2009e):
   a) Skeletally mature patient; ***AND***
   b) Patient has intractable radiculopathy caused by one or two level disease (either herniated disc or spondolytic osteophyte) located at C3-C7; ***AND***
   c) Persistent or recurrent symptoms/pain with functional limitations that are unresponsive to at **least 6 weeks of appropriate conservative treatment;** ***AND***
   d) Documented failure of at least 6 consecutive weeks of **any 2** of the following physician-directed conservative treatments:
      1) Analgesics, steroids, and/or NSAIDs
      2) Structured program of physical therapy
      3) Structured home exercise program prescribed by a physical therapist, chiropractic provider or physician
      4) Epidural steroid injections and or facet injections /selective nerve root block; ***AND***

   e) Imaging studies confirm the presence of compression at the level**(s)** corresponding with the clinical findings (MRI or CT); ***AND***

   f) No prior neck surgery; ***AND***

   g) Use of an FDA-approved prosthetic intervertebral discs.

2) Cervical Artificial Disc Replacement is **NOT** indicated when **any of the following** clinical scenarios exists (Davis, 2015):
   a) Symptomatic multiple level disease affecting 3 or more levels
   b) Adjacent level disease: degenerative disease adjacent to a previous cervical fusion
   c) Infection (at site of implantation or systemic)
   d) Osteoporosis or osteopenia
   e) Instability
      i) Translation greater than 3mm difference between lateral flexion-extension views at the symptomatic levels;
      ii) 11 degrees of angular difference between lateral flexion-extension views at the symptomatic levels
   f) Sensitivity or allergy to implant materials
   g) Severe spondylosis defined as (Davis, 2015):
      i) > 50% disc height loss compared to minimally or non-degenerated levels; OR
      ii) Bridging osteophytes: OR
      iii) Absence of motion on lateral flexion-extension views at the symptomatic site

h) Severe facet arthropathy
i) Ankylosing spondylitis
j) Rheumatoid arthritis
k) Previous fracture with anatomical deformity
l) Ossification of the posterior longitudinal ligament (OPLL)
m) Active cervical spine malignancy

VIII. Cervical Fusion without Decompression

Cervical fusion without decompression will be reviewed on a **case-by-case basis**. Atraumatic instability due to Down Syndrome-related spinal deformity, rheumatoid arthritis, or basilar invagination are uncommon, but may require cervical fusion (Trumees, 2017).

IX. Cervical Anterior Decompression (without fusion)

All requests for anterior decompression without fusion will be reviewed on a **case-by-case basis** (Bono, 2011; Botelho, 2012; Gebremariam, 2012; Matz, 2009a; Matz, 2009e).

X. ADDITIONAL INFORMATION:

1) ***Conservative Therapy:** (Musculoskeletal) includes primarily physical therapy and /or injections; and 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.

2) ****Home Exercise Program** - (HEP) – the following two elements are required to meet guidelines for completion of conservative therapy:
   a) Information provided on exercise prescription/plan AND
   b) Follow up with member with documentation provided regarding completion of HEP, (after 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).
3) A comprehensive assimilation of factors should lead to a specific diagnosis with positive identification of the pathologic condition(s).
   a) Early intervention may be required in acute incapacitating pain or in the presence of progressive neurological deficits.
   b) Operative treatment is indicated when the natural history of surgically treated lesions is better than the natural history for non-operatively treated lesions.
   c) Patients may present with localized pain or severe pain in combination with numbness, extremity weakness, loss of coordination, gait issues, or bowel and bladder complaints. Nonoperative treatment continues to play an important role in the care of patients with degenerative cervical spine disorders. If these symptoms progress to

neurological deficits, from corresponding spinal cord or nerve root compression, than surgical intervention may be warranted.

d) All patients being considered for surgical intervention should first undergo a comprehensive neuromusculoskeletal examination to identify those pain generators that may either respond to non-surgical techniques, or may be refractory to surgical intervention.

e) If operative intervention is being considered, particularly those procedures that require a fusion, it is recommended that the person refrain from smoking for **at least six weeks** prior to surgery and during the time of healing.

f) In situations requiring the possible need for operation, a second opinion may be necessary. Psychological evaluation is strongly encouraged when surgery is being performed for isolated axial pain to determine if the patient will likely benefit from the treatment.

g) It is imperative for the clinician to rule out non-physiologic modifiers of pain presentation, or non-operative conditions mimicking radiculopathy, myelopathy or spinal instability (peripheral compressive neuropathy, chronic soft tissue injuries, and psychological conditions), prior to consideration of elective surgical intervention.

4) Degenerative cervical spine disorders, while often benign and episodic in nature, can become debilitating, resulting in axial pain and neurological damage to the spinal cord or roots. Compression on the nerve root and / or spinal cord may be caused by (1) a herniated disc with or without extrusion of disc fragments and/or (2) degenerative cervical spondylosis.

XI. Anterior Approaches – Additional Information:

1) Anterior surgical approaches to cervical spine decompression emerged in the 1950s in response to technical limitations experienced with posterior approaches, including restricted access to and exposure of midline bony spurs and disc fragments.
2) The first reports in the literature describe anterior cervical discectomy combined with a spinal fusion procedure (ACDF). Fusion was added to address concerns about potential for loss of spinal stability and disc space height, leading to late postoperative complications such as kyphosis and radicular pain (Sonntag and Klara, 1996; Dowd and Wirth, 1999; Matz et al, 2009a; Matz et al 2009b; Denaro and Di Martino, 2011; Botelho et al, 2012; van Middelkoop et al, 2012).
3) Anterior cervical fusion (ACF) accounted for approximately 80% of cervical spine procedures performed in the United States between 2002 and 2009, while posterior cervical fusion (PCF) accounted for 8.5% of these procedures (Oglesby et al, 2013).
4) **Anterior Cervical Discectomy and Fusion (ACDF) –** removal of all or part of a herniated or ruptured disc or spondolytic bony spur to alleviate pressure on the nerve roots or on the spinal cord in patients with symptomatic radiculopathy. Discectomy is most often combined with fusion to stabilize the spine.

XII. Posterior Approaches

1) **Laminectomy –** removal of the bone between the spinal process and facet pedicle junction to expose the neural elements of the spine' this allows for the inspection of the spinal

canal, identification and removal of pathological tissue, and decompression of the cord and roots.

2) **Laminoplasty –** the opening of the lamina to enlarge the spinal canal. There are several laminoplasty techniques; all aim to alleviate cord compression by reconstructing the spinal canal. Laminoplasty is commonly performed to decompress the spinal cord in patients with multilevel degenerative spinal stenosis and neutral or lordotic alignment.
3) **Laminoforaminotomy (also known as posterior discectomy) –** the creation of a small window in the lamina to facilitate removal of arthritic bone spurs and herniated disc material pressing on the nerve root as it exits through the foramen. The procedure widens the opening of the foramen so that the nerve exits without being compressed.

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TOC

22612/63030 – Lumbar Spinal Surgery

CPT Codes:

-Lumbar Fusion (Single level) = 22533, 22558, 22612, 22630, 22633 *Plus Decompression*

-Lumbar Fusion (Multiple levels) = 22533, +22534, 22558, +22585, 22612, +22614, 22630, +22632, 22633, +22634 (+indicates multiple levels) *Plus Decompression*

-Lumbar Decompression = 63030, +63035, 63005, 63012, 63017, 63042, +63044, 63047, +63048, 63056, +63057

-Lumbar Discectomy/Microdiscectomy = 63030, +63035, 62380

-Lumbar Artificial Disc Replacement=22857, 22862, 22865

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 discectomy/microdiscectomy, lumbar decompression, and lumbar fusion surgery.** See the *additional information* section for procedures considered not medically necessary.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual needs and based on an assessment of the local delivery system.

INTRODUCTION

I. **Lumbar Discectomy/Microdiscectomy** is a surgical procedure to remove part of the damaged spinal disc. The damaged spinal disc herniates into the spinal canal and compresses 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.

II. **Lumbar Decompression (Laminectomy, Laminotomy, Facetectomy, and Foraminotomy)**: Laminectomy is a 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.

III. **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 SURGERY: (This section of the clinical guidelines provides the clinical criteria for each of the lumbar and pre-sacral spine surgery categories.)

I. Indications for Lumbar Discectomy/Microdiscectomy: Surgical indications for inter-vertebral disc herniation*:

a) When **ALL of the following** are present:
   i) Primary radicular symptoms noted upon clinical exam that significantly hinders daily activities (Chou 2009; Kreiner 2014; Peul 2007; Tosteson 2011); ***AND***
   ii) Failure to improve with at least six (6) consecutive weeks of documented, physician directed appropriate conservative treatment to include at least 2 of the following (Kreiner 2013; Kreiner 2014; Peul 2007):
      1) Analgesics, steroids, and/or NSAIDs
      2) Structured program of physical therapy
      3) Structured home exercise program prescribed by a physical therapist, chiropractic provider or physician
      4) Epidural steroid injections and or selective nerve root block; ***AND***
   iii) Imaging studies showing evidence of inter-vertebral disc herniation that correlate exactly with the patient's symptoms / signs (Fardon 2001; Kreiner 2014).

OR

***Other indications:** Microdiscectomy may be used as the first line of treatment (*no conservative treatment required*) in the following clinical scenarios (Kreiner 2014):

b) Progressive nerve compression resulting in an acute motor neurologic deficit sensory or motor due to herniated disc. The neurological deficits should be significant: 0-2/5 on the motor function scale for L5 or S1 roots; 0-3/5 for L3 or L4 roots. Lesser degrees of motor dysfunction may resolve with conservative treatment and are not considered an indication for early surgery;

OR

c) Cauda equina syndrome (loss of bowel or bladder control).

NOTE: Percutaneous lumbar discectomy, radiofrequency disc decompression, and related procedures are deemed investigational procedures and are not approved. Discectomy and microdiscectomy are the gold standards.

II. Indications for Lumbar Decompression: Laminectomy, Laminotomy, 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*:

a) When **ALL of the following** are present:
   i) Neurogenic claudication, and/or radicular leg pain that impairs daily activities (Atlas 2005; Chou 2009; Genevay 2010; Kreiner 2013; Peul 2007; Tosteson 2011; Tosteson 2008; Weinstein 2007); ***AND***
   ii) Failure to improve with at least six (6) consecutive weeks of documented,physician directed appropriate conservative therapy to include **at least two (2) of the following** (Kreiner 2013; Peul 2007):
      1) Analgesics, steroids, and/or NSAIDs
      2) Structured program of physical therapy
      3) Structured home exercise program prescribed by a physical therapist, chiropractic provider or physician
      4) Epidural steroid injections and or selective nerve root block; ***AND***
   iii) Imaging findings demonstrating moderate to severe stenosis consistent with clinical signs/symptoms (Genevay 2010; Kreiner 2013; Weinstein 2007).

OR

***Other Indications:** Lumbar decompression may be used as the first line of treatment (*no conservative treatment required*) in any of the following clinical scenarios (Kreiner 2013; Kreiner 2014):

b) Progressive nerve compression resulting in an acute neurologic (sensory or motor) deficit. The neurological deficits should be significant—0-2/5 on the motor function scale for L5 or S1 roots; 0-3/5 for L3 or L4 roots. Lesser degrees of motor dysfunction may resolve with conservative treatment and are not considered an indication for early surgery;

OR

c) Cauda equina syndrome (loss of bowel or bladder control);

OR

d) Spinal stenosis due to tumor, infection, or trauma

NOTE: Percutaneous decompressions, endoscopic decompression, and related procedures (laser, etc.) are deemed investigational procedures and are not approved. Open or microdecompressions via laminectomy or laminotomy are the gold standards (Kreiner 2014).

III. Indications for Lumbar Spine Fusion:

A. Single Level Fusion 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.

a) When **All of the following** are present*:
   a) Lumbar back pain, neurogenic claudication, and/or radicular leg pain without sensory or motor deficit that impairs daily activities **for at least 6 months** (Bogduk 2009; Brox

2003; Carreon 2008; Chou 2009; Fritzell 2001; Kreiner2013; Mannion 2016; Matz 2014; NASS 2009; Resnick 2005; Tosteson 2011; Tosteson 2008; Weinstein 2007); ***AND***

b) Failure to improve with at least six (6) consecutive weeks of documented, physician directed appropriate conservative therapy (six months for isolated LBP) to include **at least two (2) of the following** (Brox 2003; Chou 2009; Kreiner 2013; Matz 2014; NASS 2009; Resnick 2005):
    1) Analgesics, steroids, and/or NSAIDs
    2) Structured program of physical therapy
    3) Structured home exercise program prescribed by a physical therapist, chiropractic provider or physician
    4) Epidural steroid injections and or facet injections /selective nerve root block; ***AND***

c) Imaging studies corresponding to the clinical findings (Genevay 2010; Kreiner 2013; Matz 2014; NASS 2009; Resnick 2005; Weinstein 2007); ***AND***

d) At least **one of the following** clinical conditions:
    1) Spondylolisthesis [Neural Arch Defect -Spondylolytic spondylolisthesis, degenerative spondylolisthesis, and congenital unilateral neural arch hypoplasia] (Carreon 2008; Kwon 2005; Matz 2014; NASS 2009; Weinstein 2007); OR
    2) Evidence of segmental instability -Excessive motion, as in degenerative spondylolisthesis, segmental instability, and surgically induced segmental instability (Carreon 2008; Kwon 2005; Matz 2014; NASS 2009; Weinstein 2007); OR
    3) 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(Trumees 2017) ; OR
    4) Revision surgery for failed previous operation(s) repeat disk herniations if significant functional gains are anticipated (Note: Many recurrent disc herniations can be treated with discectomy alone, so specific indications for the addition of fusion will be required) (Kreiner 2014); OR
    5) Fusion for the treatment of spinal tumor, cancer, or infection (Trumees 2017); OR
    6) *Chronic low back pain or degenerative disc disease* (disc degeneration without significant neurological compression presenting with low back pain) must have failed at least 6 months of appropriate active non-operative treatment (**completion of a comprehensive cognitive -behavioral rehabilitation program is mandatory**) and must be evaluated on a case-by-case basis (Bogduk 2009; Brox 2003; Chou 2009; Fardon 2001; Fritzell 2001; Mannion 2016).

NOTE: The results of several randomized trials suggests that in many degenerative cases uninstrumented posterolateral intertransverse fusion has similar results to larger instrumented (PLIF, TLIF, etc.) fusion techniques with fewer morbidities and less likelihood of revision surgery. Accordingly, specific findings suggesting more significant instability should be present when larger techniques are used (gaping of facets, gross motion on flexion / extension radiographs, wide disc spaces) (Carreon 2008; Deyo 2010).

OR

***Other Indications:** Lumbar spinal fusion may be used as the first line of treatment (*no conservative treatment required*) in the following clinical scenarios (Kreiner 2014):

b) Progressive nerve compression resulting in an acute neurologic deficit (motor); ***AND***
   - One of the aforementioned clinical conditions, except chronic low back pain or degenerative disc disease. The neurological deficits must be significant: 0-2/5 on the motor function scale for L5 or S1 roots; or 0-3/5 for L3 or L4 roots. Lesser degrees of motor dysfunction may resolve with conservative treatment and are not considered an indication for early surgery.

c) Cauda equina syndrome (loss of bowel or bladder control); ***AND***
   - One of the aforementioned clinical conditions, except chronic low back pain or degenerative disc disease.

**** 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 (Bogduk 2009; Chou 2009; Mannion 2016):

1) Rationale as to why surgery is preferred over other non-invasive or less invasive treatment procedures.
2) 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 indications regarding the specific devices or biologics.

NOTE: Pre-sacral, axial lumbar interbody fusion (AxiaLIF) is not an approved surgical approach due to insufficient evidence. Artificial lumbar disc replacement or other lumbar implants are not an approved procedure due to insufficient evidence.

B. Multi-level Fusion 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.

a) When **ALL of the following** are present*:

i) Lumbar back pain, neurogenic claudication, and/or radicular leg pain without sensory or motor deficit that impairs daily activities for **at least 6 months** (Bogduk 2009; Brox 2003; Chou 2009; Fritzell 2001; Mannion 2016; Tosteson 2011; Tosteson 2008; Weinstein 2007); ***AND***

ii) Failure to improve with at least six (6) consecutive weeks of documented, physician directed appropriate conservative therapy to include at least two (2) of the following (Brox 2003; Matz 2014; NASS 2009):
   1) Analgesics, steroids, and/or NSAIDs
   2) Structured program of physical therapy

3) Structured home exercise program prescribed by a physical therapist, chiropractic provider or physician
4) Epidural steroid injections and or facet injections /selective nerve root block; ***AND***

iii) Imaging studies corresponding to the clinical findings (Genevay 2010; Kreiner 2013; Matz 2014; NASS 2009; Resnick 2005; Weinstein 2007); ***AND***

iv) At least **one of the following** clinical conditions (Carreon 2008; Kwon 2005; Matz 2014; NASS 2009):
1) Multiple level spondylolisthesis (Note: Fusions in cases with single level spondylolisthesis should be limited to the unstable level); OR
2) Fusion for the treatment of spinal tumor, trauma, cancer, or infection affecting multiple levels; OR
3) Intra-operative segmental instability

OR

***Other Indications:** Lumbar spinal fusion may be used as the first line of treatment (*no conservative treatment required*) in the following clinical scenarios (Kreiner 2014):

b) Progressive nerve compression resulting in an acute neurologic deficit (motor); ***AND***
- One of the aforementioned clinical conditions except chronic low back pain or degenerative disc disease. The neurological deficits must be significant: 0-2/5 on the motor function scale for L5 or S1 roots; or 0-3/5 for L3 or L4 roots. Lesser degrees of motor dysfunction may resolve with appropriate conservative treatment and are not considered an indication for early surgery.

OR

c) Cauda equina syndrome (loss of bowel or bladder control); ***AND***
- One of the aforementioned clinical conditions, except chronic low back pain or degenerative disc disease.

NOTE: Instrumentation, bone formation or grafting materials, including biologics, should be used at the surgeon's discretion; however, use should be limited to FDA approved indications regarding the specific devices or biologics.

NOTE: This lumbar surgery guideline does not address spinal deformity surgeries or the clinical indications for spinal deformity surgery.

NOTE: Pre-sacral, axial lumbar interbody fusion (AxiaLIF) is not an approved surgical approach due to insufficient evidence. Artificial lumbar disc replacement or other lumbar implants are not an approved procedure due to insufficient evidence.

IV. CONTRAINDICATIONS FOR SPINE SURGERY (Note: Cases will not be approved if the below contraindications exist):

1) **Medical contraindications** to surgery, e.g., severe osteoporosis; infection of soft tissue adjacent to the spine and may be at risk for spreading to the spine; severe

cardiopulmonary disease; anemia; malnutrition and systemic infection (Puvanesarajah 2016).

2) **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 (Kreiner 2014). Patients with clinically significant depression or other psychiatric disorders being considered for elective spine surgery will be reviewed on a case-by-case basis and the surgery may be denied for risk of failure.
3) **Active Tobacco or Nicotine** use prior to fusion surgery. Patients must be free from smoking and/or nicotine use for at least six weeks prior to surgery and during the entire period of fusion healing (Andersen 2001; Glassman 2000; Patel 2013).
4) **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 (Epstein 2017). These cases will be reviewed on a case-by-case basis and may be denied given the risk of failure.

V. ADDITIONAL INFORMATION

1) **Spinal surgeries should be performed only by those with extensive surgical training (neurosurgery, orthopaedic surgery)**
2) **Services Not Covered:** The following procedures are considered 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.
    a) *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 under imaging control. It's only indication is in order to obtain diagnostic tissue, due to lack of evidence to support long-term improvement compared to gold standard discectomy. This includes radiofrequency disc decompression.
    b) *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.
    c) *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. It has not been shown to be effective.
    d) *NUCLEUS PULPOSUS REPLACEMENT* Involves the introduction of a prosthetic implant into the intervertebral disc, replacing the nucleus pulposus while preserving

the annulus fibrosus. It has not been shown to be effective relative to other gold standard interventions.

e) *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.

3) **Conservative Therapy:** (Musculoskeletal) includes primarily physical therapy and /or injections; and 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.
4) **Home Exercise Program** - (HEP) – the following two elements are required to meet guidelines for completion of conservative therapy:
   a) Information provided on exercise prescription/plan AND
   b) 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).
5) **Isolated Low Back Pain** - Pain isolated to the lumbar region of the spine and the surrounding paraspinal musculature. Also referred to 'mechanical low back pain' or 'discogenic pain'. No associated neurogenic claudication or radiculopathy.
6) **Claims Billing & Coding:**
   a) 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:
7) **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.
8) **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.

   a) 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.

b) 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.

9) **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.

10) **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. Aggressive surgical approaches to fusion may be an indication for denial of cases (when such techniques have not been demonstrated to be superior to less morbid techniques) or recommendation for alternative procedure. These are the surgical approaches:
    a) Intertransverse Fusion or Posterolateral Fusion
    b) Anterior Interbody Fusion (ALIF)
    c) Lateral or Transpsoas Interbody Fusion (XLIF)
    d) Posterior or Trans-foraminal Interbody Fusion (PLIF or TLIF)
    e) Anterior/posterior Fusion (360-degree)
    f) Pre-sacral, axial lumbar interbody fusion (AxiaLIF) is still being investigated and is not recommended.

11) 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).

12) All operative interventions must be based upon positive correlation of clinical findings, clinical course, and diagnostic tests and must be performed by surgeons with appropriate training (neurosurgery, orthopaedic surgery). A comprehensive assimilation of these factors must lead to a specific diagnosis with positive identification of pathologic condition(s). A failure of accurate correlation may be an indication for denial of cases. 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.

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

14) In general, if the program of non-operative treatment fails, operative treatment is indicated when:
    a) 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
    b) 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.
15) **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 radiation down the posterior part of the leg to the feet." 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.
16) **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. *The indications for fusion in this group are evolving and as more evidence emerges, changes to the accepted indications and acceptable techniques used may be made.*

17) **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.

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TOC

62310-62311 – Spinal Epidural Injections

CPT Codes:

Cervical Thoracic Region: 62320, 62321, 64479 (+64480)

Lumbar Sacral Region: 62322, 62323, 64483 (+64484)

INTRODUCTION

Therapeutic Spinal Epidural Injections or Select Nerve Root Blocks (Transforaminal) are types of interventional pain management procedures. The therapeutic use of epidural injections is for short-term pain relief associated with acute back pain or exacerbation of chronic back pain. With therapeutic injections a corticosteroid is injected close to the target area with the goal of pain reduction. Epidural injections should be used in combination with other active conservative treatment* modalities and not as stand alone treatment for long-term back pain relief. There are different approaches used when administering spinal epidural injections:

1. **Interlaminar** epidural injections, with steroids, access the epidural space between two vertebrae (Interlaminar) to treat cervical, lumbar or thoracic pain with radicular pain. These procedures should be performed using fluoroscopic guidance (AHRQ 2013). Interlaminar epidural injections are the most common type of epidural injection.
2. **Transforaminal** epidural injections (also called selective nerve root blocks) access the epidural space via the intervertebral foramen where the spinal nerves exit (cervical, lumbar or thoracic region). It is used both diagnostically and therapeutically. Some studies report lack of evidence and risks of transforaminal epidural injections. These procedures are always aided with fluoroscopic guidance (AHRQ 2013).
3. **Caudal** epidural injections, with steroids, are used to treat back and lower extremity pain, accessing the epidural space through the sacral hiatus, providing access to the lower nerve roots of the spine. These procedures should be performed using fluoroscopic guidance (AHRQ 2013). Failed back surgery syndrome is the most common reason for the caudal approach.

The rationale for the use of spinal epidural injections is that the sources of spinal pain, e.g., discs and joints, are accessible and amendable to neural blockade.

Medical necessity management for epidural injections includes an initial evaluation including history and physical examination and a psychosocial and functional assessment. The following must be determined: nature of the suspected organic problem; non-responsiveness to active conservative treatment*; level of pain and functional disability; conditions which may be contraindications to epidural injections; and responsiveness to prior interventions.

Interventional pain management specialists do not agree on how to diagnose and manage spinal pain; there is a lack of consensus with regards to the type and frequency of spinal interventional techniques for treatment of spinal pain. The American Society of Interventional Pain Physicians (ASIPP) guidelines and International Spine Intervention Society (SIS) guidelines provide an algorithmic approach which provides a step-by-step procedure for managing chronic spinal pain based upon evidence-based guidelines. It is based on the structural basis of spinal pain and incorporates acceptable evidence of diagnostic and therapeutic interventional techniques available in managing chronic spinal pain.

The guidelines and algorithmic approach referred to above include the evaluation of evidence for diagnostic and therapeutic procedures in managing chronic spinal pain and recommendations for managing spinal pain. The Indications and Contraindications presented within this document are based on the guidelines and algorithmic approach. Prior to performing this procedure, shared decision-making between patient and physician must occur, and patient must understand the procedure and its potential risks and results (moderate short-term benefits, and lack of long-term benefits).

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual needs and based on an assessment of the local delivery system.

I. **INDICATIONS FOR EPIDURAL INJECTIONS OR SELECTIVE NERVE BLOCKS (caudal, interlaminar, and transforaminal)** *(Injection of local anesthetics with corticosteroids)*

1) Acute pain or exacerbation of chronic radicular pain with the following clinical timeframes:
   - Neck or back pain with acute radicular pain (AHRQ 2013; Summers 2013):
     i) after 2 weeks or more of acute radicular pain that has failed to respond or poorly responded to conservative (including medication) management unless the medical reason this conservative treatment cannot be done is clearly documented (AHRQ 2013; Manchikanti 2013; Summers 2013; ODG 2017); **OR**
   - Failed back surgery syndrome or epidural fibrosis causing radicular pain (AHRQ 2013; ODG 2017):
     i) typically not done immediately post-surgery. Documentation requires a medical reason that clearly indicates why an injection is needed.
     ii) patient must engage in some form of other active conservative treatment* for a minimum of 6 weeks in the last 6 months or details of engagement in other forms of active conservative non-operative treatment if the patient had any prior spinal injections prior to epidural injections unless the medical reason this conservative treatment cannot be done is clearly documented (AHRQ 2017; Manchikanti 2013; Summers 2013; ODG 2017); **OR**
   - Spinal stenosis (foraminal, central or disc disease) causing radicular pain (AHRQ 2017; ODG 2017):
     - patient must engage in some form of other active conservative treatment* for a minimum of 6 weeks in the last 6 months or details of engagement in other forms of active conservative non-operative treatment if the patient had any

prior spinal injections prior to epidural injections unless the medical reason this conservative treatment cannot be done is clearly documented; (AHRQ 2017; Manchikanti 2013; Summers 2013; ODG 2017); **OR**

d) Diagnostic transforaminal injection to identify the pain generator for surgical planning (Manchikanti 2013); **AND**

e) Pain causing functional disability or average pain levels of ≥ 6 on a scale of 0 to 10 (AHRQ 2013; Manchikanti 2011; NASS 2013; NASS 2012; Manchikanti 2013; Summers 2013).

II. FREQUENCY OF REPEAT THERAPEUTIC INJECTIONS:

1) Epidural injections may be repeated only as medically necessary. **Each** epidural injection requires an authorization and the following criteria must be met for repeat injections:

a) Documented proof that the prior injection had a positive response by significantly decreasing the patient's pain (at least 30% reduction in pain after initial injections **or** significant documented functional improvement) (NASS 2013; ODG 2017). Or a second injection may be performed at a different spinal level or with a different epidural technique if there is documentation of a question about the pain generator or there is evidence of multilevel pathology (ODG 2017); **AND**

b) No more than 3 procedures in a 12-week period of time per region with at least 14 days between injections in the initial diagnostic phase. At least 50% or more cumulative pain relief obtained for a minimum of 6 weeks after initial injections (Manchikanti 2013); **AND**

c) The patient continues to have ongoing pain or documented functional disability (pain causing functional disability or pain level ≥ 6 on a scale of 0 to 10 (AHRQ 2013; Manchikanti 2011; NASS 2013; Manchikanti 2013; Summers 2013); **AND**

d) The patient is actively engaged in other forms of active conservative non-operative treatment (unless pain prevents the patient from participating in conservative therapy*) (AHRQ 2013; Qassem 2017; Summers 2013);.**AND**

e) In the first year of treatment, which may include an initial series of 3 injections in the initial diagnostic phase and additional injections in the treatment phase, a total of 6 epidural injections may be performed (Manchikanti 2013).

f) Repeat injections after the initial diagnostic phase should be done at intervals of at least 2 months provided that previous injections resulted in at least 50% relief or functional improvement for at least 2 months and are limited to a maximum total of 4 therapeutic procedures per region per 12 months (Manchikanti 2013; NASS 2013). If special circumstances are documented (e.g elderly patient with severe spinal stenosis and not an operative candidate) then repeat injections are limited to a maximum of 6 procedures in 12 months (NASS 2013).

NOTE: Each epidural injection requires an authorization.

g) If the neural blockade is applied for different regions), injections may be administered at intervals of no sooner than 7 days for most types of procedures (Manchikanti 2013).

h) *Injecting multiple regions or performing multiple procedures during the same visit may be deemed medically* ***unnecessary*** *unless documentation is provided outlining an unusual situation (ODG 2017).*

i) No more than 2 levels of transforaminal blocks should be done in one day (ODG 2017).

NOTE: An injection of opioid or other substance for the purpose of completing a trial for an implantable infusion pump is approvable.

III. CONTRAINDICATIONS FOR EPIDURAL INJECTIONS

1) Bleeding diathesis and full anticoagulation (risk of epidural hematoma);
2) Severe spinal stenosis resulting in intraspinal obstruction;
3) Local infection at injection site;
4) Predominantly psychogenic pain;
5) Sepsis;
6) Hypovolemia;
7) Uncontrolled diabetes;
8) Uncontrolled glaucoma;
9) High concentrations of local anesthetics in patients with multiple sclerosis;
10) For diagnosis or treatment of facet mediated pain;
11) Known or suspected allergic reaction to steroid medications;
12) Spinal infection; OR
13) Acute fracture.

IV. ADDITIONAL INFORMATION:

1) ***Conservative Therapy:** (Spine) should include a multimodality approach consisting of a combination of active and inactive components. Inactive components, such as rest, ice, heat, modified activities, medical devices, acupuncture and/or stimulators, medications, injections (including trigger point), and diathermy can be utilized. Active modalities may consist of physical therapy, a physician supervised home exercise program**, and/or chiropractic care (AHRQ 2013; Qassem 2017; Summers 2013).

2) ****Home Exercise Program** - (HEP) – the following two elements are required to meet guidelines for completion of conservative therapy:
   a) Information provided on exercise prescription/plan and may include yoga, Tai chi, or supervised aerobic exercise (Qassem 2017; Sculpo 2001), AND
   b) Follow up with member with documentation 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) (AHRQ 2013; Qassem 2017; Summers 2013).
3) **Terminology**: Interlaminar Epidural; Selective Nerve Root Injection (transforaminal only); Transforaminal Injection; Injections of Spinal Canal
4) **Hip-spine syndrome** - Hip-spine syndrome is a condition that includes both debilitating hip osteoarthritis and low back pain. Abnormal spinal sagittal alignment and difficulty in maintaining proper balance, as well as a wobbling gait, may be caused by severe

osteoarthritis of the hip joint. Epidural injections are used to determine a primary pain generator in this condition.

5) **Spondylolisthesis and nerve root irritation** - 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 most common cause, in adults, is degenerative disease although it may also result from bone diseases and fractures. Degenerative spondylolisthesis is not always symptomatic. Epidural injections may be used to determine a previously undocumented nerve root irritation as a result of spondylolisthesis.
6) **Lumbar spinal stenosis with radiculitis** - 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 radiation down the posterior part of the leg to the feet." 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. The most common levels of stenosis are L3 through L5, but it may occur at multilevels in some patients. Radiculitis is the inflammation of a spinal nerve root that causes pain to radiate along the nerve paths. Epidural injections help to ascertain the level of the pain generator in this condition.
7) **Postoperative epidural fibrosis** - Epidural fibrosis is a common cause of failed back surgery syndrome. With the removal of a disc, the mechanical reason for pain may be removed, but an inflammatory condition may continue after the surgery and may cause pain. Epidural corticosteroids, with their anti-inflammatory properties, are used to treat postoperative fibrosis and may be used along with oral Gabapentin to reduce pain.

8) **Lumbar herniated disc** - Epidural steroid injections have been proven to be effective at reducing symptoms of lumbar herniated discs. Evidence shows that they can be successful in 42% to 56% of patients who do not improve after 6 weeks of conservative treatment. Observation and epidural steroid injection are effective nonsurgical treatments for this condition.
9) **Failed back surgery syndrome** - Failed back surgery syndrome (FBSS) is characterized by persistent or recurring low back pain, with or without sciatica, following lumbar surgery. The most common cause of FBSS is epidural fibrosis which be triggered by a surgical procedure such as discectomy. The inflammation resulting from the surgical procedure may start the process of fibrosis and cause pain. Epidural steroid injections are administered to reduce pain.

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64490-64493 – Paravertebral Facet Joint Injections/Blocks

CPT Codes:

Cervical Thoracic Region: 64490 (+ 64491, +64492)

Lumbar Sacral Region: 64493 (+64494, +64495)

INTRODUCTION

Facet joints (also called zygapophysial joints or z-joints), posterior to the vertebral bodies in the spinal column and connecting the vertebral bodies to each other, are located at the junction of the inferior articular process of a more cephalad vertebra and the superior articular process of a more caudal vertebra. These joints provide stability and enable movement, allowing the spine to bend, twist, and extend in different directions. They also restrict hyperextension and hyperflexion.

Facet joints are clinically important spinal pain generators in patients with chronic spinal pain. In patients with chronic low back pain, facet joints have been implicated as a cause of the pain in 15% to 45% of patients. Facet joints are considered as the cause of chronic spinal pain in 48% of patients with thoracic pain and 54% to 67% of patients with chronic neck pain. Facet joints may refer pain to adjacent structures, making the underlying diagnosis difficult as referred pain may assume a pseudoradicular pattern. Lumbar facet joints may refer pain to the back, buttocks, and lower extremities while cervical facet joints may refer pain to the head, neck and shoulders.

Imaging findings are of little value in determining the source and location of 'facet joint syndrome', a term originally used by Ghormley and referring to back pain caused by pathology at the facet joints. Imaging studies may detect changes in facet joint architecture, but correlation between radiologic findings and symptoms is unreliable. Although clinical signs are also unsuitable for diagnosing facet joint-mediated pain, they may be of value in selecting patients for controlled local anesthetic blocks of either the medial branches or the facet joint itself.

Medical necessity management for paravertebral facet injections includes an initial evaluation including history and physical examination and a psychosocial and functional assessment. The following must be determined: nature of the suspected organic problem; non-responsiveness to conservative treatment*; level of pain and functional disability; conditions which may be contraindications to paravertebral facet injections; and responsiveness to prior interventions.

The most common source of chronic pain is the spine and about two-thirds of the U.S. population suffers from spinal pain sometime during their life span. Facet joint interventions are used in the treatment of pain in certain patients with a confirmed diagnosis of facet joint pain. Interventions include intraarticular injections and medial branch nerve blocks in the lumbar, cervical and thoracic spine. Prior to performing this procedure, shared decision-making between patient and physician must occur, and patient must understand the procedure and its potential risks and results. Facet joint injections or medial branch nerve blocks require guidance imaging.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual needs and based on an assessment of the local delivery system.

Indications for Facet Joint Injections or Medial Branch Nerve Blocks:

1) To confirm disabling non-radicular low back (lumbosacral),mid back (thoracic) or neck (cervical) pain*, suggestive of facet joint origin as documented in the medical record based upon ALL of the following:
    a) history, consisting of mainly axial or non-radicular pain unless stenosis is caused by synovial cyst (Khan, 2006; Manchikanti, 2009; Manchikanti, 2013); **AND**
    b) Lack of evidence, either for discogenic or sacroiliac joint pain as the main pain generators (Manchikanti, 2009; Manchikanti, 2013); **AND**
    c) Lack of disc herniation or evidence of radiculitis as the main pain generators unless stenosis is caused by synovial cyst (Khan, 2006; Manchikanti, 2009; Manchikanti, 2013); **AND**
    d) Facet blocks should not be performed at same levels as previous surgical fusion 15; **AND**
    e) Pain causing functional disability or average pain levels of ≥ 6 on a scale of 0 to 10 (AHRQ, 2013; Manchikanti, 2009; Manchikanti, 2013; Summers, 2013); **AND**
    f) Duration of pain of at least **3months** (Manchikanti, 2009; Manchikanti, 2013); **AND**
    g) Failure to respond to conservative non-operative therapy management* for a minimum of 6 weeks in the last 6 months prior to facet injections or details of active engagement in other forms of active conservative non-operative treatment if the patient had prior spinal injections unless the medical reason this treatment cannot be done is clearly documented (AHRQ, 2013; Manchikanti, 2013; ODG, 2017; Summers, 2014); **AND**
    h) All procedures must be performed using fluoroscopic or CT guidance (AHRQ, 2013).

NOTE: Ultrasound guidance is not a covered benefit and procedure performed using ultrasound guidance are not reimbursable.

II. **FREQUENCY OF FACET BLOCK:**

1) There must be **a minimum of 14 days** between injections (Manchikanti, 2013).
2) There must be a positive response of ≥ 50% pain relief or improved ability to function or a change in technique, for example from an initial intraarticular facet block to a facet joint nerve block can be considered. Repeat therapeutic injections should be performed at a frequency of 2 months or longer provided that at least 50% relief is obtained for a minimum of 2 months after the previous injection (Manchikanti, 2013). The patient is actively engaged in other forms of active conservative non-operative treatment if the patient is receiving therapeutic facet joint injections unless pain prevents the patient from participating in conservative therapy*) (AHRQ, 2013; Qassem, 2017; Summers, 2013).
3) **In the diagnostic phase a maximum of 2 procedures may be performed. In the therapeutic phase a maximum of 4 procedures per region every 12 months except under unusual circumstances such as a recurrent injury.** (*NOTE: Unilateral facet blocks performed at the same level on the right vs. left within 2 weeks of each other would be considered as one procedure) (Manchikanti, 2013).*

4) If the procedures are applied for different regions, they may be performed at intervals **1-2 weeks** for most types of procedures (Manchikanti, 2013).
5) **Radiofrequency** neurolysis procedures should be considered in patients with positive facet blocks (**with at least 70% pain** relief and/or improved ability to **function, but with insufficient sustained** relief (less than 2-3 months improvement) (AHRQ, 2013; Manchikanti, 2013; Summers, 2013; ODG, 2017).
6) The patient continues to have ongoing pain or documented functional disability (pain causing functional disability or pain level ≥ 6 on a scale of 0 to 10) (AHRQ, 2013; Manchikanti, 2009; Manchikanti, 2013; Summers, 2013).

III. CONTRAINDICATIONS FOR FACET JOINT INJECTIONS:

1) History of allergy to contrast administration, local anesthetics, steroids, or other drugs potentially utilized;
2) Hypovolemia;
3) Infection over puncture site;
4) Bleeding disorders or coagulopathy;
5) History of allergy to medications to be administered;
6) Inability to obtain percutaneous access to the target facet joint;
7) Progressive neurological disorder which may be masked by the procedure;
8) Pregnancy;
9) Spinal infection; OR
10) Acute fracture

IV. ADDITIONAL INFORMATION:

1) ***Conservative Therapy:** (Spine) should include a multimodality approach consisting of a combination of active and inactive components. Inactive components, such as rest, ice, heat, modified activities, medical devices, acupuncture and/or stimulators, medications, injections (including trigger point), and diathermy can be utilized. Active modalities may consist of physical therapy, a physician supervised home exercise program**, and/or chiropractic care (AHRQ, 2013; Qassem, 2017; Summers, 2013).
2) ****Home Exercise Program** - (HEP) – the following two elements are required to meet guidelines for completion of conservative therapy:
   a) Information provided on exercise prescription/plan and may include yoga, Tai chi, or supervised aerobic exercise (Qassem, 2017; Sculpo, 2001), AND
   b) Follow up with member with documentation 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).
3) **Terminology:** Facet Injections; Facet Joint Blocks; Paravertebral Facet Injections; Paravertebral Facet Joint Injections; Paravertebral Facet Joint Nerve Injections; Zygapophyseal injections; Lumbar Facet Blockade; Medial Branch blocks

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64633-64635 – Paravertebral Facet Joint Neurolysis

CPT Codes:

Cervical Thoracic Region: 64633, +64634

Lumbar Sacral Region: 64635, +64636

INTRODUCTION

Facet joints (also called zygapophysial joints or z-joints), posterior to the vertebral bodies in the spinal column and connecting the vertebral bodies to each other, are located at the junction of the inferior articular process of a more cephalad vertebra and the superior articular process of a more caudal vertebra. These joints provide stability and enable movement, allowing the spine to bend, twist, and extend in different directions. They also restrict hyperextension and hyperflexion.

Facet joints are clinically important spinal pain generators in patients with chronic spinal pain. Pain mediated by the facet joints may be caused by repetitive stress and/or cumulative low-level trauma resulting in osteoarthritis and inflammation. In patients with chronic low back pain, facet joints have been implicated as a cause of the pain in 15% to 45% of patients. They are considered as the cause of chronic spinal pain in 48% of patients with thoracic pain and 54% to 67% of patients with chronic neck pain. Facet joints may refer pain to adjacent structures, making the underlying diagnosis difficult as referred pain may assume a pseudoradicular pattern. Lumbar facet joints may refer pain to the back, buttocks, and proximal lower extremities while cervical facet joints may refer pain to the head, neck and shoulders.

Imaging findings are of little value in determining the source and location of 'facet joint syndrome', a term originally used by Ghormley and referring to back pain caused by pathology at the facet joints. Imaging studies may detect changes in facet joint architecture, but correlation between radiologic findings and symptoms is unreliable. Although clinical signs are also unsuitable for diagnosing facet joint-mediated pain, they may be of value in selecting patients for controlled local anesthetic blocks of either the medial branches or the facet joint itself. This is an established tool in diagnosing facet joint syndrome.

Facet joints are known to be a source of pain with definitive innervations. Interventions used in the treatment of patients with a confirmed diagnosis of facet joint pain include: medial branch nerve blocks in the lumbar, cervical and thoracic spine; and radiofrequency neurolysis (*see additional terminology*). The medial branch of the primary dorsal rami of the spinal nerves has been shown to be the primary innervations of facet joints. Substance P, a physiologically potent neuropeptide considered to play a role in the nociceptive transmission of nerve impulses, is found in the nerves within the facet joint.

Radiofrequency neurolysis is a minimally invasive treatment for cervical, thoracic and lumbar facet joint pain. It involves using energy in the radiofrequency range to cause necrosis of specific nerves

(medial branches of the dorsal rami), preventing the neural transmission of pain. The objective of radiofrequency neurolysis is to both provide relief of pain and reduce the likelihood of recurrence.

Members of the American Society of Anesthesiologists (ASA) and the American Society of Regional Anesthesia and Pain Medicine (ASRA) have agreed that conventional or thermal radiofrequency ablation of the medial branch nerves to the facet joint should be performed for neck or low back pain. Radiofrequency neurolysis has been employed for over 30 years to treat facet joint pain. Prior to performing this procedure, shared decision-making between patient and physician must occur, and patient must understand the procedure and its potential risks and results.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual needs and based on an assessment of the local delivery system.

I. **INDICATIONS FOR THERAPEUTIC PARAVERTEBRAL FACET JOINT DENERVATION (RADIOFREQUENCY NEUROLYSIS)** (local anesthetic block followed by the passage of radiofrequency current to generate heat and coagulate the target medial branch nerve)

1) Positive response to one or two controlled local anesthetic blocks of the facet joint nerves(medial branch blocks), with at least 70% pain relief and/or improved ability to function for a minimal duration at least equal to that of the local anesthetic, but with insufficient sustained relief (less than 2-3 months relief); *AND* a failure to respond to more active conservative non-operative management for a minimum of 6 weeks in the last 6 months unless the medical reason this treatment cannot be done is clearly documented (AHRQ 2013; Manchikanti, 2009; Manchikanti, 2013; Summers, 2013;); **OR**
2) Positive response to prior radiofrequency neurolysis procedures with at least 50% pain relief and/or improved ability to function for at least 4 months, and the patient is actively engaged in other forms of appropriate active conservative non-operative treatment (unless pain prevents the patient from participating in conservative therapy*) (AHRQ, 2013; Manchikanti, 2013; Qassem, 2017; Sculpo, 2001; Summers, 2013); **AND**
3) The presence of ALL of the following:
   a) Lack of evidence that the primary source of pain being treated is from discogenic pain, sacroiliac joint pain, disc herniation or radiculitis (Manchikanti, 2009; Manchikanti, 2013);
   b) Pain causing functional disability or an average pain levels of ≥ 6 on a scale of 0 to 10 prior to each radiofrequency procedure including radiofrequency procedures done unilaterally on different days (AHRQ, 2013; Manchikanti, 2009; Manchikanti, 2013; Summers, 2013);
   c) Duration of pain of at least 3 months (AHRQ, 2013; Manchikanti, 2013; Summers, 2013)

II. **FREQUENCY:**

1) Limit to 2 facet neurolysis procedures every 12 months, per facet joint (Manchikanti, 2013).

   NOTE: Unilateral radiofrequency denervations performed at the same level on the right vs left within 2 weeks of each other would be considered as one procedure toward the total number of radiofrequency procedures allowed per 12 months. Every radiofrequency procedure requires pre-authorization.

III. **CONTRAINDICATIONS FOR PARAVERTEBRAL FACET JOINT DENERVATION (RADIOFREQUENCY NEUROLYSIS):**

1) History of allergy to local anesthetics or other drugs potentially utilized;
2) Lumbosacral radicular pain (dorsal root ganglion);
3) Conditions/diagnosis for which procedure is used are other than those listed in Indications;
4) Absence of positive diagnostic blocks; OR
5) For any nerve other than the medial branch nerve.

IV. **ADDITIONAL INFORMATION:**

1) ***Conservative Therapy:** (Spine) should include a multimodality approach consisting of a combination of active and inactive components. Inactive components, such as rest, ice, heat, modified activities, medical devices, acupuncture and/or stimulators, medications, injections (including trigger point), and diathermy can be utilized. Active modalities may consist of physical therapy, a physician supervised home exercise program**, and/or chiropractic care (AHRQ, 2013; Summers, 2013; Qassem, 2017).
2) ****Home Exercise Program** - (HEP) – the following two elements are required to meet guidelines for completion of conservative therapy:
   a) Information provided on exercise prescription/plan and may include yoga, Tai Chi, or supervised aerobic exercise (Qassem, 2017; Sculpo, 2001); **AND**
   b) Follow up with member with documentation provided regarding completion of HEP, (after suitable 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).
3) **Terminology:** Paravertebral Facet Joint Denervation, Radiofrequency Neurolysis, Destruction Paravertebral Facet Joint Nerve, Facet Joint Rhizotomy, Facet Neurolysis, Medial Branch Radiofrequency Neurolysis, Medial Branch Radiofrequency Neurotomy or Radiofrequency Denervation.

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27096 – Sacroiliac Joint Injections

CPT Codes: 27096

INTRODUCTION

This guideline addresses the use of sacroiliac joint injections for the treatment of low back pain that originates in the region of the sacroiliac joint. An injection of anesthetic and/or steroid may be used for the diagnosis and treatment of sacroiliac joint (SIJ) pain syndrome disorders (such as degenerative joint disease, postsurgical injuries, or traumatic injuries), or for treatment of spondyloarthropathy (inflammatory disorders of the joints and ligaments of the spine).

Sacroiliac joint injections are typically used for the following conditions:

Sacroiliac joint pain syndrome may be caused by various events, including pain secondary to postsurgical or traumatic injury, degeneration (wear and tear), or pregnancy. Physical examination (history and physical, provocative maneuvers) and diagnostic injection help to identify the source of pain as the SIJ.

Diagnostic SIJ injections are used to determine if the SIJ pain originates with the SIJ. Diagnostic blocks can reveal (or fail to reveal) that the source of pain is originating from the SIJ, and then an appropriate treatment plan can be developed (Curatolo et al, 2010; Manchikanti et al, 2013a).

Therapeutic SIJ injections may be used to treat SIJ pain once it has been determined that the SIJ is the origin of the pain. A therapeutic injection typically includes a corticosteroid and a local anesthetic that can be injected directly into the joint (intra-articular) or into the tissues surrounding the joint (periarticular).

Spondyloarthropathy (also known as spondyloarthritis) is the name for a family of rheumatic diseases that cause arthritis. Sacroiliitis is a key indicator of spondyloarthritis and is diagnosed with imaging. Patients with spondyloarthropathy are generally managed by rheumatologists and account for only a small percentage of the cases that present in interventional pain management settings.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual needs and based on an assessment of the local delivery system.

I. INDICATIONS FOR SACROILIAC JOINT INJECTIONS (SJI)

1) **For the treatment of SIJ pain:**

All of the following must be met:

a) Low back pain maximal below level of L5 which may radiate to the groin or lower extremity persisting at least 3 months (Manchikanti, 2013a; ODG, 2016); **AND**
b) Positive exam findings to suggest the diagnosis which may includ the pelvic distraction test, pelvic compression test, thigh thrust test, FABER (Patrick's test) or Gaenslen's test (Laslett, 2008; MacVicar, 2017; ODG, 2016); **AND**

c) Active conservative treatment for a minimum of 6 weeks in the last 6 months (including physical therapy, home exercise, patient education, psychosocial support, and/or medication) has failed unless the medical reason this conservative treatment cannot be done is clearly documented (AHRQ, 2013; Manchikanti, 2013a; ODG, 2016: Summers, 2013); **AND**
d) Pain causing functional limitations or average pain levels of ≥ 6 on a scale of 0 to 10 (AHRQ, 2013; Manchikanti, 2009; Manchikanti, 2013a; Summers, 2013); **AND**
e) Lack of evidence for disc-related pain or facet joint pain as the main pain generators (Manchikanti, 2009; Manchikanti, 2013a).

2) **For the treatment of spondyloarthropathy** (ACR 2012):

All of the following must be met:

a) The patient has experienced ≥ 3 months of low back pain; AND
b) Age of onset < 45 years; AND
c) Comprehensive pain management program including physical therapy, home exercise, patient education, psychosocial support and/or oral medication is in place; AND
d) Prior history of evidence of sacroiliitis on imaging (i.e., active inflammation on magnetic resonance imaging [MRI] or definite radiographic sacroiliitis grade > 2 bilaterally *or* grade 3-4 unilaterally)*;* AND
e) ***1 or more*** spondyloarthropathy features:
   a. Inflammatory back pain with **at least 4** of the following criteria present:
      (1) Age at onset < 45 years
      (2) Insidious onset
      (3) Improvement with exercise
      (4) No improvement with rest
      (5) Pain at night (with improvement upon getting up)
f) Arthritis
g) Enthesitis of the heel (irritability of muscles, tendons, or ligaments where they enter the bone)
h) Uveitis (inflammation of the uvea, the middle layer of the eye)
i) Dactylitis (inflammation of a finger or toe)
j) Psoriasis
k) Crohn's/colitis
l) Good response to NSAIDs
m) Family history of spondyloarthropathy
n) Positive testing for HLA-B27
o) Elevated C-reactive protein (CRP)

II. FREQUENCY OF REPEAT THERAPEUTIC INJECTIONS

1) SIJ injections may be repeated up to 2 times in the initial treatment phase no sooner than 2 weeks apart provided that at least 50% relief is obtained (Manchikanti, 2013a); **AND**

2) SIJ injections may only be repeated after the initial treatment phase if symptoms recur and the patient has had at least a 50% improvement for a minimum of 6 weeks after each therapeutic injection (Manchikanti, 2013a); **AND**
3) The patient is actively engaged in other forms of active conservative non-operative treatment (unless pain prevents the patient from participating in conservative therapy (AHRQ, 2013; Qassem, 2017; Summers, 2013); **AND**
4) Repeat injections should not be done more frequently than every two months for a total of 4 injections in a 12 month period (Manchikanti, 2013a); **AND**
5) Pain causing functional limitations or average pain levels of ≥ 6 on a scale of 0 to 10 (AHRQ, 2013; Manchikanti, 2009; Manchikanti, 2013a; Summers, 2013).

III. CONTRAINDICATIONS FOR SACROILIAC JOINT INJECTIONS

1) Active systemic infection
2) Skin infection at the site of needle puncture
3) Bleeding disorder or anticoagulation therapy
4) Uncontrolled high blood pressure
5) Uncontrolled diabetes
6) Unstable angina
7) Congestive heart failure
8) Allergies to contrast, anesthetics, or steroids (AAOS, 2009)

IV. ADDITIONAL INFORMATION

1) **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 (AHRQ, 2013; Qassem, 2017; Summers, 2013).
2) **Home Exercise Program - (HEP)** – the following two elements are required to meet guidelines for completion of conservative therapy:
   a) Information provided on exercise prescription/plan and may include yoga, Tai chi, or supervised aerobic exercise (Qassem, 2017; Sculpo, 2001); **AND**
   b) Follow up with member with information provided regarding completion of HEP (after suitable 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).

Low back pain is one of the most common of all spinal pain problems. According to the Centers for Disease Control and Prevention (CDC), the prevalence of low back pain in adults 18 years of age and older is 28.4% and may range as high as 32.1% in adults ≥ 75 years (CDC, 2012). Symptoms of low back pain may arise from multiple sites, including lumbar intervertebral discs, facet joints, sacroiliac joints, ligaments, fascia, muscles, and nerve root dura. The sacroiliac joint has been shown to be a source of pain in 10% to 27% of chronic low back pain (Hansen et al, 2007; Simopoulos et al, 2012; Manchikanti et al, 2013a).

The sacroiliac joint (SIJ) is located between the sacrum (located at the base of the spine) and the pelvis, and supports the weight of the upper body in the standing position. There are SIJs in both the right and left side of the lower back. Strong ligaments hold the joints in place. The SIJ is well innervated and has been shown to be capable of being a source of low back pain and referred pain in the lower extremity. Low back pain originating from the SIJ can result from inflammatory conditions such as sacroiliitis, spondyloarthropathy (ankylosing spondylitis; rheumatoid spondylitis), or from postsurgical or traumatic injury, degeneration (wear and tear), or pregnancy. SIJ pain most often occurs in the buttocks and lower back, and may radiate down through the buttocks and the leg. Physical examination and radiographic techniques may confirm a diagnosis related to spondyloarthropathy. Physical examination, including provocative maneuvers to elicit pain response, and controlled SIJ injections can help diagnose noninflammatory pain arising from the SIJ (Hansen et al, 2007; Medline Plus, 2012; Mayo Clinic, 2013).

In order to confirm correct placement of the injectable medication into the intra-articular space, fluoroscopic or computed tomography (CT) guidance is used. A periarticular injection into the soft tissue may be used if ligamentous or muscular attachments are suspected to be involved. The goal of the therapeutic injection is to reduce inflammation and/or pain and provide longer pain relief. Long-term relief is generally defined as 6 weeks or longer, but positive responders generally have a much longer duration of response; serial injections may be required in order to maintain therapeutic effectiveness (Hansen et al, 2007; AAOS, 2009; Luukkainen et al, 2002; Hawkins et al, 2009).

Spinal injections for the treatment of SIJ pain syndrome are typically performed as one part of a comprehensive treatment program, which will nearly always include an exercise program to improve or maintain spinal mobility. Potential candidates for SIJ injections include those with low back pain originating from the SIJ that is unresponsive to conservative treatments.

Treatment for SIJ pain depends upon the signs and symptoms, as well as the underlying cause for the pain. Medications, such as over-the-counter analgesics, a short course of narcotics, muscle relaxants or tumor necrosis factor (TNF) inhibitors, such as etanercept (Enbrel), adalimumab (Humira), or infliximab (Remicade), may be prescribed. Therapy sessions with a physical therapist involving range-of-motion, stretching, and strengthening exercises may be used to maintain joint flexibility and strengthen the muscles. Other interventional procedures used to treat SIJ pain include corticosteroid injections to reduce inflammation and pain, radiofrequency denervation, electrical stimulation, or in rare cases, joint fusion (Mayo Clinic, 2013).

The indications for coverage for the treatment of spondyloarthropathy have been established through use of the reviewed clinical studies and through criteria developed by the Assessment of SpondyloArthritis International Society (ASAS) for the classification of axial spondyloarthritis (Sieper et al, 2009). They are in keeping with the benefit guidelines developed by the Centers for Medicare & Medicaid Services (CMS).

While evidence supports that SIJ injection is an effective method of determining the source of pain, evidence supporting the efficacy of SIJ in the treatment of SIJ pain syndrome is considerably limited. There are limited controlled or prospective clinical studies to support SIJ injection for therapeutic purposes. Despite the limited quality of the clinical studies

supporting SIJ injection for the treatment of SIJ pain, the procedure is recommended by the American Society of Anesthesiologists (ASA) and the American Society of Regional Anesthesia and Pain Management (ASRAPM) Practice Guidelines. The indications for coverage have been established from the 2009 *Comprehensive Evidence-Based Guidelines for Interventional Techniques in the Management of Chronic Spinal Pain*, and updated with the 2013 *An Update of Comprehensive Evidence-Based Guidelines for Interventional Techniques in Chronic Spinal Pain. Part II: Guidance and Recommendations.*

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TOC

27132 – Hip Arthroplasty

CPT Codes: 27132, 27134, 27137, 27138

INTRODUCTION:

This guideline addresses elective, non-emergent hip arthroplasty (hip replacement) procedures, including total hip arthroplasty, resurfacing arthroplasty, and revision/conversion arthroplasty procedures.

Arthritis is the most common cause of chronic hip pain and disability. Degenerative, age-related osteoarthritis causes cartilage to wear away and eventually the bones within the joint rub against each other causing pain and stiffness. In a total hip replacement, the femoral head and acetabulum are removed and replaced with prosthetic components. In hip resurfacing arthroplasty, a metal cup is placed in the acetabulum and a metal cap is placed over the head of the femur with limited removal of the femoral head and neck.

In some cases, the hip prosthesis may wear out or loosen. If loosening is painful, a second surgery, such as a revision or conversion may be necessary. In this procedure some or all of the components of the original replacement prosthesis are removed and replaced with new ones.

Hemiarthroplasty or partial hip replacement involves the reconstruction of the femoral head but not the acetabulum. This procedure is indicated for select traumatic events, guidelines for which fall outside of the scope of this document.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual patient needs and based on an assessment of the local delivery system.

General Requirements

Elective hip arthroplasty may be considered if the following general criteria are met:

- Defined as a deviation from normal hip function, which may include painful weight bearing; painful or inadequate range of motion to accomplish age-appropriate activities of daily living (ADLs) and/or employment; and mechanical catching, locking.
- Patient is medically stable with no uncontrolled comorbidities (such as diabetes)
- Patient does not have an active local or systemic infection
- Patient does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in treatment program
- Patient has good oral hygiene and does not have major dental work scheduled or anticipated (ideally within one year of joint replacement), due to increased post-surgical infection risk.

Clinical notes should address

- Symptom onset, duration, and severity;
- Loss of function and/or limitations;

- Type and duration of non-operative management modalities.

Non-operative management must include at least **two** or more of the following unless otherwise specified in clinical indications below:

- Rest or activity modifications/limitations;
- Weight reduction for patient with elevated BMI;
- Protected weight-bearing with cane, walker or crutches;
- Physical therapy modalities;
- Physician-supervised exercise program (including home exercise program);
- Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics;
- Intra-articular injection(s)

Clinical Indications:

Total Hip Arthroplasty (THA)

THA may be considered medically necessary when the following criteria are met:

a) Hip pathology is due to rheumatoid arthritis, femoral neck fracture in the setting of pre-existing arthritis, malignancy, failure of previous surgery, dysplasia, or avascular necrosis with collapse, confirmed by imaging.

OR

b) When **ALL** of the following criteria are met:
   i) Pain due to advanced osteoarthritis (Kellgren-Lawrence grade 3 or 4 or Tönnis grade 2 or 3 [see grading appendix]) **and** documented loss of function that has been present for at least 6 months;
   ii) Failure of at least 3 months of non-operative treatment, including at least **two** of the following:
      a. Rest or activity modifications/limitations
      b. Weight reduction for patient with elevated BMI
      c. Protected weight-bearing with cane, walker or crutches
      d. Physical therapy modalities
      e. Physician-supervised exercise program (including home exercise program)
      f. Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics
      g. Intra-articular corticosteroid injection
   iii) Physical exam demonstrates findings of hip pathology as evidenced by one or more of the following:
      (1) Painful, limited range of motion or antalgic gait
      (2) Contracture
      (3) Crepitus
      (4) Leg length difference;
   iv) Imaging demonstrates advanced hip joint arthritis of at least Kellgren-Lawrence grade 3 or 4 or Tönnis grade 2 or 3 [see grading appendix];
   v) No injection into the joint within 3 months of surgery.

Relative Contraindications:

- Metal allergy (dependent upon implant choice)
- Chronic renal insufficiency (due to metal ions circulating and potential renal toxicity)

Absolute Contraindications:

- Any injection into the joint within 3 months of surgery
- Local or remote active infection
- Female of child-bearing age (due to metal ions circulating in blood with potential risk to fetus) (Note: this only applies to metal on metal replacements)

Hip Resurfacing Arthroplasty:

Hip resurfacing procedures will be reviewed on a case by case basis.

Hip resurfacing arthroplasty may be considered medically necessary when **ALL** of the following criteria are met:

a) Pain and documented loss of function are present for at least 6 months;
b) 3 months of non-operative treatment have failed to improve symptoms;
c) Physical exam has typical findings of hip pathology as evidenced by one or more of the following:
   i) Painful, limited range of motion or antalgic gait
   ii) Contracture
   iii) Crepitus
   iv) Leg length difference;
d) Imaging demonstrates advanced hip joint pathology of at least Kellgren-Lawrence grade 3-4, Tönnis grade 2 or 3, or avascular necrosis involving less than 50% of the femoral head; [see grading appendix]
e) Male patient is less than 65 years old or female patient is less than 55 years old;
f) BMI less than 40;
g) No injection into the joint within 3 months of surgery;

Absolute Contraindications:

- Any injection into the joint within 3 months of surgery
- Osteoporosis or osteopenia (DEXA scan bone mineral density evaluation)
- Other co-morbidity (including medications that contribute to decreased bone mineral density (glucocorticoid steroids, heparin, aromatase inhibitors, thiazolidinediones, proton pump inhibitors, loop diuretics, cyclosporine, anti-retrovirals, anti-psychotics, anti-seizures, certain breast cancer drugs, certain prostate cancer drugs, depo-provera, aluminum-containing antacids) that may contribute to active bone demineralization
- Cystic degeneration at the junction of the femoral head and neck on radiographs or MRI or CT
- Malignancy at the proximal femur

- Evidence of current, ongoing, or inadequately treated hip infection, or sepsis
- Female of child-bearing age (due to metal ions circulating in blood with potential risk to fetus)
- Chronic renal insufficiency (due to metal ions circulating and potential renal toxicity)
- Metal allergy

Total Hip Arthroplasty Revision/Conversion Arthroplasty

Hip Revision/Conversion Arthroplasty may be considered medically necessary when a previous hip reconstruction meets **ALL** of the following criteria in either of the following subsections:

a) Previous removal of infected hip prosthesis AND no evidence of current, ongoing, or inadequately treated hip infection (ruled out by synovial fluid aspiration/biopsy (cell count and culture)) AND off antibiotics;

OR

a) When all of the following criteria are met:
   i) Failed hip arthroplasty as defined by symptomatic and unstable joint upon physical exam (documented persistent, severe and disabling pain, loss of function);
   ii) Physical exam and radiographic evidence supports extensive disease or damage due to fracture, malignancy, osteolysis, other bone or soft-tissue reactive or destructive process, inappropriate positioning of components, recurrent instability, subluxation, dislocation, or other mechanical failure. (NOTE: MRI is used less often in these circumstances unless it is a metal-on-metal prosthesis and looking for soft-tissue lesions; x-ray, CT, nuclear studies are used more frequently);
   iii) No evidence of current, ongoing, or inadequately treated hip infection (ruled out by synovial fluid aspiration/biopsy (cell count and culture)) AND off antibiotics

Note: Removal of infected hip prosthesis and subsequent insertion of antibiotic spacer is not considered an elective surgery.

Non-Covered Services:

The following procedures are not considered a covered service and are not reimbursable based on lack of current scientific evidence for clinically important improvement, safety or efficacy; or based on scientific evidence of increased risk of serious complications:

- Procedures utilizing computer-navigated or patient-specific or gender-specific instrumentation.

Grading Appendix

Kellgren-Lawrence Grading System:

MRI should not be the primary tool used to determine the presence or severity of arthritic changes in the joint.

Grade	Description
0	No radiographic features of osteoarthritis
1	Possible joint space narrowing and osteophyte formation
2	Definite osteophyte formation with possible joint space narrowing
3	Moderate multiple osteophytes, definite narrowing of joint space, some sclerosis and possible deformity of bone contour (*some sclerosis and cyst formation and deformity of femoral head and acetabulum*)
4	Large osteophytes, marked narrowing of joint space, severe sclerosis and definite deformity of bone contour (*increased deformity of the femoral head and acetabulum*)

Tönnis Classification of Osteoarthritis by Radiographic Changes

Grade	Description
0	No signs of osteoarthritis
1	Mild: Increased sclerosis, slight narrowing of the joint space, no or slight loss of head sphericity
2	Moderate: Small cysts, moderate narrowing of the joint space, moderate loss of head sphericity
3	Severe: Large cysts, severe narrowing or obliteration of the joint space, severe deformity of the head

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TOC

27130 – Hip Arthroscopy

CPT Codes: 27130, S2118, 29860, 29861, 29862, 29863, 29914, 29915, 29916

INTRODUCTION:

This guideline addresses the following elective, non-emergent, arthroscopic hip repair procedures:

- Diagnostic arthroscopy
- Femoroacetabular Impingement (FAI)
- Labral Repair Only
- CAM, Pincer, CAM & Pincer combined
- Synovectomy, Biopsy, or Removal of Loose or Foreign Body
- Chondroplasty or abrasion for Chondral injuries, chondromalacia

Arthroscopy introduces a fiber-optic camera into the hip joint through a small incision for diagnostic visualization purposes. This camera may also be used in the surrounding extra-articular areas, in a procedure called endoscopy. Other instruments may then be introduced to remove, repair, or reconstruct joint pathology.

Open, non-arthroplasty hip repair surgeries are performed as dictated by the type and severity of injury and/or disease.

Surgical indications are based on relevant clinical symptoms, physical exam, radiologic findings, and response to non-operative, conservative management when medically appropriate.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual needs and based on an assessment of the local delivery system.

General Requirements

- Elective arthroscopic surgery of the hip may be considered if the following general criteria are met:
  - There is clinical correlation of patient's subjective complaints with objective exam findings and/or imaging (when applicable);
  - Patient has limited function (age-appropriate activities of daily living (ADLs), occupational, athletic);
  - Patient is medically stable with no uncontrolled comorbidities (such as diabetes);
  - Patient does not have an active local or systemic infection;
  - Patient does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in treatment program

- Clinical notes should address:
  - Symptom onset, duration, and severity;

- Loss of function and/or limitations;
- Type and duration of non-operative management modalities (where applicable).

- Non-operative management must include **TWO** or more of the following, unless otherwise specified:
  - Physical therapy or properly instructed home exercise program;
  - Rest or activity modification;
  - Ice/Heat;
  - Protected weight bearing;
  - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics;
  - Brace/orthosis;
  - Weight optimization;
  - Corticosteroid injections

Clinical Indications

Diagnostic Hip Arthroscopy

All requests for diagnostic hip arthroscopy will be considered and decided on a case-by-case basis and are rarely deemed medically necessary.

Diagnostic hip arthroscopy may be medically necessary when **ALL** of the following criteria are met:

a) At least 6 months of hip pain with documented loss of function;
b) Failure of at least 12 weeks of non-operative treatment, including at least **two** of the following;

i) Rest or activity modifications/limitations
ii) Ice/heat
iii) Protected weight bearing
iv) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
v) Brace/orthosis
vi) Physical therapy modalities
vii) Supervised home exercise
viii) Weight optimization
ix) Corticosteroid injection

c) Indeterminate radiographs **AND** MRI findings;
d) Radiographs demonstrate the following:

i) AP Pelvis radiograph: neck shaft angle 120-135 degrees, joint space >2 mm (weight-bearing), alpha angle less than 50 degrees, lateral center edge angle between 25-40 degrees, Tonnis angle between 0-10 degrees
ii) Dunn 45 radiograph: alpha angle less than 50 degrees
iii) Femoral head extrusion index less than 25%
iv) False profile radiograph (if obtained): anterior center edge angle between 25-40

As noted above, patient must have no evidence of any of the following: posterior wall sign, ischial spine sign, crossover sign, no protrusio acetabulae, fracture (femur, acetabulum), labral tear (on MRI or MR arthrogram), PVNS, synovial chondromatosis, intra-articular loose body, subchondral bone marrow edema, adductor tear, pubic edema, osteitis pubis, hamstring tear, abductor (gluteus medius, minimus) tear, ischiofemoral impingement (narrowed ischiofemoral and quadratus femoris spaces).

Femoroacetabular Impingement (FAI)

FAI is a condition characterized by a mechanical impingement between the femur (cam) and/or the acetabulum (pincer) that may result in labral injury (labral tear) or articular cartilage injury (chondral defect, arthritis). Up to 95% of labral tears are observed in the presence of FAI and "isolated" labral tears are very uncommon (as are labral tears caused by trauma).

There is no evidence to support hip arthroscopy for FAI and/or labral tear in an asymptomatic patient *and there is a very high prevalence of abnormal radiographs found in asymptomatic patients:*
33% of asymptomatic hips have a cam lesion, 66% of asymptomatic hips have a pincer lesion, and 68% of asymptomatic hips have a labral tear.

Even though hip dysplasia as well as symptomatic FAI and labral tears are believed to be precursors to hip arthritis, ***arthroscopy is never indicated for the treatment of osteoarthritis of the hip and rarely (if ever) indicated for dysplasia.***

Labral Repair

Arthroscopic labral repair may be medically necessary when **ALL** of the following criteria are met:

a) Hip or groin pain in positions of flexion and rotation that may be associated with mechanical symptoms of locking, popping, or catching;
b) Positive provocative test on physical exam with pain at the hip joint with flexion, adduction, and internal rotation;
c) Acetabular labral tear on MRI, with or without intra-articular contrast;
d) Failure of at least 6 weeks of non-operative treatment, including at least **two** of the following:
    i) Physical therapy or properly instructed home exercise program
    ii) Rest or activity modification
    iii) Ice/Heat
    iv) Protected weight bearing
    v) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics
    vi) Weight optimization
    vii) Corticosteroid injection
e) No evidence of hip joint arthritis, defined as a Tönnis Grade 2 or 3 (joint space less than 2 millimeters) on weight-bearing AP radiograph [see Grading Appendix];
f) Patient is less than 50 years of age.

NOTE: Arthroscopy of the hip for labral repair is considered not medically necessary in the presence of significant hip joint arthritis (Tonnis grade 2 or greater) [see grading appendix], dysplasia [see grading appendix] or other structural abnormality that would require skeletal correction.

CAM, Pincer, Combined CAM & Pincer Repair

Technically not a repair, this procedure involves bony decompression, shaving, osteoplasty, femoroplasty, acetabuloplasty, and/or osteochondroplasty. Greater than 95% of labral repairs should be performed with at least a femoral osteoplasty or an acetabuloplasty.

Arthroscopic CAM, Pincer or combined CAM and Pincer repair may be medically necessary when **ALL** of the following criteria are met:

a) Positional hip pain;
b) Failure of at least 6 weeks of non-operative treatment, including at least two of the following:
    i) Physical therapy or properly instructed home exercise program
    ii) Rest or activity modification
    iii) Ice/Heat
    iv) Protected weight bearing
    v) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics
    vi) Weight optimization
    vii) Corticosteroid injection
c) Positive impingement sign on physical exam (hip or groin pain with flexion, adduction and internal rotation (FADIR);
d) **ANY** of the following radiograph, CT and/or MRI findings of FAI:
    i) Nonspherical femoral head or prominent head-neck junction (pistol-grip deformity) with alpha angle >55 degrees indicating CAM impingement [see radiographic measurement appendix];
    ii) Overhang of the anterolateral rim of the acetabulum, posterior wall sign, prominent ischial spine sign, acetabular protrusion, or retroversion with a center edge (CE) angle >35° and/or cross-over sign indicating pincer deformity [see radiographic measurement appendix];
    iii) Combination of CAM and pincer criteria;
e) No evidence of hip joint arthritis, defined as a Tönnis Grade 2 or 3 (joint space less than 2 millimeters) on weight-bearing AP radiograph [see Grading Appendix];
f) Skeletally mature patient;
g) Under age < 50* years old;
h) BMI < 40*;
i) Radiographic images show no evidence of ANY indicators for hip dysplasia [see grading appendix].

Patients age > 50 years (with **no evidence of OA) or patients with BMI >40 will be reviewed on a case by case basis.*

NOTE: Arthroscopy of the hip for FAI is considered not medically necessary or contraindicated in the presence of significant hip joint arthritis (Tonnis grade 2 or greater) [see grading appendix], in the skeletally immature patient (open proximal femoral physis),

Arthroscopy for Synovectomy, Biopsy, or Removal of Loose or Foreign Body

Arthroscopic synovectomy, biopsy, removal of loose or foreign body, or a combination of these procedures may be medically necessary when the following criteria are met:

a) Radiographic evidence of acute post-traumatic intra-articular foreign body or displaced fracture fragment;

OR

b) When **ALL** of the following criteria are met:

i) Hip pain associated with grinding, catching, locking, or popping;
ii) Physical exam findings confirm painful hip with limited range of hip motion;
iii) Failure of at least 12 weeks of non-operative treatment, including at least two of the following:
   a. Physical therapy or properly instructed home exercise program
   b. Rest or activity modification
   c. Ice/Heat
   d. Protected weight bearing
   e. Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics
   f. Weight optimization
   g. Corticosteroid injection

iv) Radiographs, CT, and/or MRI demonstrate synovial proliferation, calcifications, nodularity, inflammation, pannus, loose body.

Shaving or debridement of articular cartilage (chondroplasty), and/or abrasion arthroplasty

There are no clinical indications for performing an independent debridement procedure within the hip. Debridement should always be combined or secondary to another procedure, and is primary performed within FAI procedures.

Extra-articular (Endoscopic) Hip Surgery

Arthroscopy for extra-articular hip pathology is recognized as a less invasive adjunctive tool to correct or minimize symptoms of structural pathology, but is not supported in current high level evidence-based literature.

Extra-articular hip applications may be used to minimize symptoms of internal snapping hip (internal coxa saltans, iliopsoas tendonitis, snapping iliopsoas), iliopsoas tendon at iliopectineal eminence or anterior inferior iliac spine, external snapping hip (external coxa saltans, snapping iliotibial band, iliotibial band at greater trochanter). May also include proximal hamstring endoscopy for partial tear of proximal hamstring with or without bursitis

or proximal hamstring, sciatic neurolysis, ischiofemoral decompression (for ischiofemoral impingement), or anterior inferior iliac spine (subspine) decompression for subspine impingement.

3 types of anterior inferior iliac spine:

- *Type 1: small, tip does not extend to sourcil;*
- *Type 2: medium, tip extends down to sourcil;*
- *Type 3: large, tip extends down below sourcil.*

Symptomatic patients with type 3 should be considered for surgical decompression. Most patients presenting with type 2 should be considered for surgical decompression. Patients presenting with type 1 should never require surgical decompression.

Requests for the use of arthroscopy to treat extra-articular hip pathology (endoscopy) will be decided on a case-by-case basis and when criteria in either of the following subsections are met:

a) Activity related painful snapping sensation around the hip joint caused by the iliotibial tract over the greater trochanter or bursa (external snapping hip) and/or the iliopsoas tendon over medial bony prominence or bursa (internal snapping hip) unresponsive to non-operative care;
OR

a) Activity related pain and tenderness at the greater or lesser trochanter due to bursal inflammation, tendinosis and/or tendinitis, or tear of the tendon (gluteus medius or minimus) unresponsive to non-operative care;
b) Failure of at least 6 months of non-operative treatment, including at least two of the following:
   i) Physical therapy or properly instructed home exercise program
   ii) Rest or activity modification
   iii) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics
   iv) Corticosteroid injection
c) Physical exam findings align with patient symptoms and at least one of the following documented:
   i) Limp or painful ambulation
   ii) Tenderness and/or crepitus to palpation
   iii) Visible, audible, or palpable snapping at the greater trochanter or pelvic brim
   iv) Pain and/or weakness with active or resisted motion of the hip
   v) Pain relief with diagnostic local anesthetic injection

Grading Appendix

Kellgren-Lawrence Grading System:

MRI should not be the primary tool used to determine the presence or severity of arthritic changes in the joint.

Grade	Description
0	No radiographic features of osteoarthritis
1	Possible joint space narrowing and osteophyte formation
2	Definite osteophyte formation with possible joint space narrowing
3	Moderate multiple osteophytes, definite narrowing of joint space, some sclerosis and possible deformity of bone contour (*some sclerosis and cyst formation and deformity of femoral head and acetabulum*)
4	Large osteophytes, marked narrowing of joint space, severe sclerosis and definite deformity of bone contour (*increased deformity of the femoral head and acetabulum*)

Tönnis Classification of Osteoarthritis by Radiographic Changes

Grade	Description
0	No signs of osteoarthritis
1	Mild: Increased sclerosis, slight narrowing of the joint space, no or slight loss of head sphericity
2	Moderate: Small cysts, moderate narrowing of the joint space, moderate loss of head sphericity
3	Severe: Large cysts, severe narrowing or obliteration of the joint space, severe deformity of the head

Hip Dysplasia:

Defined as any of the following criteria:

a) Lateral center edge angle <20 degrees
b) Anterior center edge angle <20 degrees
c) Tonnis angle >15 degrees
d) Femoral head extrusion index >25%

Radiographic Measurement Appendix

Harris et al. Radiographic Prevalence of Dysplasia, Cam, and Pincer Deformities in Elite Ballet. *The American Journal of Sports Medicine* 44.1 (2016): 20-27.

Alpha Angle:

- Alpha angle was measured on the AP pelvis and Dunn 45° radiographs. First, a Mose circle was placed around the circumference of the femoral head. A line was drawn from the center of the femoral head down the center of the femoral neck. A line was then drawn connecting the center of the femoral head to the point of the Mose circle where the head goes out of round. The angle bisecting these two lines was the alpha angle.
    - An alpha angle of 55° (Dunn 45°) or greater or an alpha angle of 50° (AP pelvis) was defined as cam morphology.

Femoral head extrusion:

- Femoral head extrusion index was measured as the proportion (%) of laterally uncovered femoral head versus the femoral head (horizontal distance).
    - A femoral head extrusion index greater than 25% defined dysplasia.

Global acetabular retroversion:

- Global acetabular retroversion was defined by the presence of a prominent ischial spine sign or posterior wall sign.
    - Prominent ischial spine sign: Visible ischial spine medial to the iliopectineal line on AP pelvis radiograph.
    - Posterior wall sign: Center of the femoral head lateral to the posterior wall of the acetabulum.

Lateral center edge angle:

- Lateral center edge angle was measured after multiple lines were drawn on the AP pelvis radiograph. First, a Mose circle was placed around the circumference of the femoral head. Next, a line was drawn connecting the ischial tuberosities. A perpendicular line was then drawn up through the center of the femoral head from the ischial tuberosity line. Then, a line was drawn from the center of the femoral head to the most lateral aspect of the sourcil. The angle bisecting the latter two lines was the lateral center edge angle.
    - A lateral center edge angle less than 20° defined dysplasia, 20 to 25° borderline dysplasia, 26 to 39° normal, and greater than 40° lateral overcoverage pincer impingement.
    - Lateral overcoverage was defined as a lateral center edge angle greater than 40°.

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27446 – Knee Arthroplasty

CPT Codes: 27446, 27447, 27486, 27487, 27488, 27438

INTRODUCTION:

This guideline addresses elective, non-emergent knee arthroplasty (knee replacement) procedures, including total knee arthroplasty (TKA), unicompartmental/unicondylar knee arthroplasty (UKA) or hemiarthroplasty (partial knee replacement), and revision arthroplasty procedures.

Arthroplasty describes the surgical replacement and reconstruction of a joint with implanted devices when the joint has been damaged by an arthritic or traumatic process. A normal knee functions as a hinge joint between the femur and the tibia. The surfaces where these bones meet can become worn out over time, due to arthritis or other conditions, which can cause pain and swelling.

TKA replaces and reconstructs all articular joint surfaces. In some cases, only one surface within the knee develops arthritis and associated pain and functional loss. In these cases, a partial knee replacement may be necessary to remove and reconstruct only the damaged region of the knee.

In some cases, the knee prosthesis may wear out or loosen. If loosening is painful, a revision surgery may be necessary. In this procedure some or all of the components of the original replacement prosthesis are removed and replaced with new ones.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual needs and based on an assessment of the local delivery system.

General Requirements

Elective knee arthroplasty may be considered if the following general criteria are met:

- Knee pain with documented loss of function, which may include painful weight bearing, painful or inadequate range of motion to accomplish age-appropriate activities of daily living (ADLs) and/or employment, and painful mechanical catching, locking, or popping
- Patient is medically stable with no *uncontrolled* comorbidities (such as diabetes)
- Patient does not have an active local or systemic infection
- Patient does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in treatment program
- Patient has good oral hygiene and does not have major dental work scheduled or anticipated (ideally within one year of joint replacement), due to increased post-surgical infection risk.

Clinical notes should address

- Symptom onset, duration, and severity;
- Loss of function and/or limitations;

- Type and duration of non-operative management modalities.

Non-operative management must include at least **TWO** or more of the following unless otherwise specified in clinical indications below:

- Rest or activity modifications/limitations;
- Weight reduction for patient with elevated BMI;
- Protected weight-bearing with cane, walker or crutches;
- Brace/orthosis;
- Physical therapy modalities;
- Physician-supervised exercise program (including home exercise program);
- Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics;
- Intra-articular injection(s)

Clinical Indications:

Total Knee Arthroplasty (TKA)

TKA may be considered medically necessary when the following criteria are met:

a) Extensive disease or damage due to rheumatoid arthritis, fracture, or avascular necrosis confirmed by imaging (radiographs, MRI or other advanced imaging) **and** persistent pain and documented loss of function. *NOTE: There is no medical necessity to perform TKA in patients with severe disease and no symptoms*.

OR

b) When **ALL** of the following criteria are met:

i) Pain due to advanced osteoarthritis (Kellgren-Lawrence (K-L) grade 3 or grade 4 degeneration [see grading appendix]) that is persistent and severe and/or patient has documented loss of function that has been present for at least 6 months resulting in a diminished quality of life;

ii) Failure of at least 3 months of non-operative treatment, including at least **two** of the following:
   a. Rest or activity modifications/limitations
   b. Weight reduction for patient with elevated BMI
   c. Protected weight-bearing with cane, walker or crutches
   d. Brace/orthosis
   e. Physical therapy modalities
   f. Physician-supervised exercise program (including home exercise program)
   g. Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics
   h. Injections: corticosteroid/viscosupplementation/PRP (platelet rich plasma);

iii) Physical exam findings demonstrate one or more of the following: tenderness, swelling/effusion, limited range of motion (decreased from uninvolved side or as compared to a normal joint), flexion contracture, palpable or audible crepitus, instability and/or angular deformity;

iv) Radiographic findings show evidence of advanced arthritic changes, documented by standing, weight-bearing radiographs described as Kellgren-Lawrence (K-L) grade 3 or

grade 4 degeneration. (MRI should not be the primary radiographic test used to determine the presence or severity of arthritic changes in the joint);

v) No injection into the joint within 3 months of surgery.

All requests for simultaneous bilateral total knee replacements will be reviewed on a case by case basis and records should clearly indicate why simultaneous TKA is preferable to staged procedures.

All requests for TKA in patients with chronic, painless effusion and extensive radiographic arthritis will be evaluated on a case-by-case basis.

Absolute contraindication:

- Active infection (local or remote)
- Any injection into the joint within 3 months of surgery

Relative contraindication:

- Prior infection at site (unless aspiration with cultures and serology [CBC with differential, ESR, CRP] demonstrates no infection). If prior infection at site, tissue biopsies should be sent intra-operatively to exclude latent/dormant infection.
- Extreme morbid obesity (BMI > 40)
- Extensor mechanism deficiency
- Neuropathic joint
- Severe peripheral vascular disease
- Compromised soft tissue envelope
- Uncontrolled comorbidities

Unicompartmental Knee Arthroplasty (UKA)/Partial Knee Replacement (PKA)

Unicompartmental knee arthroplasty (UKA) is also called partial replacement, hemiarthroplasty, unicondylar knee, or bicondylar knee arthroplasty. This procedure involves reconstruction of either the medial or lateral weight bearing compartment of the knee and/or patellofemoral joint. Medial UKA is performed more frequently than lateral procedures.

Medial or Lateral UKA/PKA may be medically necessary when **ALL** of the following criteria are met:

- At least 6 months of pain localized to the medial or lateral compartment;
- Failure of at least 3 months of non-operative treatment, including at least **two** of the following:
  i) Rest or activity modifications/limitations
  ii) Weight reduction for patient with elevated BMI
  iii) Protected weight-bearing with cane, walker or crutches
  iv) Brace/orthosis
  v) Physical therapy modalities
  vi) Physician-supervised exercise program (including home exercise program)
  vii) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics

viii) Injections: corticosteroid/viscosupplementation/PRP (platelet rich plasma);

- Total arc of motion (goniometer) > 90 degrees;
- Normal ACL or stable reconstructed ACL per physical exam test;
- Age > 50 years;
- Standing, weight-bearing radiographs demonstrate *only* unicompartmental disease (with or without patellofemoral involvement), described as Kellgren-Lawrence grade 3 or grade 4 degeneration. NOTE: MRI should not be the primary radiographic test used to determine the presence or severity of arthritic changes in the joint;
- Contracture < 5-10 degrees upon physical exam (goniometer);
- Angular deformity < 10 degrees, passively correctable to neutral upon physical exam (goniometer);
- BMI < 40;
- No injection into the joint within 3 months of surgery.

All requests for UKA in patients with chronic, *painless* effusion and extensive radiographic arthritis will be evaluated on a case-by-case basis.

Contraindications for Medial or Lateral UKA/PKA:

- Any injection into the joint within 3 months of surgery
- Local or systemic active infection
- Inflammatory arthritis
- Angular deformity or contracture greater than indicated range
- Significant arthritic involvement of other knee compartments
- ACL instability
- Poor bone quality or significant osteoporosis or osteopenia
- Meniscectomy of the opposite compartment
- Stiffness greater than indicated range of motion

Patellofemoral UKA/PKA may be medically necessary when **ALL** of the criteria are met within one of the following two subsections:

a) Failure of prior patellofemoral unloading procedures (Maquet, Fulkerson);
b) Failure of at least 3 months of non-operative treatment, including at least **two** of the following:
   i) Rest or activity modifications/limitations
   ii) Weight reduction for patient with elevated BMI
   iii) Protected weight-bearing with cane, walker or crutches
   iv) Brace/orthosis
   v) Physical therapy modalities
   vi) Physician-supervised exercise program (including home exercise program)
   vii) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics
   viii) Injections: corticosteroid/viscosupplementation/PRP (platelet rich plasma);
c) Standing, AP or PA weight-bearing radiographs (must include at least a lateral view and Merchant view) demonstrate only unicompartmental disease of the patellofemoral joint, described as Kellgren-Lawrence grade 3 or grade 4 degeneration, with no evidence of medial or lateral arthritis.

OR

a) At least 6 months of isolated patellar/anterior knee pain;
b) Patellar/anterior knee pain that is exacerbated by stairs, inclines, transfers or prolonged sitting;
c) Reproducible patellofemoral pain upon physical exam;
d) No ligamentous instability upon physical exam;
e) Failure of at least 3 months of non-operative treatment, including at least **two** of the following:
    i) Rest or activity modifications/limitations
    ii) Weight reduction for patient with elevated BMI
    iii) Protected weight-bearing with cane, walker or crutches
    iv) Brace/orthosis
    v) Physical therapy modalities
    vi) Physician-supervised exercise program (including home exercise program)
    vii) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics
    viii) Injections: corticosteroid/viscosupplementation/PRP (platelet rich plasma);
f) Standing, AP or PA weight-bearing radiographs (must include at least a lateral view and Merchant view) demonstrate only unicompartmental disease of the patellofemoral joint, described as Kellgren-Lawrence grade 3 or grade 4 degeneration, with no evidence of medial or lateral arthritis.

NOTE: MRI should not be the primary radiographic test used to determine the presence or severity of arthritic changes in the joint.

Contraindications for Patellofemoral UKA/PKA:

- Any injection into the joint within 3 months of surgery
- Local or systemic active infection
- Inflammatory arthritis
- Angular deformity or contracture greater than indicated range
- Significant arthritic involvement of the medial or lateral knee compartment(s)
- Ligament instability
- Poor bone quality or significant osteoporosis or osteopenia
- Stiffness greater than indicated range of motion

Revision Arthroplasty

Revision describes surgical reconstruction due to failure or complication of a previous arthroplasty.

Revision TKA may be considered medically necessary when the following criteria are met:

a) Previous removal of infected knee prosthesis AND no evidence of current, ongoing, or inadequately treated knee infection (ruled out by synovial fluid aspiration/biopsy (cell count and culture)) AND off antibiotics;

OR

b) When ALL of the following criteria are met:

i) Symptomatic UKA/PKA or TKA as evidence by persistent, severe disabling pain and loss of function;
ii) Any of the following findings upon physical exam: tenderness to palpation objectively attributable to the implant, swelling or effusion, pain on weight-bearing or motion, instability on stress-testing, abnormal or limited motion (compared to usual function), palpable or audible crepitus or "clunking" associated with reproducible pain;
iii) Aseptic loosening, instability, osteolysis, progressive bone loss, or mechanical failure confirmed on radiographic or advanced imaging (bone scan, CT scan, or MRI);
iv) No injection into the joint within 3 months of surgery;

Note: Removal of infected knee prosthesis and subsequent insertion of antibiotic spacer is not considered an elective surgery and is not considered a revision knee arthroplasty.

Absolute contraindication:

- Active infection (local or remote)
- Any injection into the joint within 3 months of surgery

Relative contraindication:

- Deficiency of the extensor mechanism
- Neuropathic joint
- Unstable or poorly controlled comorbidities
- Severe peripheral vascular disease
- Compromised soft-tissue envelope (revision may be performed in conjunction with plastic surgical consultation for soft tissue coverage via pedicle flaps or other acceptable procedure)

Non-Covered Services:

The following procedures are not considered a covered service and are not reimbursable based on lack of current scientific evidence for clinically important improvement, safety or efficacy; or based on scientific evidence of increased risk of serious complications:

a) Procedures utilizing computer-navigated or patient-specific or gender-specific instrumentation
b) Bicompartmental arthroplasty (investigational at this time)
c) Robot-assisted TKA (Makoplasty)

Grading Appendix

Kellgren-Lawrence Grading System:
MRI should not be the primary tool used to determine the presence or severity of arthritic changes in the joint.

Grade Description

0	No radiographic features of osteoarthritis
1	Possible joint space narrowing and osteophyte formation
2	Definite osteophyte formation with possible joint space narrowing
3	Moderate multiple osteophytes, definite narrowing of joint space, some sclerosis and possible deformity of bone contour (*some sclerosis and cyst formation)*
4	Large osteophytes, marked narrowing of joint space, severe sclerosis and definite deformity of bone contour.

Outerbridge Arthroscopic Grading System

Grade	Description
0	Normal cartilage
I	Softening and swelling/blistering
II	Partial thickness defect, fissures < 1.5cm diameter/wide
III	Fissures /defects down to subchondral bone with intact calcified cartilage layer, diameter > 1.5cm
IV	Exposed subchondral bone

Other Notes:

Manipulation following total knee arthroplasty: SEE KNEE ARTHROSCOPY & OTHER OPEN PROCEDURES Guideline for specific Manipulation indications.

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TOC

27332 – Knee Arthroscopy

CPT Codes: 27332, 27333, 27403, 29868, 29880, 29881, 29882, 29883, 27405, 27407, 27409, 27427, 27428, 27429, 29888, 29889, 27412, 27415, 27416, 27418, 27420, 27422, 27424, 27425, 29866, 29867, 29870, 29873, 29874, 29875, 29876, 29877, 29879, G0289, 27570, 29884

INTRODUCTION:

This guideline addresses the following elective, non-emergent, arthroscopic knee repair procedures:

- Diagnostic knee arthroscopy
- Debridement with or without chondroplasty
- Meniscectomy/meniscal repair/meniscal transplant
- Ligament reconstruction/repair
- Articular cartilage restoration/repair (marrow stimulating and restorative techniques)
- Synovectomy (major [2+ compartments], minor [1 compartment])
- Loose body removal
- Lateral release\patellar realignment
- Manipulation under anesthesia (MUA)
- Lysis of adhesions for arthrofibrosis of the knee

Arthroscopy introduces a fiber-optic camera into the knee joint through a small incision for diagnostic visualization purposes. Other instruments may then be introduced to remove, repair, or reconstruct intra- and extra-articular joint pathology. Surgical indications are based on relevant subjective clinical symptoms, objective physical exam and radiologic findings, and response to previous non-operative treatments when medically appropriate.

Open, non-arthroplasty knee surgeries are performed instead of an arthroscopy as dictated by the type and severity of injury and/or disease.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual needs and based on an assessment of the local delivery system.

General Requirements

- Elective arthroscopic surgery of the knee may be considered if the following general criteria are met:
    - There is clinical correlation of patient's subjective complaints with objective exam findings and/or imaging (when applicable);
    - Knee pain with documented loss of function: Deviation from normal knee function which may include painful weight bearing, unstable articulation, and/or inadequate range of motion (>10 degrees flexion contracture or <110

degrees flexion or both) to accomplish age-appropriate activities of daily living (ADLs), occupational, athletic);
    - Patient is medically stable with no uncontrolled comorbidities (such as diabetes);
    - Patient does not have an active local or systemic infection;
    - Patient does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in treatment program

- Clinical notes should address:
    - Symptom onset, duration, and severity;
    - Loss of function and/or limitations;
    - Type and duration of non-operative management modalities (where applicable).

- Non-operative management must include at least **two** more of the following, unless otherwise specified:
    - Rest or activity modifications/limitations;
    - Ice/heat;
    - Protected weight bearing;
    - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
    - Brace/orthosis;
    - Physical therapy modalities;
    - Supervised home exercise;
    - Weight optimization;
    - Injections: corticosteroid, viscosupplementation, platelet rich plasma (PRP)

Clinical Indications

Diagnostic Knee Arthroscopy

Diagnostic knee arthroscopy may be medically necessary when **ALL** of the following criteria are met:

e) At least 3 months of knee pain with documented loss of function;

f) Failure of at least 12 weeks of non-operative treatment, including at least **two** of the following;

x) Rest or activity modifications/limitations
xi) Ice/heat
xii) Protected weight bearing
xiii) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
xiv) Brace/orthosis
xv) Physical therapy modalities

xvi) Supervised home exercise
xvii) Weight optimization
xviii) Corticosteroid injection

g) Clinical documentation of painful weight bearing, joint line tenderness, effusion and/or limited motion compared to presymptomatic joint range;

h) Indeterminate radiographs **AND** MRI findings.

Debridement with or without Chondroplasty

Debridement for **non-patellofemoral (femoral condyle and tibial plateau) articular cartilage** may be medically necessary when **ALL** of the following criteria are met:

a) Knee pain with documented loss of function;

b) Failure of at least 12 weeks of non-operative treatment, including at least two of the following;

i) Rest or activity modifications/limitations
ii) Ice/heat
iii) Protected weight bearing
iv) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
v) Brace/orthosis
vi) Physical therapy modalities
vii) Supervised home exercise
viii) Weight optimization
ix) Corticosteroid injection

c) MRI results showing evidence of unstable chondral flap; AND

d) Recurrent (more than 2) or persistent effusion(s):

Debridement chondroplasty for **patellofemoral chondrosis** when **ALL** of the following criteria are met:

a) Anterior knee pain with documented loss of function;

b) Other extra-articular or intra-articular sources of pain or dysfunction have been excluded (referred pain, radicular pain, tendinitis, bursitis, neuroma);

c) Physical exam localizes tenderness to the patellofemoral joint with pain aggravated by activities that load the joint (single leg squat, ascending >descending stairs, and being in seated position for extended periods of time with knee flexed);

d) Failure of at least 12 weeks of non-operative treatment, including at least two of the following;

i) Rest or activity modifications/limitations
ii) Ice/heat
iii) Protected weight bearing

iv) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
v) Brace/orthosis
vi) Physical therapy modalities
vii) Supervised home exercise
viii) Weight optimization
ix) Corticosteroid injection

e) No evidence of moderate to severe osteoarthritis (Kellgren-Lawrence Grade 3-4 based on standing or weight-bearing radiographs and patellofemoral views [see grading appendix])

Debridement for **arthrofibrosis** may be medically necessary when **ALL** of the following criteria are met:

a) Arthrofibrosis as evidence by physical exam findings of painful stiffness and loss of motion due to proliferation of scar tissue in and around the joint. NOTE: Imaging is not necessary, but historically has been used to determine the diagnosis;

b) Failure of at least 6 weeks of supervised or self-directed physical therapy;

Arthroscopic debridement with or without chondroplasty for the treatment of osteoarthritis of the knee is considered NOT MEDICALLY NECESSARY.

Meniscectomy/Meniscal Repair/Meniscal Transplant

Meniscectomy/Meniscal Repair

Meniscectomy and/or meniscal repair may be medically necessary when **ALL** of the following criteria in any of the following subsections are met:

a) Symptomatic meniscal tear confirmed by MRI results that show a peripheral longitudinal tear in the vascular zone, associated with pain localized to the corresponding compartment upon physical exam;

OR

a) Pediatric or adolescent patient has pain and mechanical symptoms upon physical exam;

b) MRI results show unstable tear;

OR

a) When at least 2 of the following 5 criteria are met:

i) History of “catching” or “locking” as reported by the patient;

ii) Knee joint line pain with forced hyperextension upon physical exam;

iii) Knee joint line pain with maximum flexion upon physical exam;

iv) Knee pain, crepitus, or an audible or palpable click with the McMurray's test or Apley grind test;

v) Joint line tenderness to palpation upon physical exam;

b) Failure of at least 6 weeks of non-operative treatment, including at least two of the following;

i) Rest or activity modifications/limitations
ii) Ice/heat
iii) Protected weight bearing
iv) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
v) Brace/orthosis
vi) Physical therapy modalities
vii) Supervised home exercise
viii) Weight optimization
ix) Corticosteroid injection

c) One of the following radiographic findings:

i) Weight-bearing X-ray(s) that demonstrate no moderate or severe osteoarthritic changes (Kellgren-Lawrence Grade 3-4 [see grading appendix]);

ii) MRI results confirm meniscal tear in patients < 40 years of age;

iii) MRI results confirm displaced tear (any age);

OR

a) Meniscus tear encountered during other medically necessary arthroscopic procedure

Absolute Contraindications: Meniscectomy/Meniscal Repair

- Arthroscopic meniscectomy or meniscal repair is never medically necessary in the presence of Kellgren-Lawrence Grade 4 osteoarthritis [see grading appendix].

Relative Contraindications: Meniscectomy/Meniscal Repair

- Meniscectomy or repair is considered NOT MEDICALLY NECESSARY in the presence of Kellgren-Lawrence Grade 3 osteoarthritis [see grading appendix] unless acute onset with effusion, locking (note: locking only. This does not include catching, popping, cracking), and MRI evidence of bucket-handle or displaced meniscal fragment that correlates with the correct compartment (i.e. medial tenderness and locking for a medial tear).
- If grade 3 changes are present, only a meniscectomy may be indicated, not repair. If evidence of meniscal extrusion on coronal MRI with/without subchondral edema, arthroscopy is relatively contraindicated, even if tear is present.
- BMI > 35

Meniscal Transplant

Meniscal Transplants may be medically necessary when **ALL** of the following criteria are met:

a) Patient is less than 40 years old;

b) Patient has no evidence of arthritic changes;

c) Symptomatic meniscal deficiency confirmed by MRI results that show a meniscal deficient compartment, OR previous arthroscopy photographs or video showing subtotal or total meniscectomy;

i) Failure of at least 6 weeks of non-operative treatment, including at least **two** of the following;

i) Rest or activity modifications/limitations
ii) Ice/heat
iii) Protected weight bearing
iv) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
v) Brace/orthosis
vi) Physical therapy modalities
vii) Supervised home exercise
viii) Weight optimization
ix) Corticosteroid injection

Absolute Contraindications: Meniscal Transplant

- Uncorrected (staged or simultaneous) ligamentous insufficiency (ACL, PCL, MCL, LCL, PMC, PLC)
- Uncorrected (staged or simultaneous) malalignment greater than 5 degrees varus or 5 degrees valgus
- Uncorrected (staged or simultaneous) full-thickness articular cartilage isolated defects (International Cartilage Research Society Grade 3 or 4; Outerbridge Grade IV [see grading appendix])
- Kellgren-Lawrence Grade 3 or 4 osteoarthritis [see grading appendix]

Ligament Reconstruction/Repair

Anterior Cruciate Ligament (ACL) Reconstruction with Allograft or Autograft:

ACL reconstruction or repair may be medically necessary when **ALL** of the following criteria in any of the following subsections are met:

a) Knee instability (as defined subjectively as "giving way", "giving out", "buckling", two-fist sign) with clinical findings of instability: Lachman's 1A, 1B, 2A, 2B, 3A, 3B, Anterior Drawer, Pivot Shift test, or instrumented (KT-1000 or KT-2000) laxity of greater than 3 mm side-side difference;

b) MRI results confirm complete ACL tear;

c) Patient has no evidence of severe arthritis (Kellgren-Lawrence** Grade 3 or 4 [see grading appendix]);

OR

a) At least ONE of the following criteria are met:

i) MRI results confirm ACL tear associated with other ligamentous instability or repairable meniscus;

ii) MRI results confirm partial or complete ACL tear AND patient has persistent symptoms despite at least 12 weeks of non-operative treatment;

iii) Acute ACL tear confirmed by MRI in high demand occupation or competitive athlete (as quantified by Marx activity score for athletics (any score greater than 4) and Tegner activity score for athletics and/or occupation (score greater than 2)) [see grading appendix]);

b) Patient has no evidence of severe arthritis (Kellgren-Lawrence** Grade 3 or 4 [see grading appendix]);

Tears in patients less than age 13 will be reviewed on a case by case basis.

Posterior Cruciate Ligament (PCL) Reconstruction:

PCL reconstruction or repair may be medically necessary when the following criteria are met:

a) Knee instability (as defined subjectively as "giving way", "giving out", "buckling", two-fist sign) with clinical findings of positive Posterior Drawer, posterior Sag, or quadriceps active, or Dial test at 90 degrees knee flexion, reverse pivot shift test;

b) MRI results confirm complete PCL tear;

c) Failure of at least 12 weeks of non-operative treatment, including bracing and physical therapy emphasizing quadriceps strengthening);

d) Absence of medial and patellofemoral K-L grade 3-4 changes in chronic tears [see grading appendix];

The following clinical scenarios will be considered and decided on a case-by-case basis:

- Pediatric and adolescent tears in patients with open physes or open growth plates;
- Symptomatic partial tears with persistent instability despite non-operative treatment;
- Incidental Kellgren-Lawrence grade 2-3 osteoarthritis [see grading appendix] in acute/subacute tears with unstable joint;
- Acute PCL repair or reconstruction when surgery is also required for the ACL, MCL or LCL.
- Tears in patients less than age 13

Collateral Ligament Repair or Reconstruction:

Collateral ligament repair or reconstruction should rarely occur independent of additional ligament repair or reconstruction surgery (ACL, MCL, LCL).

All non-traumatic collateral ligament repair/reconstruction requests will be reviewed on a case by case basis.

Articular Cartilage Restoration/Repair

Skeletally Immature Indications:

Articular Cartilage Restoration/Repair may be medically necessary when **ALL** of the following criteria in any of the following subsections are met:

a) Skeletally immature patient;
b) Patient is symptomatic (pain, swelling, mechanical symptoms of popping, locking, catching, or limited range of motion);
c) radiographic findings (any radiograph and MRI) of a displaced lesion;

OR

a) Skeletally immature patient;
b) Patient is symptomatic (pain, swelling, mechanical symptoms of popping, locking, catching, or limited range of motion);
c) Failure of at least 12 weeks of non-operative treatment, including at least two of the following;
    i) Rest or activity modifications/limitations
    ii) Ice/heat
    iii) Protected weight bearing
    iv) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
    v) Brace/orthosis
    vi) Physical therapy modalities
    vii) Supervised home exercise
    viii) Weight optimization
    ix) Corticosteroid injection
d) Radiographic findings (any radiograph and MRI) results finding of a stable osteochondral lesion

OR

a) When ALL of the following criteria are met:
    i) Skeletally immature;
    ii) Asymptomatic;

iii) Failure of at least 12 weeks of non-operative treatment, including at least two of the following, to improve lesion stability or size;

a. Rest or activity modifications/limitations
b. Ice/heat
c. Protected weight bearing
d. Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
e. Brace/orthosis
f. Physical therapy modalities
g. Supervised home exercise
h. Weight optimization
i. Corticosteroid injection

iv) Radiographic findings (any radiograph and MRI) results finding of an unstable osteochondral lesion

Exclusion (applies to all criteria above):

Exclude patients with evidence of meniscal deficiency and/or malalignment IF these are not being addressed (meniscal transplant and/or lateral release/patellar realignment procedure) at the same time as the cartilage restoration procedure.

Skeletally Mature Indications, Listed By Surgical Approach:

Reparative Marrow Stimulation:

Reparative marrow stimulation techniques such as microfracture & drilling (note- abrasion arthroplasty is including in coding but is not indicated) may be medically necessary when **ALL** of the following criteria are met:

a) Skeletally mature adult;

b) MRI confirms a full-thickness weight-bearing lesion that is < 2.5 sq.cm;

c) Patient is symptomatic (pain, swelling, mechanical symptoms of popping, locking, catching, or limited range of motion);

d) Patient is less than 50 years of age;

e) BMI < 35 (optimal outcomes if patient BMI <30);

f) Physical exam findings and/or (imaging) results confirm knee has stable ligaments;

g) No evidence of prior meniscectomy in same compartment (medial femoral condyle full thickness lesion and prior medial meniscectomy) unless concurrent meniscal transplant performed.

Restorative Marrow Techniques:

Restorative techniques (abrasion arthroplasty, osteochondral autograft transfer or transplantation (OATS), mosaicplasty, autologous chondrocyte implantation (ACI), osteochondral allograft implantation, minced articular cartilage allograft transplantation [DeNovo NT])) may be medically necessary when **ALL** of the following criteria are met:

a) Skeletally mature adult;

b) MRI results confirm a full thickness chondral or osteochondral lesion of the femoral condyles or trochlea > 2.5 cm;

c) Patient is less than 50 years of age;

d) Patient has been symptomatic (pain, swelling, mechanical symptoms of popping, locking, catching, or limited range of motion) for at least 6 months;

e) Failure of at least 6 months of non-operative treatment, including at least two of the following;

   i) Rest or activity modifications/limitations
   ii) Ice/heat
   iii) Protected weight bearing
   iv) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
   v) Brace/orthosis
   vi) Physical therapy modalities
   vii) Supervised home exercise
   viii) Weight optimization
   ix) Corticosteroid injection

f) MRI and/or physical findings confirm knee has normal alignment as defined as +/- 3 degrees from neutral on full-length mechanical axis long-leg x-ray (unless concurrent or staged tibial or femoral osteotomy performed) and stability (unless concurrent ligamentous repair or reconstruction performed);

g) BMI < 35 (optimal outcomes if patient BMI <30);

h) MRI shows no evidence of osteoarthritis (greater than Kellgren-Lawrence Grade 2 [see grading appendix]);

i) No prior meniscectomy in same compartment (unless concurrent or staged meniscal transplant performed)

Patellofemoral Chondrosis

Surgical intervention for the treatment of patellofemoral chondrosis (osteochondral autograft transfer or transplantation (OATS), microfracture, autologous chondrocyte implantation (ACI), osteochondral allograft implantation, minced articular cartilage allograft transplantation [DeNovo NT], debridement chondroplasty, tibial tubercle osteotomy) may be medically necessary when **ALL** of the following criteria are met:

a) Anterior knee pain and loss of function;

b) Other extra-articular or intra-articular sources of pain or dysfunction have been excluded (referred pain, radicular pain, tendinitis, bursitis, neuroma);

c) Physical exam localizes tenderness to the patellofemoral joint with pain aggravated by activities that load the joint (single leg squat, descending > ascending stairs or stair climbing, and being in seated position for extended periods of time with knee flexed);

d) Radiologic imaging shows patellofemoral Chondrosis, grade III or IV by the Outerbridge Classification or grade 3 or 4 by International Cartilage Research Society classification [see grading appendix]

e) Failure of at least 6 months of non-operative treatment, including at least two of the following;

   i) Rest or activity modifications/limitations
   ii) Ice/heat
   iii) Protected weight bearing
   iv) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
   v) Brace/orthosis
   vi) Physical therapy modalities
   vii) Supervised home exercise
   viii) Weight optimization
   ix) Corticosteroid injection

f) No evidence of osteoarthritis (Kellgren-Lawrence Grade 3-4 based on standing or weight-bearing radiographs) in the medial/lateral compartments [see grading appendix].

Synovectomy (major [2+ compartments], minor [1 compartment])

Synovectomy may be medically necessary when **ALL** of the following criteria in any of the following subsections are met:

a) Proliferative rheumatoid synovium (in patients with established rheumatoid arthritis according to the American College of Rheumatology Guidelines [see grading appendix]);

b) Not responsive to disease modifying drug (DMARD) therapy for at least 6 months and failure of at least 6 weeks of non-operative treatment;

c) At least one instance of aspiration of joint effusion and corticosteroid injection (if no evidence of infection);

OR

a) Hemarthrosis from injury, coagulopathy or bleeding disorder confirmed by physical exam, joint aspiration, and/or MRI;

OR

a) Proliferative pigmented villonodular synovitis, synovial chondromatosis, sarcoid synovitis, or similar proliferative synovial disease, traumatic hypertrophic synovitis confirmed by history, MRI or biopsy;

b) Failure of at least 6 weeks of non-operative treatment, including at least two of the following;

i) Rest or activity modifications/limitations
ii) Ice/heat
iii) Protected weight bearing
iv) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
v) Brace/orthosis
vi) Physical therapy modalities
vii) Supervised home exercise
viii) Weight optimization
ix) Corticosteroid injection

c) At least one instance of aspiration of joint effusion and injection of corticosteroid (if no evidence of infection);

OR

a) Detection of painful plica confirmed by physical exam and MRI findings;

b) Failure of at least 12 weeks of non-operative treatment (see above for criteria);

c) At least one instance of aspiration of joint effusion OR single injection of corticosteroid (effusion may not be present with symptomatic plica);

Loose Body Removal

Loose body removal may be medically necessary when the following criteria are met:

a) Documentation of mechanical symptoms the cause limitation or loss of function

b) X-ray or MRI documentation of a loose body

Lateral Release/Patellar Realignment:

This guideline describes indications for surgical procedures to address patellofemoral pain disorders and abnormal alignment of the extensor mechanism of the knee by arthroscopic and/or open surgical techniques.

Lateral Patellar Compression Syndrome

Surgical intervention for the treatment of lateral patellar compression syndrome is indicated when **ALL** the following criteria are met:

a) Evidence of lateral patellar tilt from radiologic images (patellofemoral view: Merchant (45 degrees flexion; and/or skyline (60-90 degrees flexion); and/or sunrise (60-90 degrees flexion);

b) Associated lateral patella facet Kellgren-Lawrence changes grade 1, 2, or 3 [see grading appendix[;

c) Reproducible isolated lateral patellofemoral pain with patellar tile test;

d) Failure of at least 6 months of non-operative treatment, including appropriate hamstring/IT band stretching and patellar mobilization techniques, and at least one of the following;

   i) Rest or activity modifications/limitations
   ii) Ice/heat
   iii) Protected weight bearing
   iv) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
   v) Brace/orthosis
   vi) Physical therapy modalities
   vii) Supervised home exercise
   viii) Weight optimization
   ix) Corticosteroid injection

e) No evidence of patellar dislocation without documented patellar tilt;

f) No evidence of medial patellofemoral changes (Kellgren-Lawrence Grade 2 osteoarthritis or higher [see grading appendix]);

Patellar Malalignment and/or Patellar Instability

Surgical intervention for the treatment of patellar malalignment and/or patellar instability is indicated when **ALL** of the following criteria in any of the following subsections are met:

a) Acute traumatic patellar dislocation is associated with an osteochondral fracture, loose body, vastus medialus obliquus/medial patellofemoral ligament muscle avulsion, or other intra-articular injury that requires urgent operative management;

OR

b) Repeat (greater than 2) patellar dislocations or subluxations have occurred despite 6 months of non-operative treatment with radiologic confirmation of MPFL (medial patellofemoral ligament) deficiency;

OR

a) Physical exam has patellofemoral tenderness and abnormal articulation of the patella in the femoral trochlear groove (patellar apprehension with positive J sign);

b) Radiologic and advanced images (CT or MRI) rule out fracture or loose body, and show abnormal articulation, trochlear dysplasia, or other abnormality related to malalignment;

c) Failure of at least 6 months of non-operative treatment, including at least 3 months of physical therapy, and one of the following:

   i) Rest or activity modifications/limitations
   ii) Ice/heat
   iii) Protected weight bearing
   iv) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
   v) Brace/orthosis
   vi) Supervised home exercise

vii) Weight optimization
viii) Corticosteroid injection

Manipulation under Anesthesia (MUA)

Manipulation under anesthesia (MUA) may be indicated when **ALL** of the following criteria are met:

a) Physical exam findings demonstrate inadequate range of motion of the knee defined as less than 110 degrees of flexion;

b) Failure to improve range of motion of the knee despite 6 weeks (12 visits) of documented physical therapy;

c) Patient is less than 12 weeks after ligamentous or joint reconstruction

Lysis of Adhesions for Arthrofibrosis of the knee

Surgical indications are based on relevant clinical symptoms, physical exam, radiologic findings, time from primary surgery, and response to conservative management when medically appropriate. Improved range of motion may be accomplished through arthroscopically-assisted or open lysis of adhesions with general anesthesia, regional anesthesia, or sedation.

Lysis of Adhesions for Arthrofibrosis of the knee may be indicated when **ALL** of the following criteria in any of the following subsections are met:

a) Physical exam findings demonstrate inadequate range of motion of the knee, defined as less than 110 degrees of flexion;

b) Failure to improve range of motion of the knee despite 6 weeks (12 visits) of documented physical therapy;

c) Patient is more than 12 weeks after ligamentous or joint reconstruction, or resolved infection;

OR

a) Patient is more than 12 weeks after trauma, or resolved infection;

b) Patient has native knee;

c) Manipulation under anesthesia is also performed.

Grading Appendix

- Kellgren-Lawrence Grading System
- Outerbridge Arthroscopic Grading System
- Marx Scale
- Tegner Activity Score
- The International Cartilage Research Society (ICRS)
- American College of Rheumatology Guidelines

Kellgren-Lawrence Grading System:

MRI should not be the primary tool used to determine the presence or severity of arthritic changes in the joint.

Grade	Description
0	No radiographic features of osteoarthritis
1	Possible joint space narrowing and osteophyte formation
2	Definite osteophyte formation with possible joint space narrowing
3	Moderate multiple osteophytes, definite narrowing of joint space, some sclerosis and possible deformity of bone contour
4	Large osteophytes, marked narrowing of joint space, severe sclerosis and definite deformity of bone contour

Outerbridge Arthroscopic Grading System

Grade	Description
0	Normal cartilage
I	Softening and swelling/blistering
II	Partial thickness defect, fissures < 1.5cm diameter/wide
III	Fissures /defects down to subchondral bone with intact calcified cartilage layer, diameter > 1.5cm
IV	Exposed subchondral bone

Marx Scale

Indicate how often you performed each activity in your healthiest and most active state, in the past year.

Activity/Movement	Less than one time in a month	One time in a month	One time in a week	2 or 3 times in a week	4 or more times in a week
Running: running while playing a sport or jogging	0	1	2	3	4
Cutting: changing directions while running	0	1	2	3	4
Deceleration: coming to a quick stop while running	0	1	2	3	4

Pivoting: turning your body with your foot planted while playing sport; For example: skiing, skating, kicking, throwing , hitting a ball (golf, tennis, squash), etc.	0	1	2	3	4

Tegner Scores

Indicate in the spaces below the HIGHEST level of activity that you participated in BEFORE YOUR INJURY and the highest level you are able to participate in CURRENTLY

Level	Activity Description
Level 10	Competitive sports- soccer, football, rugby (national elite)
Level 9	Competitive sports- soccer, football, rugby (lower divisions), ice hockey, wrestling, gymnastics, basketball
Level 8	Competitive sports- racquetball or bandy, squash or badminton, track and field athletics (jumping, etc.), down-hill skiing
Level 7	Competitive sports- tennis, running, motorcars speedway, handball Recreational sports- soccer, football, rugby, bandy, ice hockey, basketball, squash, racquetball, running
Level 6	Recreational sports- tennis and badminton, handball, racquetball, down-hill skiing, jogging at least 5 times per week
Level 5	Work- heavy labor (construction, etc.) Competitive sports- cycling, cross-country skiing; Recreational sports- jogging on uneven ground at least twice weekly
Level 4	Work- moderately heavy labor (e.g. truck driving, etc.)
Level 3	Work- light labor (nursing, etc.)
Level 2	Work- light labor Walking on uneven ground possible, but impossible to back pack or hike
Level 1	Work- sedentary (secretarial, etc.)
Level 0	Sick leave or disability pension because of knee problems

The International Cartilage Research Society (ICRS)

Grade	Description
0	Normal cartilage
1	Nearly normal cartilage *Superficial lesions. Soft indentation and/or superficial fissures and cracks.*

2 Abnormal cartilage
Lesions extending down to <50% of cartilage depth.

3 Severely abnormal cartilage
Cartilage defects extending down >50% of cartilage depth as well as down to calcified layer and down to but not through the subchondral bone. Blisters are included in this Grade.

4 Severely abnormal cartilage (through the subchondral bone)
Penetration of subchondral bone that may or may not be across the full diameter of defect

American College of Rheumatology Guidelines

2010 ACR/EULAR: Classification Criteria for RA	
JOINT DISTRIBUTION (0-5)	
1 large joint	0
2-10 large joints	1
1-3 small joints (large joints not counted)	2
4-10 small joints (large joints not counted)	3
>10 joints (at least one small joint)	5
SEROLOGY (0-3)	
Negative RF AND negative ACPA	0
Low positive RF OR low positive ACPA	2
High positive RF OR high positive ACPA	3
SYMPTOM DURATION (0-1)	
<6 weeks	0
≥6 weeks 1	1
ACUTE PHASE REACTANTS (0-1)	
Normal CRP AND normal ESR	0
Abnormal CRP OR abnormal ESR	1
	≥6 = definite RA

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TOC

23474 – Shoulder Arthroplasty

CPT Codes: 23473, 23474, 23472, 23470

Introduction

This guideline addresses elective, non-emergent shoulder arthroplasty (shoulder replacement) procedures, including total shoulder arthroplasty, reverse shoulder arthroplasty, resurfacing arthroplasty, partial shoulder replacement or hemiarthroplasty, and revision arthroplasty procedures.

Arthroplasty describes the surgical replacement and reconstruction of a joint with implanted devices when the joint has been damaged by an arthritic or traumatic process.

In both a total shoulder replacement and a reverse shoulder replacement, the damaged joint surfaces (humeral head and glenoid) are removed and replaced with prosthetic components, with the goal of reducing pain and improving joint function. In a reverse shoulder procedure, the ball and socket feature of the joint is reversed, allowing for added rotator cuff support.

In the event the shoulder joint cannot support a glenoid prosthesis, a hemiarthroplasty, or partial joint replacement may be performed to replace the humeral head with a prosthesis.

In some cases, the shoulder prosthesis may wear out or loosen. If loosening is painful, a second surgery, such as a revision may be necessary. In this procedure some or all of the components of the original replacement prosthesis are removed and replaced with new ones.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual patient needs and based on an assessment of the local delivery system

General Requirements

- Elective surgery of the shoulder may be considered if the following general criteria are met:
    - There is clinical correlation of patient's subjective complaints with objective exam findings and/or imaging (when applicable);
    - Patient has limited function (age-appropriate activities of daily living (ADLs), occupational, athletic);
    - Patient is medically stable with no uncontrolled comorbidities (such as diabetes);
    - Patient does not have an active local or systemic infection;
    - Patient does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in treatment program

- Patient has good oral hygiene and does not have major dental work scheduled or anticipated (ideally within one year of joint replacement), due to increased post-surgical infection risk.

- Clinical notes should address:
  - Symptom onset, duration, and severity;
  - Loss of function and/or limitations;
  - Type and duration of non-operative management modalities.

- Non-operative management, when required, will be specified within the clinical indications below and may include one or more of the following:
  - Physical therapy or properly instructed home exercise program
  - Rest or activity modification
  - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics;
  - Corticosteroid injections

Clinical Indications:

Total Shoulder Arthroplasty (TSA)

The replacement of the glenohumeral joint is called a shoulder arthroplasty. It can be either a total shoulder arthroplasty (TSA), where both the glenoid and humerus are replaced, a partial arthroplasty of the humerus only (hemiarthroplasty, HA), or a partial resurfacing of the humerus (humeral head resurfacing, HHR, HR). In general, these arthroplasty procedures are reserved for end stage arthritis of the shoulder joint, including functional loss of motion, pain and disability. The choice of arthroplasty is dependent upon surgeon philosophy, experience and skill. Successful outcome, regardless of procedure, is more likely with high volume (> 20 per year) shoulder specialists. Revision shoulder arthroplasty is most commonly required because of technical problems encountered at the time of surgery, such as insertion of the wrong size components, improper technique, and poor surgical exposure.

Total Shoulder Arthroplasty may be necessary when **ALL** of the following criteria are met:

a) Evidence of painful osteoarthritis or inflammatory, non-infectious arthritis (e.g. rheumatoid) with functional limitations (such as activities of daily living or employment or simple recreation);
b) Complete or near-complete loss of joint space on axillary and AP x-rays (internal rotation and/or external rotation) (*note: MRI should not be the primary imaging study to determine the extent of disease)*;
c) Failure of at least 12 weeks of non-operative treatment that includes at least ONE of the following:
   i) Physical therapy or properly instructed home exercise program
   ii) Rest or activity modification
   iii) Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics;
   iv) Corticosteroid injections

d) Adequate bone stock (sufficient bone available to place a glenoid component. Requires either a good axillary x-ray, CT, or MRI) to support chosen device;
e) Functional and intact rotator cuff and deltoid;
f) No injection into the joint within 3 months of surgery.

NOTES

- In general, the more severe the disease, the more loss of motion and glenoid erosion will exist and the more likely a TSA will be required, regardless of age. However, if surgery is delayed too long, it can be exceedingly difficult to insert the glenoid component for a TSA due to posterior glenoid erosion, and even more difficult for a hemiarthroplasty. For optimal TSA success, only one replacement should be attempted during a patient's lifetime.
- Additional research is necessary to support an accurate age range for each type of shoulder arthroplasty. At this time, patient age is a **relative indication** for surgery and ultimately relies on surgeon's judgment and patient presentation. TSA can be done at any age, but in general, to minimize complications (future need of a TSA revision) and improve quality of life:
    - Age <55: Hemiarthroplasty may be the best surgical option due to the likelihood that these patients will need the joint converted to a total shoulder arthroplasty. Revising a total shoulder arthroplasty is much more complex and in some cases cannot be successfully performed.
    - Age 55-65: Depending on patient anatomy and desired activity level, TSA or resurfacing (HHR) may be indicated. Based on surgeon experience, some may choose a stemmed hemiarthroplasty (HA) as it is technically less demanding.
    - Age > 65: TSA is typically the best surgical option for patients over the age of 65.

Contraindications

- Neurological disease resulting in chronic pain syndrome (CRPS or its variants) or loss of deltoid or rotator cuff function.
- Active infection or any infection within 6 months of surgery:
    - History of prior shoulder joint infection without proof that indolent infection has been eliminated (patient has been off antibiotics for a minimum of 6 weeks) via laboratory work (serologies, including CBC with differential, ESR (erythrocyte sedimentation rate), CRP (C-reactive protein), with or without blood cultures, and synovial fluid aspiration (cultures, gram stain, cell count, differential, crystals)). Cultures must be for aerobic and anaerobic bacteria (AFB, fungal). Cultures must be held for minimum 30 days (especially to rule out proprionobacterium acnes).
    - Nuclear scans, advanced imaging and often aspiration or soft tissue/bone biopsy (note: recent studies suggest only intra-operative tissue cultures are reliable indicators of joint contamination/infection and IF occult infection is a concern (after prior procedures), biopsies should be taken, delayed

placement of the arthroplasty should be strongly considered after antibiotic spacer placement, and appropriate antibiotic management commenced once confirmed.

- Poor dental hygiene (e.g. tooth extraction should be performed prior to arthroplasty). Major dental work within 2 year after a joint replacement MAY lead to seeding of the implant and possible revision surgery. If possible, all dental work must be completed prior to shoulder arthroplasty as these procedures increase risk for infection. Following surgery, patients should receive antibiotics for routine dental check-ups for a minimum of two years.
- Any injection into the joint within 3 months of surgery.

Hemiarthroplasty

Hemiarthroplasty may be necessary when **ALL** of the following criteria are met:

a) Patient meets all of the criteria for a Total Shoulder Arthroplasty, as detailed above, **OR** patient with avascular necrosis or osteonecrosis of the humeral head without advanced glenoid disease;
b) No injection into the joint within 3 months of surgery;

Contraindications

- Any injection into the joint within 3 months of surgery.

Reverse Total Shoulder Arthroplasty (RTSA)

This shoulder surgery involves placing the ball on the glenoid side (glenosphere and baseplate) of the joint and the socket on the humeral side.

The original purpose of a RTSA was to allow basic function of a pseudoparalytic shoulder from a non-repairable chronic rotator cuff tear with arthropathy (or arthritis) in an inactive person over age 65. Because it is associated with a high complication rate (10-50% in primary procedures and as high as 70% in revisions), it should be used with careful consideration. Salvage after failed RTSA is difficult with poor outcomes.

It works by moving the center of joint rotation medial and downward and increasing deltoid tension to facilitate active abduction and elevation of the arm.

RTSA may be indicated for the **treatment of arthritis** when **ALL** of the following criteria are met:

a) Non-repairable massive (> 2 tendons) rotator cuff tear AND intact deltoid AND inability to actively elevate the arm above the level of the shoulder (90 degrees) (i.e. nonfunctional cuff tear arthropathy);
b) Age > 65 (note: requests for RTSA in patients less than 65 will be reviewed on a case-by-case basis);
c) Failure of at least 12 weeks of non-operative treatment that includes ALL of the following:

i) Formal physical therapy for deltoid retraining

ii) At least one corticosteroid injection

d) Patient must be compliant with instructions and understand long-term activity is limited to basic activities of daily living;

e) No injection into the joint within 3 months of surgery;

NOTE: If patient meets above criteria but **can raise the arm above shoulder level**, a stemmed or resurfacing extended articular surface resurfacing device (EAS) (CTA head) may be an appropriate option (i.e. FUNCTIONAL cuff tear arthropathy). This is also an option in those < 60 years old. These cases should be determined on a case by case basis.

Contraindications:

3) Any injection into the joint within 3 months of surgery.

RTSA may be indicated for the **treatment of fractures or failed Total Shoulder Arthroplasty** when **ALL** of the following criteria are met:

a) Acute 3-4 part fractures of proximal humerus with or without concomitant tuberosity as evidence by radiographic findings;

b) Age >65 (note: requests for RTSA in patients less than 65 will be reviewed on a case-by-case basis)

Revision Arthroplasty

There are five primary indications for revision shoulder arthroplasty: (1) conversion of a hemiarthroplasty to a total shoulder arthroplasty, (2) conversion of a hemiarthroplasty to a reverse shoulder arthroplasty, (3) revision of a total shoulder arthroplasty to another total shoulder arthroplasty, (4) revision of a total shoulder arthroplasty to a reverse shoulder arthroplasty, (5) revision of a total shoulder arthroplasty to a reverse shoulder arthroplasty.

Note: Historically this procedure was coded as the removal of hardware and total shoulder arthroplasty. CPT introduced shoulder revision procedure codes in January 2013.

(1) Conversion of a **hemiarthroplasty to a total shoulder arthroplasty** may be necessary when **ALL** of the following criteria are met:

a) Evidence of a prior hemiarthroplasty

b) Persistent pain and functional loss

c) Negative infection evaluation (including CRP, ESR, CBC, with or without negative aspiration)

d) Clinical and radiographic evidence of intact rotator cuff (or repairable rotator cuff tear), including **one** of the following two options:

i) Radiographic evidence of failed humeral component, including aseptic loosening or periprosthetic fracture. Documentation should include radiolucencies around cemented or uncemented components.

ii) Clinical and radiographic evidence of glenoid articular cartilage disease (including progressive arthritis).

(2) Conversion of a **hemiarthroplasty to a reverse shoulder arthroplasty** may be necessary when **ALL** of the following criteria are met:

a) Evidence of a prior hemiarthroplasty
b) Persistent pain and functional loss
c) Negative infection evaluation (including CRP, ESR, CBC, with or without negative aspiration)
d) Clinical and radiographic evidence of irreparable rotator cuff tear
e) Intact deltoid and intact axillary nerve
f) Age >65
g) Evidence of pseudoparalysis (inability to elevate arm)

Note: Cases in patients age less than 65 or with limited/no pseudoparalysis will be reviewed on a case by case basis.

(3) Revision of a **total shoulder arthroplasty to another total shoulder arthroplasty** may be necessary when **ALL** of the following criteria are met:

a) Evidence of prior total shoulder arthroplasty
b) Persistent pain and functional loss
c) Negative infection evaluation (including CRP, ESR, CBC, with or without negative aspiration)
d) Clinical and radiographic evidence of intact rotator cuff (or repairable rotator cuff tear)
e) Radiographic evidence of failed humeral and/or glenoid component, including aseptic loosening or periprosthetic fracture. Documentation should include radiolucencies around cemented or uncemented components.

(4) Revision of a **total shoulder arthroplasty to a reverse shoulder arthroplasty** may be necessary when **ALL** of the following criteria are met:

a) Evidence of prior total shoulder arthroplasty
b) Persistent pain and functional loss
c) Negative infection evaluation (including CRP, ESR, CBC, with or without negative aspiration)
d) Clinical and radiographic evidence of irreparable rotator cuff tear
e) Intact deltoid and intact axillary nerve
f) Age >65
g) Evidence of pseudoparalysis (inability to elevate arm)

Note: Cases in patients age less than 65 or with limited/no pseudoparalysis will be reviewed on a case by case basis.

(5) Revision of a **reverse shoulder arthroplasty to another reverse shoulder** arthroplasty may be necessary when **ALL** of the following criteria are met:

a) All cases should be reviewed case-by-case basis and include the following:
b) Evidence of prior reverse shoulder arthroplasty
c) Persistent pain and functional loss
d) Negative infection evaluation (including CRP, ESR, CBC, with or without negative aspiration)
e) Radiographic evidence of failed humeral and/or glenoid component, including aseptic loosening or periprosthetic fracture. Documentation should include radiolucencies around cemented or uncemented components
f) Intact deltoid and intact axillary nerve
g) Surgeon must be cognizant of acromial stress fracture, scapular notching, and instability risks.

Contraindications

- Insufficient glenoid and/or humeral bone to support a revision component
- Active or recent history of infection
- Neurogenic pain syndrome
- Acromial fracture OR overly thin acromion from prior subacromial decompression
- Severe osteoporosis as evidenced by radiographic osteopenia, osteomalacia or severe osteoporosis on Dexa scan
- Non-functioning deltoid or axillary nerve injury / palsy.

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TOC

23415 – Shoulder Arthroscopy

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Introduction

This guideline addresses the following elective, non-emergent, arthroscopic shoulder repair procedures:

- Rotator Cuff Repair
- Labral Repairs
- Lysis of Adhesions (Capsulotomy)
- Distal Clavicle Excision (DCE)
- Long Head Biceps (LHB) Tenotomy or Tenodesis
- Synovectomy
- Subacromial Decompression (SAD)

Arthroscopy introduces a fiber-optic camera into the shoulder joint through a small incision for diagnostic visualization purposes. Other instruments may then be introduced to remove, repair, or reconstruct joint pathology.

Surgical indications are based on relevant subjective clinical symptoms, objective physical exam & radiologic findings, and response to previous non-operative treatments when medically appropriate.

Open, non-arthroplasty shoulder repair surgeries are performed as dictated by the type and severity of injury and/or disease.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on *individual* needs and based on an assessment of the local delivery system.

General Requirements

- Elective surgery of the shoulder may be considered if the following general criteria are met:
  - There is clinical correlation of patient's subjective complaints with objective exam findings and/or imaging (when applicable);
  - Patient has limited function (age-appropriate activities of daily living (ADLs), occupational, athletic);
  - Patient is medically stable with no uncontrolled comorbidities (such as diabetes);
  - Patient does not have an active local or systemic infection;
  - Patient does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in treatment program

- A smoking cessation program is highly recommended and should be instituted pre-operatively for all actively smoking patients

- Clinical notes should address:
  - Symptom onset, duration, and severity;
  - Loss of function and/or limitations;
  - Type and duration of non-operative management modalities (where applicable).

- Non-operative management, when required, will be specified within the clinical indications below and may include one or more of the following:
  - Physical therapy or properly instructed home exercise program
  - Rest or activity modification
  - Minimum of 4 weeks of oral NSAIDs (if not medically contraindicated)
  - Single injection of corticosteroid and local anesthetic into subacromial or intra-articular space, or bicipital groove

Clinical Indications

Rotator Cuff Repair (RCR)

Surgical treatment of rotator cuff tear (RCT) should only be performed when there is a clinical correlation of patient symptoms, clinical exam findings, imaging, and failed non-operative management (where required). Note: Traditional open rotator cuff repair (RCR) with deltoid take-down should be rare given increased morbidity when compared to arthroscopic or mini-open surgery.

Partial-Thickness Rotator Cuff Tear

Surgical repair of a partially torn rotator cuff may be necessary when **ALL** of the following criteria are met:

a) Reproducible rotator cuff pain patterns (lateral arm, deltoid pain not radiating past the elbow, night pain, or pain with overhead motions);
b) Positive impingement signs and/or tests on exam (reproducible pain when arm is positioned overhead (above plane of shoulder) with relief of pain when arm is repositioned below the plane of the shoulder);
c) Functional loss (age-appropriate activities of daily living (ADLs), occupational, athletic);
d) MRI that demonstrates a partial thickness tear (articular-sided, concealed, or bursal-sided);
e) Failure of at least 12 weeks of non-operative treatment, including at least **3** of the following criteria:
   i) Physical therapy or properly instructed home exercise program
   ii) Rest or activity modification
   iii) Minimum of 4 weeks of oral NSAIDs (if not medically contraindicated)
   iv) Single injection of corticosteroid and local anesthetic into subacromial or intra-articular space.

Small (<1cm), Full-Thickness Rotator Cuff Tear

Surgical repair of a small full-thickness rotator cuff tear may be necessary when **ALL** of the following criteria are met:

a) Reproducible rotator cuff pain patterns (lateral arm, deltoid pain not radiating past the elbow, night pain, or pain with overhead motions);
b) Positive impingement signs and/or tests on exam (reproducible pain when arm is positioned overhead (above plane of shoulder) with relief of pain when arm is repositioned below the plane of the shoulder);
c) Functional loss (age-appropriate activities of daily living (ADLs), occupational, athletic);
f) Rotator cuff weakness on physical exam;
g) MRI that demonstrates a small, full thickness tear (<1cm);
h) Failure of at least 6 weeks of non-operative treatment*, including physical therapy or a properly instructed home exercise program (that includes exercises for scapular dyskinesis when present) **AND** at least **one** of the following:
    i) Rest or activity modification
    ii) Minimum of 4 weeks of oral NSAIDs (if not medically contraindicated)
    iii) Single injection of corticosteroid and local anesthetic into subacromial or intra-articular space

*Note: The requirement for conservative, non-operative treatment is waived in a patient less than age 55 with an acute traumatic tear (patient must be less than two months following injury)

Medium (1-3cm) or Large (3-5cm), Full-Thickness Rotator Cuff Tear

Surgical repair of a **medium or large** full-thickness rotator cuff tear may be necessary when the following criteria are met:

a) Significant progression of a full-thickness tear on serial imaging performed at least 3 months apart (at least 50% increase in tear size)

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

a) Reproducible rotator cuff pain patterns (lateral arm, deltoid pain not radiating past the elbow, night pain, or pain with overhead motions);
b) Positive impingement signs and/or tests on exam (reproducible pain when arm is positioned overhead (above plane of shoulder) with relief of pain when arm is repositioned below the plane of the shoulder) **OR** Rotator cuff weakness on physical exam;
c) Functional loss (age-appropriate activities of daily living (ADLs), occupational, athletic);
d) MRI results support a Medium (1-3cm) or Large (3-5cm), full-thickness tear (tear must be a complete single tendon or greater).

Massive (>5 cm and least 2 tendons involved), Full-Thickness Rotator Cuff Tear

Surgical repair of a massive torn rotator cuff may be necessary when **ALL** of the following criteria are met:

a) MRI demonstrates Goutallier stage 0 (normal muscle), 1 (some fatty streaks), or 2 (less than 50% fatty degeneration or infiltration);
b) Warner classification of atrophy "none" or "mild";
c) No x-ray evidence of chronic subacromial articulation of humeral head (e.g. acromiohumeral distance less than 7 millimeters, acetabularization or femoralization, no remodeling of greater tuberosity, lack of sclerotic lateral acromion, lack of extensive CA (coracoacromial) ligament calcification;
d) MRI showing massive (>5cm), full-thickness tear.

Revision Rotator Cuff Repair

Surgical revision within 1 year of a previously repaired small, medium, large or massive torn rotator cuff will be reviewed on a case-by-case basis, and must include a MRI (with or without arthrogram) or CT arthrogram that demonstrate failure of healing (Sugaya type 4-5) or recurrent tear > 3 months after index surgery.

Sugaya classification

Type I	Sufficient thickness, homogeneous tendon (low signal on T2 images)
Type II	Sufficient thickness, partial high-intensity from within the tendon
Type III	Insufficient thickness without discontinuity
Type IV	Minor discontinuity on more than one slice, suggesting a small tear
Type V	Major discontinuity suggesting a moderate or large tear

All RCR revision cases greater than 1 year following an initial repair must again meet indications as specified by tear size listed above.

Contraindications (applies to all Rotator Cuff Repair):

- Active infection (local or remote)
- Treatment of asymptomatic, full thickness rotator cuff tear
- Active systemic bacteremia
- Deltoid or rotator cuff paralysis
- Kellgren-Lawrence Grade 4 osteoarthritis [see grading appendix].

Labral Repairs

There is a tendency to misinterpret normal degenerative labral changes and variations as "tears" which may lead to over-utilization of surgery if decisions are made upon imaging reports alone. In addition, the anterior-superior labrum (from 12 to 3 o'clock for a right shoulder) has many normal variations that can be misinterpreted as a tear, including sublabral hole/foramen, Buford complex, and a labral overhang with an intact biceps anchor. In general, true labral tears lead to pain, catching, popping, functional limitations (including age-appropriate activities of daily living (ADLs), occupational and athletic), micro-instability, and gross instability. Labral repairs are most-frequently associated with a specific traumatic event.

Superior Labral Anterior-Posterior (SLAP) Tear

Surgical indications should be focused on clinical symptoms and failure to respond to non-operative treatments, rather than imaging (due to a higher percentage of tears being missed on images AND significant over-diagnosing of tears based on imaging-alone).

Repair *(not debridement of a SLAP lesion)* may be necessary when ALL of the following criteria are met:

a) History compatible with tear (acute onset in thrower or overhead athlete, fall, traction injury, shear injury (MVA), lifting injury);
b) Pain localized to the glenohumeral joint (often only associated with certain reaching or lifting activities and at night) or painful catching/popping/locking sensations;
c) Inability to perform desired tasks without pain (age-appropriate ADLs, sports, occupation);
d) Age < 40*;
e) MRI demonstrating superior labral tear;
f) Type 2 or 4 SLAP tear (not type 1 or 3);
    I Labral and biceps fraying, anchor intact
    II **Labral fraying with detached biceps tendon anchor**
    III Bucket handle tear, intact biceps tendon anchor (biceps separates from bucket handle tear)
    IV **Bucket handle tear with detached biceps tendon anchor (remains attached to bucket handle tear)**
g) Failure of at least 12 weeks of non-operative treatment, including activity modification/avoidance of painful activities AND at least one of the following:
    i) Minimum of 4 weeks of oral NSAIDs (if not medically contraindicated)
    ii) Physical therapy or a properly instructed home exercise program
    iii) Intra-articular injection

***NOTE:** All requests for SLAP repair in patient age >40 will be reviewed on a case-by-case basis.

Contraindications:

- ANY evidence of degenerative disease upon imaging
- Smoker and age >40
- Diabetics with poor control HgBA1c > 7
- MRI findings not attributable to normal common variants (for example, labral overhang)

NOTE: In cases where a true SLAP tear exists, but the patient has one or more contraindications, or findings at the time of surgery indicate that a repair is not feasible, a SLAP debridement (limited, extensive debridement), biceps tenotomy or tenodesis may be an alternative.
See Tenotomy and Tenodesis Indications.

Anterior-Inferior Labral-Tear (Bankart lesion):

A Bankart tear of the glenoid labrum is located at the 3-6 o'clock position of a right shoulder. It is typically caused by a traumatic instability event (dislocation or subluxation). It can involve the labrum, the capsular ligaments (IGHL [inferior glenohumeral ligamentous complex]) and/or the

bone (bony Bankart fracture). If symptomatic, bankart tears typically require surgical repair as patients less than 30 have a high recurrence rate of instability.

Bankart repair of an acute labral tear may be necessary when **ALL** of the following criteria are met:

a) History of an acute event of instability (subluxation or dislocation) or acute onset of pain following activity;
b) Acute labral tear on MRI or CT imaging;
c) Age < 30;
d) Range of motion is not limited by stiffness upon physical exam;
e) Clinical exam findings demonstrate positive apprehension test, positive relocation test, positive labral grind test, or objective laxity with pain.

Bankart repair of a recurrent (two or more dislocations) labral tear may be necessary when **ALL** of the following criteria are met:

a) Recurrent instability (subluxation or dislocation);
b) Evidence of a labral tear with or without bony Bankart fracture of the glenoid upon imaging;
c) Range of motion is not limited by stiffness upon physical exam;
d) Clinical exam findings demonstrate positive apprehension test, positive relocation test, positive labral grind test, or objective laxity with pain.

Contraindications:

- Pain only (no documented recurrent instability events) in patients over 40
- X-ray, MRI or CT documentation of degenerative arthritis of the glenohumeral joint
- Radiographic findings of a Hill Sachs humeral head defect (if surgery only includes Bankart repair)
- Cases demonstrating X-ray, MRI or CT documentation of greater than 20% glenoid bone loss require review on a case by case basis. These cases indicate that a Latarjet reconstruction or bone graft [autograft or allograft] repair may be required.

Posterior Labral Tear:

Similar to Bankart tears, posterior labral tears are often associated with a paralabral cyst that grows large enough to compress the suprascapular nerve (isolated to infraspinatus). Posterior labral tears are frequently associated with contact sports or a patient history of a traumatic fall/posterior loading of the joint. They are often observed in athletes performing repetitive posterior loading of the joint (offensive linemen in football, weight-lifting: push-ups and bench press). These tears are more likely to result in pain and weakness rather than recurrent dislocations/instability. Posterior labral changes are often misinterpreted on MRI as a "tear" in age >40 years old, when changes due to early glenohumeral degeneration begin to appear.

Surgical repair of a posterior labral tear may be necessary when **ALL** of the following criteria are met:

a) Symptoms of pain OR painful catching/popping OR instability;
b) MRI findings of posterior labral tear;
c) Exam findings demonstrate positive load-shift test, jerk test, glenohumeral grind test, or objective laxity with pain or profound weakness;
d) Failure of at least 12 weeks of non-operative treatment (unless presenting as a traumatic tear in a competitive athlete at any level) that includes any **two** of the following:
    i) Physical therapy or a properly instructed home exercise program
    ii) Rest or activity modification
    iii) Minimum of 4 weeks of oral NSAIDs (if not medically contraindicated)
e) Age < 40;
f) No radiographic evidence of degenerative disease (e.g. posterior glenoid cartilage loss, subchondral glenoid cysts, mucoid degeneration of labrum, narrowing of joint space with posterior humeral head subluxation on axillary x-ray or axial MRI images).

Combined Labral Tears (e.g. Anterior/Posterior, SLAP/Anterior, SLAP/Posterior, SLAP/Ant./Post.)

Combined tears that require repair are almost always associated with significant recurrent instability. Often tears begin within one area and overtime the failure to repair the original injury causes the tear to extend.

Surgical repair of an acute combination tear may be necessary when **ALL** of the following criteria are met:

a) History of an acute event of instability (subluxation or dislocation);
b) Acute labral tear on MRI/CT imaging with/without bony Bankart fracture not > 25% of glenoid width upon imaging;
c) Age < 30;
d) Range of motion not limited by stiffness upon physical exam;
e) Clinical exam findings demonstrate positive apprehension test and positive relocation test, OR positive labral grind test OR objective laxity with pain;
f) Minimal to no evidence of degenerative changes on imaging.

Surgical repair of recurrent combination tear may be necessary when **ALL** of the following criteria are met:

a) Recurrent instability (subluxation or dislocation) with at least 2 instability events;
b) Labral tear on MRI or CT, with/without bony Bankart fracture not > 25% of glenoid width upon imaging;
c) Range of motion not limited by stiffness upon physical exam;
d) Clinical exam findings demonstrate positive apprehension test and positive relocation test, or positive labral grind test, or objective laxity with pain;
e) Minimal to no evidence of degenerative changes on imaging.

NOTE: Thermal capsulorrhaphy was previously used to augment unstable shoulders, with and without labral tears. It is no longer considered an accepted procedure for unstable shoulders.

Open or Arthroscopic Capsulorrhaphy for Multidirectional Instability of the Shoulder (MDI)

Surgical repair for MDI may be necessary when **ALL** of the following criteria are met:

a) Patient has pain and limited function (age-appropriate ADLs, occupation, or sports);
b) Patient has recurrent instability due to hyperlaxity or mobility and no traumatic dislocation;
c) Physical exam supports repeatable increased glenohumeral joint translation (greater than 1cm of movement during the sulcus test);
d) Imaging (x-ray and MRI) rules out fracture and/or other soft-tissue injury;
e) Failure of at least 6 months of formal physical therapy and activity modification

Adhesive Capsulitis (Lysis of Adhesions; Capsulotomy/Capsular Release)

Adhesive capsulitis is a thickening and tightening of the soft tissue capsule that surrounds the glenohumeral joint. Adhesive capsulitis usually begins with the gradual onset of pain and limitation of shoulder motion, with a progression to interference of activities of daily living. Primary adhesive capsulitis is the subject of much debate as the specific causes of this condition are not fully understood. Patients with uncontrolled diabetes have a significantly higher risk of developing adhesive capsulitis than the general population. Secondary (acquired) adhesive capsulitis develops from a known cause, such as stiffness following a shoulder injury, surgery, or a prolonged period of immobilization. Adhesive capsulitis may last from one to three years, despite active treatment, and is more common in women.

Surgery for adhesive capsulitis may be necessary when **ALL** of the following criteria are met:

a) Patient has pain, loss of motion, and limited function (age-appropriate ADLs, occupation, or sports);
b) Physical exam demonstrates loss of motion (use contralateral shoulder for comparison);
c) Comorbities (such as diabetes, lung disease) and other causes of loss of shoulder motion have been ruled out. (Imaging (x-ray and/or MRI) may be used to identify other underlying problems);
d) Failure of at least 12 weeks of non-operative treatment that includes physical therapy or a properly instructed home exercise program and documentation of any of the following:
    i) Minimum of 4 weeks of oral or topical NSAIDs (if not medically contraindicated)
    ii) Rest or activity modification
    iii) Heat/Ice
    iv) Corticosteroid injection

Distal Clavicle Excision (DCE)

The AC joint (acromioclavicular joint) can develop degenerative disease in those over 30 years of age, those with a history of a prior grade I or II AC sprain/separation, those with a history of heavy lifting (labor occupation or strength training), or those with evidence of remote trauma. It can occur in isolated form in younger patients (distal clavicle osteolysis) but is more commonly observed concomitantly with rotator cuff disease in those over age 40 years of age.

Distal Clavicle Excision may be necessary when **ALL** of the following criteria are met:

a) Positive clinical exam findings as evidenced by pain upon palpation over AC joint and pain with cross-body adduction test;
b) Positive findings on X-Ray **or** MRI:
    i) Radiographic (x-ray) demonstrates narrowed joint space, distal clavicle or medial acromial sclerosis, and/or osteophytes or cystic degeneration of distal clavicle or medial acromion correlating with the clinical findings, patient symptoms and diagnosis; OR
    ii) MRI findings with edema in the distal clavicle and/or inflammatory change within the joint space correlating with the clinical findings, patient symptoms and diagnosis;
c) Failure of at least 12 weeks of non-operative treatment that includes at least **two** of the following:
    i) Oral or topical NSAIDS (4 week minimum for oral NSAIDS unless contraindicated)
    ii) Rest/activity modification
    iii) AC joint corticosteroid injection (if DCE is to be performed as a standalone procedure, AC injection must be performed*)
    iv) Physical therapy or a properly instructed home exercise program

Note:** If DCE is to be performed ***in isolation **of other shoulder procedures**, an AC joint injection is required for diagnostic purposes and documentation should support pain relief from injection. If no response to injection, this is a strong negative predictor to surgical outcome for isolated DCE.

Long Head Biceps (LHB) Tenotomy/Tenodesis

Pain in the area of the long head of the biceps tendon is common, especially in overhead sports and in the presence of rotator cuff tears (especially subscapularis). It can be an isolated source of pain in chronic tenosynovitis, SLAP tears, or small tears of the biceps sling, resulting in dynamic or static subluxation or dislocation of the tendon. LHB problems are frequently missed on MRI (especially using contrast which can mask the pathology). The choice of tenodesis versus tenotomy is controversial. Typically, tenodesis is better for more active, muscular individuals performing higher demand activity (labor, sports). Tenotomy is generally a better option for older, less active patients with poor muscle definition, as it generally leaves the patient with a "popeye" deformity and the possibility of biceps cramping or anterior shoulder pain with activity. The choice of tenotomy vs. tenodesis is generally left up to the surgeon/patient.

NOTE: The indications for tenodesis and tenotomy are the same with the exception that tenodesis is typically better for more active, muscular individuals that are performing higher-demand activities for work or sport. Tenotomy is often preferred in patients that smoke (this is a relative indication of tenotomy over tenodesis) due to healing problems in tenodesis.

Tenotomy or Tenodesis may be necessary when **ALL** of the following criteria are met:

a) Any of the following:
    i) Age > 50 with SLAP tear
    ii) Smoker with SLAP labral tear (regardless of age, more significant with increasing age)
    iii) Failed SLAP repair
    iv) SLAP tear in diabetic or patient with loss of motion or predisposition to stiff shoulder

v) LHB hypertrophy/tearing/subluxation in association with RCR
vi) Diagnosis of chronic LHB groove pain from tenosynovitis;

AND

b) Failure of at least 12 weeks of non-operative treatment to include **TWO** of the following:
i) Oral or topical NSAIDS (4 week minimum for oral NSAIDS unless contraindicated)
ii) Rest/activity modification
iii) Bicipital groove or IA joint corticosteroid injection
iv) Physical therapy or a properly instructed home exercise program

Synovectomy

Synovitis is common in many shoulder conditions and typically resolves when the primary pathology is treated. Most commonly, this includes loose bodies, inflammatory arthritis or degenerative arthritis, labral tears and adhesive capsulitis. Primary synovial diseases include pigmented villonodular synovitis, synovial chondromatosis, rheumatoid arthritis, other inflammatory arthritides, traumatic synovial hypertrophy or metaplasia.

Synovectomy as an isolated procedure is usually reserved for primary synovial disease or in cases where secondary hypertrophic synovitis is documented during arthroscopy (these include adhesive capsulitis, osteoarthritis, chronic rotator cuff tear). These should be evident on arthroscopic photographs taken at surgery but may be missed on preoperative images.

Subacromial Decompression (SAD)

There are 3 types of acromion anatomy according to Bigliani classification: type 1, flat (20%), type 2, curved (40%) and type 3, hooked, (40%). Acromioplasty involves removing bone from the undersurface of the acromion to change a type 3 (hooked) acromion to a type 1 (flat) acromion. Although debated for decades, current evidence concludes that there is no role for isolated acromioplasty (subacromial decompression), which prompted conversion of CPT code 29826 (acromioplasty, subacromial decompression) from an index, primary, "stand-alone" code to an "add-on" code only.

Subacromial decompression may be necessary **in conjunction with** other shoulder procedures (listed below) if there is radiographic (x-ray) evidence of mechanical outlet impingement as evidenced by a Bigliani type 3 morphology. Subacromial decompression should not be performed in isolation.

a) Rotator cuff repair
b) Labral repair
c) Capsulorrhaphy
d) Loose body removal
e) Synovectomy
f) Debridement
g) Distal clavicle excision
h) Lysis of adhesions
i) Biceps tenodesis/tenotomy

Contraindications:

- Type 1 or Type 2 or a thinned acromion. Subacromial bursectomy may be a reasonable option.
- If patient has received an injection in the subacromial space and there is failure to adequately respond—significant relief (>50%) for minimum of 1 week—to injection in the subacromial space (pain should respond temporarily if impingement).
- Prior subacromial decompression with either a Type 1 or a thinned acromion or no evidence of overhang on x-ray (unnecessary revision can thin the acromion and lead to deltoid avulsion and/or acromial fracture)
- Open SAD procedures should rarely be performed given the increased morbidity due to deltoid disruption.

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TOC

22532 – Thoracic Spine Surgery

CPT Codes: 22532, 22534, 22556, 22585, 22610, 22614, 22830, 63003, 63016, 63046, 63048, 63055, 63057, 63064, 63066, 63077, 63078

OVERVIEW:

Thoracic Decompression with or without fusion:
Thoracic disc herniation with or without nerve root compression is usually treated conservatively (non-surgically). A back brace may be worn to provide support and limit back motion. Injection of local anesthetic and steroids around the spinal nerve (spinal nerve blocks) may be effective in relieving radicular pain. As symptoms subside, activity is gradually increased. This may include physical therapy and/or a home exercise program. Preventive and maintenance measures (e.g., exercise, proper body mechanics) should be continued indefinitely. Job modification may be necessary to avoid aggravating activities.

Simple laminectomy is rarely used in the treatment of thoracic disc herniation because of the high risk of neurologic deterioration and paralysis. Excision of the disc (discectomy) may be performed via several different surgical approaches –anteriorly, laterally, or transpedicularly. Fusion should be performed only if surgery causes instability in the spinal column. Many newer techniques do not usually destabilize the thoracic spine.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual needs and based on an assessment of the local delivery system.

INDICATIONS:

All requests for thoracic spine surgery will be reviewed on **case-by-case** basis. The following criteria **must** be met for consideration.

1. **INDICATIONS FOR DECOMPRESSION SURGERY ONLY INCLUDE:**

    - Positive Clinical Findings of Myelopathy with evidence of progressive neurologic deficits consistent with worsening **spinal cord compression**— immediate surgical evaluation is indicated. Symptoms may include any of the following:
        - lower extremity weakness
        - unsteady gait related to myelopathy/balance or generalized lower extremity weakness
        - disturbance with coordination
        - hyperreflexia
        - positive Babinski sign
        - clonus

    OR

- Progressive neurological deficit (motor deficit, bowel or bladder dysfunction) or lower extremity weakness (0-3/5 on the strength scale) or paralysis with corresponding evidence of spinal cord or nerve root compression on an MRI or CT scan images — immediate surgical evaluation is indicated;

OR

- When ***ALL* of the following** criteria are met:
  - Persistent or recurrent symptoms/pain with functional limitations that are unresponsive to **at least 12 weeks of conservative treatment** concerted conservative treatment to include completed and appropriate therapy (including stabilization exercises and epidural steroid injections); ***AND***
  - Imaging studies confirm the presence of spinal cord or spinal nerve root compression at the level corresponding with the clinical findings (MRI or CT).

2. <u>INDICATIONS FOR THORACIC DECOMPRESSION WITH FUSION SURGERY INCLUDE:</u>

a) Deformity Cases—please refer to our ***Deformity Spine Surgery (Adult) Guideline.***

OR

b) For Myelopathy or radiculopathy secondary to cord or root compression (see criteria described below) satisfying the indications for decompressive surgery requiring extensive decompression that results in destabilization of the thoracic spine.

NOTE: There is no current evidence base to support fusion in the thoracic spine for degenerative disease without significant neurological compression or significant deformity as outlined above.

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 nicotine use prior to fusion surgery**. The patient must refrain from nicotine use 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.

NOTE: Cases of severe myelopathy and progressive neurological dysfunction may require surgery despite these general contraindications.

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