Clinical Policy Title: Spine pain – facet joint injections

Clinical Policy Number: 03.02.07

Effective Date: April 1, 2016
Initial Review Date: June 16, 2013
Most Recent Review Date: January 18, 2017
Next Review Date: January 2018

Related policies:

CP# 03.02.02 Radiofrequency ablation treatment for spine pain
CP# 03.03.01 Spinal cord stimulators for chronic pain
CP# 03.03.03 Spinal surgeries
CP# 03.03.04 Spine pain — epidural steroid injections
CP# 03.02.05 Spine pain — trigger point injections
CP# 03.03.06 Biofeedback for chronic pain
CP# 03.03.08 Intravenous lidocaine infusion for neuropathic pain

ABOUT THIS POLICY: Keystone First has developed clinical policies to assist with making coverage determinations. Keystone First’s clinical policies are based on guidelines from established industry sources, such as the Centers for Medicare & Medicaid Services (CMS), state regulatory agencies, the American Medical Association (AMA), medical specialty professional societies, and peer-reviewed professional literature. These clinical policies along with other sources, such as plan benefits and state and federal laws and regulatory requirements, including any state- or plan-specific definition of “medically necessary,” and the specific facts of the particular situation are considered by Keystone First when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state or federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. Keystone First’s clinical policies are for informational purposes only and not intended as medical advice or to direct treatment. Physicians and other health care providers are solely responsible for the treatment decisions for their patients. Keystone First’s clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, Keystone First will update its clinical policies as necessary. Keystone First’s clinical policies are not guarantees of payment.

Coverage Policy

Keystone First considers the use of facet joint injection treatment for spine pain to be clinically proven and therefore, medically necessary when the following criteria are met:

Facet joint (also known as zygapophysial joint or Z-joint) intraarticular injections and facet nerve block injections may be performed for either diagnostic or therapeutic purposes in chronic back and neck pain. Keystone First considers facet joint injections and facet joint nerve blocks medically necessary in the management of chronic back or neck pain unresponsive to conservative measures in patients suspected of having pain originating in the facet joint when the following criteria are met:
1. Documentation of indications for procedures:
   A. Presence of non-radicular neck or back pain of at least 4—6 weeks duration; AND
   B. Previous physical therapy and medication management that has provided inadequate relief; AND
   C. There are no contraindications such as red flag signs (see Appendix A); anticoagulation, end of life care, or other untreated causes of spine pain.

2. Evidence based therapy for the procedure:
   A. Based upon published clinical trials, maximal diagnostic and therapeutic injections would include one diagnostic and two therapeutic series of injections over a six month period. A series of three injections per joint/level involved should be spaced at least three months apart, for no more than two sets.
   B. For recurrent pain, other therapeutic interventions should be considered. Therapeutic injections are intended to allow greater ability for the member to participate in physical therapy and exercise, and for time to consider other therapeutic options should the member’s back pain persist.
   C. Approval for facet injections, if medically necessary, may be given on an individual basis.

3. Criteria for providers performing facets joint injections:
   A. Board-certified physicians certified in the diagnosis and treatment of members with chronic as well as acute pain in spinal conditions are qualified. Appropriately trained physicians include:
      - Certification in pain management.
      - Neurologist.
      - Physiatrist, physical medicine & rehabilitation.
      - Radiologist.
      - General anesthesia.
      - Neurosurgeon.
      - Orthopedics.
      - For Keystone First designated rural areas or access issues obtaining this specialty, medical directors shall determine authorization for this procedure.

Limitations:

1. All other uses of facet joint injections are not medically necessary.
2. Limitations for facet injections:
   A. Facet joint injections must be performed under radiographic imaging guidance to assure accurate placement of the needle in the facet joint or on the medial nerve branch of the facet joint. (Local coverage determinations)
   B. Keystone First considers the use of ultrasound guidance of facet injections experimental and investigational because of insufficient evidence of its effectiveness and therefore, not medically necessary:
Coverage will be extended for only one type of procedure during one day/session of treatment unless the member has recently discontinued anticoagulant therapy for the purpose of interventional pain management; AND

Pre-procedural evaluation leading to suspicion of the presence of facet joint pathology must be explicitly documented in the patient’s medical record along with post-procedural conclusions; AND

Procedures performed will be limited to three (3) levels (whether unilateral or bilateral) for each anatomical region as defined by LCD; AND

A diagnostic block can be repeated once, at any given level, at least one week (preferably 2 weeks) after the first block. If repeated, strong consideration should be given to utilizing administration of an anesthetic of different duration of action. (This helps confirm the validity of the diagnostic facet block, and may reduce the incidence of false positive responses due to placebo effect); AND

Once a structure is proven to be negative as a pain generator, no repeat interventions should be directed at that structure unless there is a new clinical presentation with symptoms, signs, and diagnostic studies of known reliability and validity that implicate the structure.

C. Keystone First considers epidural block or sympathetic block provided to a patient on the same day as facet joint injections investigational because of insufficient evidence of its effectiveness and therefore, not medically necessary.

D. Multiple blocks on the same day could lead to improper or lack of diagnosis.

### Alternative covered services:

- Pharmacotherapy
- Physical therapy, osteopathic manipulation, chiropractic manipulation.
- Surgical intervention.

### Background

The theoretical merits of zygapophysial (also called Z-joint or facet joint) injection to diagnose the cause of spinal pain, reduce inflammation and discomfort locally, and to allow time for a durable resolution of chronic back and neck pain either through surgery, radiofrequency ablation or involution of the extruded disk are many.

Facet pathology may be related to hypertrophic arthropathy involving one or more of the facets or may arise as the result of acute or chronic trauma. Facet involvement is primarily distinguished by the fact that it does not have a radicular component, and it is aggravated with motion. Typically facet joint intra-articular injections and facet joint nerve blocks (to the medial branch nerves that provide innervation to the facet joint) are carried out to evaluate or to alleviate pain in the cervical,
lumbar, and thoracic regions of the spine, utilizing either local anesthetic alone or local anesthetic with steroids.

Diagnosis of back pain arising from facet disease is achieved through a double-comparative local anesthetic blockade of the suspected vertebral joint. If pain relief is achieved, then the diagnosis can be made. Injections may need to be performed serially in order to make the diagnosis at a specific level(s).

The efficacy of facet joint injections as treatment of spinal pain has been assessed utilizing multiple solutions including saline, local anesthetics, steroids, and other drugs such as clonidine, ketamine, hypertonic sodium chloride solution, and amitriptyline. Indications for the therapeutic use of facet joint injection include:

- Chronic spinal pain, duration exceeding 4 — 6 weeks, with failure of non-invasive therapy (e.g., physical therapy, medications).
- As an adjunct in treatment of chronic spinal pain to the use of other conservative forms of therapy (e.g., yoga, stretching).

Contraindications to use of facet joint injection include:

- Anticoagulant therapy (e.g., coumadin, low molecular weight heparin).
- Concomitant malignancy and spinal metastases.

While there are no studies on the optimal number of injections, consensus guidelines suggest that patients with chronic neck and back pain who require more than two or three injections over several months are not likely to benefit from additional injections.

**Searches**

Keystone First searched PubMed and the databases of:

- UK National Health Services Center for Reviews and Dissemination.
- Agency for Healthcare Research and Quality’s National Guideline Clearinghouse and other evidence-based practice centers.
- The Centers for Medicare & Medicaid Services (CMS).

We conducted searches on November 16, 2016. Searched terms were: "Injections, spinal (MeSH)" ,"Zygapophyseal joint (MeSH)" and "Spinal surgery."

We included:

- **Systematic reviews**, which pool results from multiple studies to achieve larger sample sizes and greater precision of effect estimation than in smaller primary studies. Systematic reviews use predetermined transparent methods to minimize bias, effectively treating the review as a scientific endeavor, and are thus rated highest in evidence-grading hierarchies.
- **Guidelines based on systematic reviews**.
- **Economic analyses**, such as cost-effectiveness, and benefit or utility studies (but not simple cost studies), reporting both costs and outcomes — sometimes referred to as efficiency studies — which also rank near the top of evidence hierarchies.

**Findings**

There is a great deal of evidence from medical professional societies and studies from the contemporary peer-reviewed medical literature for the safety and effectiveness of facet joint injection provided for relief of spinal pain. Some of this evidence conflicts with the original research presented nearly twenty-five years ago on the efficacy of facet joint injection.

Ribeiro (2013) conducted a randomized clinical trial (RCT) to compare the effectiveness of facet joint injection versus systemic steroid, including intra-articular injections and medial branch nerve blocks to manage facet-mediated pain. Sixty subjects with a diagnosis of facet joint syndrome were enrolled in the study. The experimental group was administered with intra-articular injection of 6 lumbar facet joints with triamcinolone hexacetonide; the control group was administered with triamcinolone acetonide intramuscular injection of six lumbar paravertebral points. Both treatments were found effective, with a slight superiority of the intra-articular injection of steroids over intramuscular injection.

Manchikanti (2012), in an analysis of facet joint injections found the procedure to be relatively free of complications. The authors found no cases of infection, spinal cord irritation, or nerve damage in almost 7,500 encounters totaling 43,000 facet joint nerve blocks with 3,370 targets in the cervical region, 3,162 in the lumbar region, and 950 in the thoracic region. One drawback of the study was that multiple nerve blocks were often performed at each encounter. There were no major complications. Minor side effects and complications observed included overall intravascular penetration in 11.4 percent of encounters; with local hematoma seen only in 1.2 percent of the patients, and with profuse bleeding, bruising, soreness, nerve root irritation, and all other effects such as vasovagal reactions observed in 1 percent or less of the episodes.

Park (2012) broadened the spectrum of disease to which facet joint injection may be applied beyond spinal pain per se. The authors investigated the effects of therapeutic cervical facet joint injections on patients with long-standing myofascial neck pain. In a clinical trial inclusive of four hundred patients with long-standing cervical pain patients were randomized to bilateral injections at C5/C6 and C6/C7 after diagnostic, controlled double-blind blocks. Interventions such as medication and a home exercise program were simultaneously applied to patients in a non-injection group. Cervical range of motion (CROM), mean reduction of numeric rating scale (NRS) for pain, and comorbid tension-type headache were compared at one year of follow-up. Treatment duration and symptom-free periods were compared according to age group with the injection group showing increased CROM, increased mean NRS pain reduction, and decreased incidence of combined tension-type headache compared with the non-injected group.
Facet joint injection also fares well in comparison to other contemporary treatments of spinal discomfort. Civelek (2012) compared the clinical effectiveness of facet joint injections and facet joint radiofrequency (FJRF) denervation in patients with chronic low back pain. The study included a total of 100 patients and outcome assessments were performed at baseline, three months, six months and twelve months post-intervention. Injections showed better results ($p < 0.001$) than FJRF. The authors concluded the first choice of therapy for refractory chronic low back pain should be facet joint injection and if pain reoccurs after a period of time or injection is not effective, FJRF is an alternative therapeutic measure.

The American Society of Anesthesiologists (ASA) Task Force on Chronic Pain Management (2010) found that intra-articular facet joint injections are appropriate for use in the symptomatic relief of facet-mediated pain. As to nerve blocks, the ASA suggested that medial branch blocks may be useful for the treatment of facet-mediated spine pain.

Some investigators have proposed using ultrasound to guide facet joint injection instead of radiographic techniques in order to reduce radiation exposure to provider and patient over multiple injections. Greher (2004) created a technique using cadaveric material to localize and inject, but the authors recorded a nearly ten percent rate of failure of ultrasound-guided facet joint injection to hit its target nerve or anatomic landmark. The technique has been promoted as an alternative in young patients of ideal body weight in whom the cumulative effect of many radio-exposures during facet joint injections over a number of years may be significant.

**Policy updates:**

A systematic review (Manchikanti, 2015) inclusive of thirty-one trials from 1966 through March 2014 found evidence that local anesthetic alone and in combination with steroids was effective in epidural and facet joint injections for the management of spinal pain. The evidence showed equal efficacy for local anesthetic with steroids and local anesthetic alone in multiple spinal conditions except for disc herniation where the superiority of local anesthetic with steroids was seen over local anesthetic alone. The authors reported efficacy for facet joint nerve blocks in managing cervical, lumbar, or thoracic facet joint pain. Clinical improvement was sustained after two years in 70 — 92 percent of patients undergoing facet joint injection. At 1-year follow-up, improvement was seen in 80 — 92 percent of the patients.

Evidence supporting the use of therapeutic intra-articular facet joint injections for patients with suspected facet joint pain is sparse. A systematic review (Vekaria 2016) to determine if intra-articular facet joint injections with active drug are more effective in reducing back pain and back pain-related disability than a sham procedure or a placebo/inactive injection and to determine if intra-articular facet joint injections are more effective in reducing back pain and back pain-related disability than conservative treatment failed to identify conclusive benefits of intervention.

**Summary of clinical evidence:**
<table>
<thead>
<tr>
<th>Citation</th>
<th>Content, Methods, Recommendations</th>
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<tbody>
<tr>
<td>Vekaria (2016)</td>
<td>Key points:</td>
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</table>
| Intra-articular facet joint injections for low back pain: a systematic review | • Systematic review found only a small number of studies met inclusion criteria to determine if intra-articular facet joint injections with active drug are more effective in reducing back pain and back pain-related disability than a sham procedure or a placebo/inactive injection and to determine if intra-articular facet joint injections with active drug or placebo/inactive injection are more effective in reducing back pain and back pain-related disability than conservative treatment.  
• The scale of the studies were limited in most cases (range 18-109 participants)  
• In terms of pain and disability outcomes most were inconclusive.  
• Only two of the trials reported any significant between-group differences in pain (mean difference -1.0, 95% CI -2.0 to -0.1) and (p = 0.032) or disability (mean difference -3.0, 95% CI -6.2 to 0.2) and (p = 0.013) outcomes.  
• A number of methodological issues were identified and the authors concluded that the studies found were too diverse to conduct any meta-analysis. |
| Manchikanti (2015)        | Key points:                        |
| Comparison of the efficacy of saline, local anesthetics, and steroids in epidural and facet joint injections | • A systematic review inclusive of 31 trials found evidence that local anesthetic alone and in combination with steroids was effective in epidural and facet joint injections for the management of spinal pain.  
• The evidence showed equal efficacy for local anesthetic with steroids and local anesthetic alone in multiple spinal conditions except for disc herniation where the superiority of local anesthetic with steroids was seen over local anesthetic alone.  
• The authors reported efficacy for facet joint nerve blocks in managing cervical, lumbar, or thoracic facet joint pain.  
• Clinical improvement was sustained after two years in 70 — 92% of the patients. At one year follow-up, improvement was seen in 80 — 92% of the patients. |
| Ribeiro (2013)            | Key points:                        |
| Effect of facet joint injection versus systemic steroids in low back pain | • RCT to compare the effectiveness of facet joint injection versus systemic steroid including intra-articular injections and medial branch nerve blocks to manage facet-mediated pain.  
• Sixty subjects with a diagnosis of facet joint syndrome were enrolled in the study.  
• The experimental group was administered with intra-articular injection of 6 lumbar facet joints with triamcinolone hexacetonide; the control group was administered with triamcinolone acetate intramuscular injection of six lumbar paravertebral points.  
• Both treatments were effective, with a slight superiority of the intra-articular injection of steroids over intramuscular injection. |
| Park (2012)               | Key points:                        |
| Effect of adding cervical facet joint injections in a multimodal treatment program for long-standing cervical myofascial pain syndrome with referral pain patterns of cervical facet joint syndrome. | • Four hundred patients with long-standing cervical pain were randomized to bilateral injections at C5/C6 and C6/C7 after diagnostic, controlled double-blind blocks.  
• Interventions such as medication and a home exercise program were simultaneously applied to patients in the non-injection group.  
• Cervical range of motion (CROM), mean reduction of numeric rate scale (NRS) for pain, and comorbid tension-type headache were compared at one year of follow-up.  
• Treatment duration and symptom-free periods were compared according to age group with the injection group showing increased CROM, increased mean NRS pain reduction, and decreased incidence of combined tension-type headache compared with the non-injected group. |
<table>
<thead>
<tr>
<th>Civelek (2012)</th>
<th><strong>Key points:</strong></th>
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</table>
| Comparison of effectiveness of facet joint injection and radiofrequency denervation in chronic low back pain. | - Trial compared the clinical effectiveness of facet joint injections and facet joint radiofrequency (FJRF) denervation in patients with chronic low back pain.  
- The study included a total of 100 patients and outcome assessments were performed at baseline, three months, six months and 12 months post-intervention.  
- Injections showed better results ($p < 0.001$) than FJRF.  
- The authors concluded the first choice of therapy for refractory chronic low back pain should be facet joint injection and if pain reoccurs after a period of time or injection is not effective, FJRF is an alternative therapeutic measure. |

<table>
<thead>
<tr>
<th>Manchikanti (2012)</th>
<th><strong>Key points:</strong></th>
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</thead>
</table>
| Complications of fluoroscopically directed facet joint nerve blocks | - Trial reported no cases of infection, spinal cord irritation, or nerve damage in 7500 encounters for lumbar facet joint nerve blocks.  
- One drawback of the study was that multiple nerve blocks were often performed at each encounter.  
- There were three episodes (0.1%) of nerve root irritation found, with only minor adverse events such as local bleeding observed. |

<table>
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<tr>
<th>ASA (2010)</th>
<th><strong>Key points:</strong></th>
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</table>
| Practice guidelines for chronic pain management | - Intra-articular facet joint injections may be used for the symptomatic relief of facet-mediated pain.  
- Sacroiliac joint injections may be considered for the symptomatic relief of sacroiliac joint pain.  
- Celiac plexus blocks using local anesthetics with or without steroids may be used for the treatment of pain secondary to chronic pancreatitis.  
- Lumbar sympathetic blocks or stellate ganglion blocks may be used as components of the multimodal treatment of complex regional pain syndrome (CRPS) if used in the presence of consistent improvement and increasing duration of pain relief.  
- Sympathetic nerve blocks should not be used for the long-term treatment of non-CRPS neuropathic pain.  
- Medial branch blocks may be used for the treatment of facet-mediated spine pain.  
- Peripheral somatic nerve blocks should not be used for long-term treatment of chronic pain. |

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<tr>
<th>Greher (2004)</th>
<th><strong>Key points:</strong></th>
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</thead>
</table>
| Ultrasound-guided lumbar facet nerve block | - Developed an ultrasound guided technique in a cadaver model and then clinically tested it at the L3, L4, and L5 vertebral levels (medial branches L2, L3, and L4).  
- Based on the cadaver model, the low-frequency curved array transducer (2 — 6 MHz) provided the best visualization of the desired target points.  
- The medial branches were not directly visualized with any of the transducers.  
- In the clinical portion of the study, 89% accuracy of needle placement at the radiologically defined target point was achieved.  
- The authors indicated that the technique is appropriate mainly for individuals with ideal body mass indexes at younger ages. |

**References**

**Professional society guidelines/other:**


**Peer-reviewed references:**


**CMS National Coverage Determination (NCDs):**

No NCDs identified as of the writing of this policy.

**Local Coverage Determinations (LCDs):**


Commonly Submitted Codes

Below are the most commonly submitted codes for the service(s)/item(s) subject to this policy. This is not an exhaustive list of codes. Providers are expected to consult the appropriate coding manuals and bill in accordance with those manuals.

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Description</th>
<th>Comment</th>
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<tbody>
<tr>
<td>64490</td>
<td>Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), cervical or thoracic; single level</td>
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<tr>
<td>+64491</td>
<td>Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), cervical or thoracic; second level (List separately in addition to code for primary procedure)</td>
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<td>+64492</td>
<td>Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), cervical or thoracic; third and any additional level(s) (List separately in addition to code for primary procedure)</td>
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<td>+66494</td>
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<tr>
<td>+66495</td>
<td>Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), lumbar or sacral; third and any additional level(s) (List separately in addition to code for primary procedure)</td>
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<tr>
<td>ICD-10 Code</td>
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<tr>
<td>G54.1-G54.4</td>
<td>Nerve root and plexus disorders, Lumbosacral, cervical and thoracic</td>
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<tr>
<td>G54.8- G54.9</td>
<td>Other nerve root and plexus disorders</td>
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<td>M43.10-M43.19</td>
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<td>Spinal ethesopathy</td>
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<td>M47.814</td>
<td>Spondylosis without myelopathy or radiculopathy, thoracic region</td>
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<td>M47.817</td>
<td>Spondylosis without myelopathy or radiculopathy, lumbosacral region</td>
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<td>M47.16-</td>
<td>Other spondylosis with myelopathy, lumbar region</td>
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<td>M47.819</td>
<td>Spondylosis without myelopathy or radiculopathy, site unspecified</td>
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<td>M48.00</td>
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<td>M48.04</td>
<td>Spinal stenosis, thoracic region</td>
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<td>M48.06</td>
<td>Spinal stenosis, lumbar region</td>
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<td>M48.02-M48.08</td>
<td>Spinal stenosis (i.e., cervical, cervicothoracic, thoracic, thoracolumbar, lumbar, lumbosacral, sacral and sacrococcygeal region)</td>
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<td>M54.10-M54.18</td>
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<td>Cervicalgia</td>
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<td>M54.5-M54.9</td>
<td>Low-back pain, pain in thoracic spine, Dorsalgia</td>
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<tr>
<td>M79.1</td>
<td>Malagia (myofascial pain syndrome)</td>
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<tr>
<th>HCPCS Level II</th>
<th>Description</th>
<th>Comment</th>
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<tbody>
<tr>
<td>G0260</td>
<td>Injection procedure for sacroiliac joint; provision of anesthetic, steroid and/or other therapeutic agent, with or without arthrography</td>
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</table>

**Appendix A.**

Red flag symptoms may be indicative of more serious neurologic conditions from spinal instability. These may be categorized as the following:

- Suspected unstable fractures of the spine which may be evidenced by a history of a recent fall or injury, and major motor weakness of a limb, or progressive neurological deficits, or bladder or bowel dysfunction.
- History of cancer with suspicion of metastatic spread which may be evidenced by major motor weakness of a limb, or pain which increases at night or at rest, or progressive neurological deficits, or bladder or bowel dysfunction, or unexplained weight loss of more than ten pounds in six weeks.
- Infection with suspicion of an epidural abscess/diskitis which may be evidenced by progressive neurological deficits, or fever of 100.4°F for more than 48 hours, and C-reactive protein >10 mg/L, or recent (within two weeks) interventional spine procedures, or ESR >20 mm/hr., or immunocompromised (either immunodeficiency from any cause or IV drug abuse).
- Cauda equina syndrome which may be evidenced by bladder or bowel dysfunction, or saddle anesthesia, or progressive neurological deficits.