MEDICAL POLICY

Medical Policy Title	**Epidural Steroid Injections**
Policy Number	**7.01.115**
Current Effective Date	October 15, 2025
Next Review Date	June 2026

Our medical policies are based on the assessment of evidence based, peer-reviewed literature, and professional guidelines. Eligibility for reimbursement is based upon the benefits set forth in the member's subscriber contract. (Link to Product Disclaimer)

POLICY STATEMENT(S)

Selective Nerve Root Block (SNRB)

I. An initial level diagnostic selective nerve root block (SNRB) is considered **medically appropriate** when **ALL** the following criteria are met:
   A. Performed at a single level/single side (single nerve root) during the same session;
   B. Performed with anesthetic injectate only;
   C. Performed when attempting to establish the diagnosis of radicular pain (including radiculitis) or radiculopathy when:
      1. the diagnosis remains uncertain after standard evaluation consisting of neurologic examination; and
      2. either radiological studies or electrodiagnostic studies in ANY of the following clinical scenarios:
         a. When the physical signs and symptoms differ from that found on imaging studies;
         b. When there is clinical evidence of multi-level nerve root pathology;
         c. When the clinical presentation is suggestive of, but not typical for, both nerve root and peripheral nerve or joint disease involvement;
         d. When the clinical findings are consistent with radiculopathy in a level-specific referral pattern of an involved named spinal root(s), but the imaging studies do not corroborate the physical exam findings (positive straight leg raise test);
         e. When the individual has had previous spinal surgery;
         f. For the purposes of surgical planning.

II. A diagnostic SNRB at a spinal level other than the initial level is considered **medically appropriate** when **ALL** the following criteria are met:
   A. The response to the prior diagnostic SNRB was less than 80% relief from the injectate utilized;
   B. There is evidence of multilevel pathology;
   C. It has been at least seven (7) days since the prior diagnostic block.

III. A diagnostic SNRB is considered **not medically necessary** for any indication other than above (e.g., post-herpetic neuralgia).

IV. A diagnostic SNRB performed using injectates other than anesthetic, corticosteroid, and/or contrast agent (e.g., biologics [platelet rich plasma, stem cells, amniotic fluid]) administered alone or in combination, is considered **investigational**.

V. A therapeutic SNRB (i.e., a repeat SNRB at the same level) being performed for **ANY** indication is considered **investigational**.

VI. A SNRB performed with ultrasound guidance is considered **investigational***.*

Epidural Steroid Injections (Interlaminar, Caudal, or Transforaminal)

VII. Initial epidural steroid injections (ESI) are considered **medically appropriate** for **ANY** of the following conditions when **ALL** the associated criteria are met:

A. Treatment of presumed radiculopathy, when **ALL** the following criteria are met:

1. Failure to respond to at least four (4) weeks of conservative treatment (e.g., exercise, physical therapy, chiropractic care, or medication to include nonsteroidal anti-inflammatory drugs [NSAIDs] or analgesics);
2. The individual is participating in a comprehensive pain management program that includes ALL of the following: physical therapy, patient education, psychosocial support, and oral medications;
3. Presence of pain, dysesthesia(s), or paresthesia(s) reported by the individual in a level-specific referral pattern of an involved named spinal root(s) causing significant functional limitations have resulted in diminished quality of life and impaired age-appropriate activities of daily living, and **EITHER** of the following:
    a. Documentation of **ONE or MORE** of the following, concordant with nerve root compression of the involved named spinal root(s) demonstrated on a detailed neurologic examination within the prior three (3) months:
        i. Loss of strength of specific named muscle(s) or myotomal distribution(s),
        ii. Altered sensation to light touch, pressure, pin prick, or temperature in the sensory distribution, **or**
        iii. Diminished, absent, or asymmetric reflex(es); **or**
    b. Documentation of **EITHER** of the following studies performed within the prior 24 months:
        i. A concordant radiologist's interpretation of an advanced diagnostic imaging study (MRI or CT) of the spine demonstrating compression of the involved named spinal nerve root(s) or foraminal stenosis at the concordant level; or
        ii. Electrodiagnostic studies (EMG/NCVs) diagnostic of nerve root compression of the involved named spinal nerve root(s); and

4. Advanced diagnostic imaging within 24 months is required for cervical/thoracic interlaminar and transforaminal epidural steroid injections.

B. Treatment of presumed radiculitis or radicular pain, when **ALL** the following criteria are met:
   1. Failure to respond to at least four (4) weeks of conservative treatment (e.g., exercise, physical therapy, chiropractic care, or medication to include nonsteroidal anti-inflammatory drugs [NSAIDs] or analgesics);
   2. The individual is participating in a comprehensive pain management program that includes ALL of the following: physical therapy, patient education, psychosocial support, and oral medications;
   3. Advanced diagnostic imaging within 24 months is required for cervical/thoracic interlaminar and transforaminal ESI.

C. As an initial trial treatment for evidence of neurogenic claudication (e.g., leg pain, paresthesia, heaviness, or cramping brought on when walking and relieved when leaning forward or sitting down) when **ALL** the following criteria are met:
   1. MRI or CT scan, with or without myelography, within the past 24 months demonstrates moderate-to-severe spinal stenosis at the level to be treated;
   2. Diagnostic evaluation has ruled out other potential causes of pain;
   3. Significant functional limitations have resulted in diminished quality of life and impaired, age-appropriate activities of daily living; and
   4. Failure to respond to at least four (4) weeks of conservative treatment (e.g., exercise, physical therapy, chiropractic care, or medication to include nonsteroidal anti-inflammatory drugs [NSAIDs] or analgesics);
   5. The individual is participating in a comprehensive pain management program that includes ALL the following: physical therapy, patient education, psychosocial support, and oral medications.

VIII. A transforaminal epidural steroid injection (TFESI)* performed with an intra-articular facet joint injection with synovial cyst aspiration is considered **medically appropriate**, when **ALL** the following criteria are met:

A. The individual is participating in a comprehensive pain management program that includes ALL of the following: physical therapy, patient education, psychosocial support, and oral medications;

B. Advanced diagnostic imaging studies (i.e., magnetic resonance imaging [MRI], computed tomography [CT] scan, CT myelogram) within the past 24 months confirm compression or displacement of the corresponding nerve root by a facet joint synovial cyst;

C. There is a clinical correlation (based on history and physical examination) with the individual's signs and symptoms of radicular pain or radiculopathy.

*Note: Refer to Policy Guidelines for the exception that an TFESI can be performed on the same day

as an intra-articular facet joint injection with synovial cyst aspiration.

IX. Repeat epidural steroid injections are considered **medically appropriate** when **ALL** of the following criteria are met:

A. There has been 50% or greater relief of radicular pain for two (2) or more weeks duration and **ONE** (1) of the following criteria are met:

1. Increase in the level of function/physical activity; or
2. Reduction in the use of pain medication and/or additional medical services, such as physical therapy/chiropractic care;

B. Advanced diagnostic imaging within 24 months is required for cervical/thoracic interlaminar and transforaminal ESI;

C. It has been at least 14 days since the prior epidural steroid injections. Note: See Policy Statement X. and Policy Guidelines for ESI session limits.

X. Epidural steroid injections are considered **not medically necessary** for **ANY** of the following:

A. ESI is performed without imaging guidance (i.e., CT, fluoroscopy), except for an emergent situation or when fluoroscopic/CT guidance or the injection of contrast is contraindicated (e.g., pregnancy).

B. TFESI or Caudal ESI (CESI) is performed at more than two (2) contiguous foraminal levels (unilateral or bilateral) during the same session.

C. Caudal ESI (CESI) is performed for symptomatic levels above L4-L5.

D. Interlaminar epidural steroid injection (ILESI) or caudal epidural steroid injection (CESI) is performed at more than a one (1) spinal level during the same session.

E. ESI is performed on the same date of service as other invasive modality or procedures, with the exception of an intra-articular facet joint injection being performed together with for a transforaminal epidural steroid injection (TFESI) with synovial cyst aspiration on the same date of service.

F. ESI is performed in isolation, without the individual participating in a comprehensive pain management program that includes **all** of the following: physical therapy, patient education, psychosocial support, and oral medications.

G. There are more than three (3) sessions of epidural steroid injections per episode of pain, per region, in six (6) months (refer to Policy Guidelines).

H. There are more than four (4) sessions of epidural steroid injections per region in a rolling 12 months (refer to Policy Guidelines).

I. Axial spinal pain (i.e., absence of radiculopathy, myelopathy, myeloradiculopathy).

J. Post-herpetic neuralgia.

XI. The following are considered **investigational**:

A. ESI with ultrasound guidance for any indication.

B. ESI performed using injectates other than anesthetic, corticosteroid, and/or contrast agent (e.g., biologics [platelet rich plasma, stem cells, amniotic fluid]) administered alone or in combination.

RELATED POLICIES

Corporate Medical Policy

2.01.24 Growth Factors for Wound Healing and Other Conditions, which includes platelet rich plasma.

7.01.42 Radiofrequency Facet and Sacroiliac Joint Ablation/Denervation

7.01.116 Facet Joint Injections/ Medial Branch Blocks

11.01.03 Experimental or Investigational Services

POLICY GUIDELINE(S)

I. The policy criteria is applicable to selective nerve root blocks (SNRBs) and epidural steroid injections (ESIs) for the conditions listed within the policy statements above.

II. This policy does not apply to epidural injections administered for obstetrical or surgical epidural anesthesia, epidural injections administered for peri-operative pain management, epidural injections/indwelling catheter placement for a trial for an implantable intrathecal or epidural drug pump if there is no delegation for prior authorization of the code(s) for implantable intrathecal or epidural drug pumps.

III. This policy only applies to the injection of anesthetic, corticosteroid, and/or contrast agent, and not to other injectates, including, but not limited to, Spinraza, chemotherapy, neurolytic substances, antispasmodics, antibiotics, antivirals, or biologics (e.g., platelet-rich plasma, stem cells, amniotic fluid, etc.).

IV. An ESI (transforaminal, interlaminar, or caudal) or selective nerve root block should be performed with the use of fluoroscopic or CT guidance and the injection of ~~a~~ contrast, except for an emergent situation or when fluoroscopic-guidance, CT-guidance, or the injection of contrast is contraindicated (e.g., pregnancy).

V. When medical necessity criteria are met, up to a total of three (3) sessions of ESIs per episode of pain, per region, may be performed in six (6) months, not to exceed four (4) sessions of ESIs per region (cervical, thoracic, lumbar) is permitted in a rolling 12 months.

VI. Repeat ESI Limits: There is insufficient scientific evidence to support the scheduling of a "series-of-three" ESIs in either a diagnostic or therapeutic approach. The medical necessity of subsequent injections should be evaluated individually and be based on the response of the individual to the previous injection with regard to clinically relevant sustained reductions in pain, decreased need for medication, and improvement in the individual's functional abilities.

VII. When criteria are met, only one invasive modality or procedure will be performed on the same date of service. **Criteria exception**: when criteria are met, an exception is allowed for a

transforaminal epidural steroid injection (TFESI) that is performed with a synovial cyst aspiration on the same date of service.

VIII. When performing therapeutic TFESIs, no more than two (2) contiguous (unilateral or bilateral) levels TFESIs may performed during the same session.

IX. When performing a diagnostic SNRB, only an injection at a single level/single side during the same session should be performed.

DESCRIPTION

Definitions for Epidural Steroid Injections:

Caudal epidural steroid injection (CESI) is an injection of contrast, (absent allergy to contrast), followed by the introduction of corticosteroids and possibly a local anesthetic into the epidural space of the spine by inserting a needle through the sacral hiatus under fluoroscopic guidance into the epidural space at the sacral canal.

Interlaminar epidural steroid injection (ILESI) is an injection of contrast, (absent allergy to contrast), followed by the introduction of a corticosteroid and possibly a local anesthetic into the epidural space of the spine either through a paramedian or midline interlaminar approach under fluoroscopic guidance.

Neurogenic claudication is the clinical syndrome commonly associated with lumbar spinal stenosis. Symptoms of neurogenic claudication are described as leg pain, paresthesia, heaviness, or cramping brought on when walking and relieved when leaning forward or sitting down.

Radicular pain is pain that radiates along the course of a spinal nerve root, typically resulting from compression, inflammation, and/or injury to the nerve root.

Radiculitis is radicular pain without objective neurological findings on physical examination.

Radiculopathy is the presence of pain, dysesthesia(s), or paresthesia(s) reported by the individual in a level-specific referral pattern of an involved named spinal root(s) causing significant functional limitations (i.e., diminished quality of life and impaired age-appropriate activities of daily living) and **either** of the following:

- Documentation of any of the following (concordant with nerve root compression of the involved named spinal root[s]) demonstrating on a detailed neurological examination within the prior three (3) months:
    - Loss of strength of specific named muscle(s) or myotomal distribution(s);
    - Altered sensation to light touch, pressure, pin prick, or temperature in the sensory distribution;
    - Diminished, absent, or asymmetric reflex(es).
- Documentation of **either** of the following studies performed within the prior 24 months:
    - A concordant radiologist's interpretation of an advanced diagnostic imaging study (MRI or CT) of the spine demonstrating compression of the involved named spinal nerve root(s) or

foraminal stenosis at the concordant level(s);

- Electrodiagnostic studies (EMG/NCV) diagnostic of nerve root compression of the involved named spinal nerve root(s).

Selective nerve root block (SNRB) is a diagnostic injection of contrast (absent allergy to contrast) followed by the introduction of local anesthetic to anesthetize a single specific spinal nerve root. This procedure is performed by inserting a needle into the neuroforamen under fluoroscopic or computed tomography (CT) guidance. This procedure is often used to assist with surgical planning.

- SNRBs are erroneously referred to as transforaminal epidural steroid injection (TFESI), although technically SNRBs involve the introduction of anesthetic only and are used for diagnostic purposes.
- Selective nerve root blocks (SNRBs) performed for the purpose of treating pain (i.e., repeat SNRB at the same level) may be termed therapeutic selective nerve root blocks. There is insufficient evidence to support the clinical utility of therapeutic selective nerve root bocks (SNRBs).

Session is a time period, which includes all procedures (i.e., medial branch block (MBB), intra-articular (IA) facet joint injection, and radiofrequency ablation (RFA)) performed on a single date of service.

Spinal stenosis is the narrowing of the spinal canal usually due to spinal degeneration that occurs with aging. lt may also be the result of spinal disc herniation, osteoarthritis, or a tumor.

Transforaminal epidural steroid injection (TFESI) is a therapeutic injection of contrast (absent allergy to contrast) performed at a single or multiple spinal levels, followed by the introduction of a corticosteroid and possibly a local anesthetic by inserting a needle into the neuroforamen under fluoroscopic or computed tomography (CT) guidance.

SUPPORTIVE LITERATURE

Epidural spinal injection (ESI) is one of several therapies available for people who fail conservative treatment, and is a common modality used for radicular pain and lumbar referred pain with several potentially painful conditions (e.g., neurogenic claudication) caused by degenerative or isthmic spinal stenosis.

Buenaventura et al (2009) conducted a systematic review to evaluate the effectiveness of lumbar TFESIs in managing chronic radicular pain. Of the four randomized, controlled trials evaluating TFESIs, all showed positive results for short-term relief. Two studies were positive for long-term relief; the results for long-term relief were not available for the third study, and the fourth study had negative long-term relief results.

Abdi et al (2007) conducted a systematic review of published trials and abstracts of scientific meetings published between January 1966 and October 2006, to determine the efficacy and safety of ESIs. They identified 11 randomized trials of lumbar interlaminar ESI. Of these studies, eight had favorable results for short-term (less than six weeks) relief, and one was positive for long-term (six weeks) relief. The level of evidence for interlaminar ESIs was considered strong for short-term pain

relief and limited for long-term pain relief. There were seven randomized trials of lumbar TFESI, five of which had favorable results for both short- and long-term pain relief. The level of evidence for TFESI was considered strong for short-term pain relief and moderate for long-term pain relief. Of the eight randomized trials of caudal ESIs, five had favorable results for short-term pain relief, and four had favorable results for long-term pain relief. The level of evidence for caudal epidural injections was considered strong for short-term relief and moderate for long-term relief.

Novak et al (2008) conducted a systematic review to evaluate the evidence in support of guidelines on frequency and timing of epidural steroid injections, to help determine what sort of response should occur to repeat an injection. The review included 11 randomized, controlled trials, one prospective controlled trial, and two prospective cohort studies. The authors concluded that there is limited evidence to suggest guidelines for frequency and timing of epidural steroid injections or to help define an appropriate partial response that would trigger a repeat injection. Research suggests that repeat injections may improve outcomes, but conclusions cannot be made due to methodological limitations of the available evidence. The authors further concluded that there does not appear to be any evidence to support the common practice of a series of injections.

The results of a systematic review by Parr et al (2012), evaluating the effect of caudal epidural injections with or without steroids in managing various types of chronic low back and lower extremity pain, produced good evidence for short- and long-term relief of chronic pain secondary to disc herniation or radiculitis with local anesthetic and steroids, and fair relief with local anesthetic only. Further, this systematic review also provided only fair evidence for caudal epidural injections in managing chronic axial or discogenic pain, spinal stenosis, and post-surgery syndrome.

Lumbar Radiculopathy

Verheijen et al (2021) conducted a meta-analysis of 17 RCTs comparing ESI to epidural or nonepidural placebo in patients with sciatica. Studies were eligible for inclusion in the meta-analysis if they provided data on sciatica patients (any level of pain, any duration of symptoms, and any prior therapy). For back pain, ESI was not significantly more effective than epidural placebo at 6 weeks ($p=.14$), 3 months ($p=.95$), or 6 months ($p=.53$). GRADE quality of evidence was moderate at 6 weeks, very low at 3 months, and low at 6 months. When compared to nonepidural placebo, ESI resulted in greater relief of back pain at 3 months ($p=.02$) but not at 6 weeks or 6 months (quality of evidence: moderate). Based on low-quality evidence, leg pain was significantly improved with ESI compared to epidural placebo at 6 weeks ($p<.01$) and 3 months ($p=.04$), but not at 6 months ($p=.31$). In a sensitivity analysis adjusting for heterogeneity, leg pain was significantly improved with ESI compared to epidural placebo at all time points. Compared to nonepidural placebo, ESI did not significantly improve leg pain at any time point (quality of evidence: low to moderate). Functional status was significantly improved with ESI versus epidural placebo at 6 weeks ($p<.01$), but between-group differences were not significant at 3 months or 6 months (quality of evidence: moderate at 6 weeks, low at 3 months, and very low at 6 months). Compared to nonepidural placebo, ESI did not significantly improve functional status at any time point (quality of evidence: moderate). The patient population included in this review was not well-defined; therefore, it is unclear whether certain subpopulations may obtain greater benefit from ESI. Other limitations of the review include the relatively small number of studies available (particularly for the back pain outcome analyses and all

comparisons between ESI and nonepidural placebo), the unclear clinical importance of the outcomes, and the variation in treatment success definitions across studies.

Cervical Radiculopathy

Cohen et al (2014) reported the results of an RCT that compared ESI, conservative treatment, and a combination of both for patients with cervical radiculopathy. A total of 169 patients were randomized to conservative care (physical therapy plus medications), ESIs, or a combination of both treatments. The primary outcomes were neck and arm pain measured at 1- and 3- months posttreatment. There were no differences noted between ESI and conservative care on any of the outcome measures. The group receiving combination therapy had a greater reduction in arm pain at 1 month compared with the two individual treatments and had a greater success rate at 3 months (56.9% vs. 26.8%, p=.006).

Borton et al (2022) performed a systematic review of cervical transforaminal ESIs for cervical radiculopathy. The review included six studies (3 RCTs and 3 observational studies; n=443). None of the included studies directly compared cervical transforaminal ESIs with other treatment options or placebo. Short-term (4 to 8 weeks) decreases in pain scores following injection varied greatly both within and between the six studies, and mean reduction in pain scores ranged from 18% to 70%. Four studies reported on longer-term pain relief (> 8 weeks), and mean reduction in pain scores ranged from 33% to 73%; however, there was a significant number of patients lost to follow-up in these studies.

Spinal Stenosis

Schneider et al (2019) published the results of a 3-arm RCT comparing the clinical effectiveness of medical care (n=88), group exercise (n=84), and manual therapy/individualized exercise (n=87) in patients with lumbar spinal stenosis. Treatment in the medical care group consisted of medications and/or ESI provided by a physiatrist. Study limitations include failure to disclose the proportion of patients in the medical care group that received ESI during the course of the study, excluding patients <60 years of age, and no direct reporting of pain outcomes. The primary outcomes were symptoms and physical function as measured by the patient-reported Swiss Spinal Stenosis (SSS) score. The SSS score ranges from 12 to 55 points, with higher scores indicating higher levels of self-reported disability. Analyses at 2 months indicated that manual therapy/individualized exercise demonstrated greater reduction in SSS score compared to medical care or group exercise. The magnitude of the difference in the reduction of SSS score between groups did not reach the level of a minimal clinically important difference of 3.02 points.

Failed Back Surgery Syndrome

The evidence is insufficient to determine that ESI results in an improvement in the net health outcome for individuals with fail back surgery syndrome (FBSS), also known as persistent spinal pain syndrome (PSPS) or post-laminectomy syndrome. Celenlioglu et al (2022) investigated the efficacy of caudal epidural steroid injection (CESI) versus transforaminal epidural steroid injection (TFESI) in patients with post lumber surgery syndrome (PLSS). In a prospective, randomized, assessor-blind study, a total of 56 patients (n = 26 CESI group; n = 30 TFESI group) were randomized and assessed at baseline, 1-hour, 3-weeks, and 3-months after the procedure. Treatment success was

defined as a ≥ 50% decrease in the Numeric Rating Scale (NRS-11) scores compared to baseline. NRS-11 and modified Oswestry Disability Index (mODI) scores showed a significant decline in both groups at all follow-ups ($p < 0.001$). At 3 weeks, the improvement in the mODI scores was significantly higher in the TFESI group ($p = 0.020$). In all follow-ups, the NRS-11 scores were similar between the groups. At 3 weeks, the rates of patients with a ≥ 50% decrease in NRS-11 scores were 53.8% and 60% in the CESI group and TFESI group, respectively, while these rates were 30% and 26.7%, respectively, at 3 months. Although both CESI and TFESI were effective and safe methods in the treatment of PLSS caused by EF following lumbar discectomy, the study was limited by the lack of a placebo-controlled group and a short follow-up period.

Herpes Zoster Associated Pain (Active and Postherpetic Neuralgia)

The evidence is insufficient to determine that the ESI results in an improvement in the net health outcome.

One case study of a 64-year-old male with a history of herpes zoster and severe, constant, burning pain in the left T10 dermatome reported complete resolution of symptoms at short-term intervals of 2- and 12-week follow-up after a TESI (Mehta 2015).

Fujiwara et al (2018) addressed that there are no studies comparing the analgesic effects of epidural injection approaches for pain associated with acute-phase shingles. In a randomized prospective trial, patients (n=40) with acute-phase shingles were randomly assigned to receive epidural steroid injections by transforaminal (TF) or interlaminar (IL) approaches. Patients were evaluated at the baseline, 1 month and 3 months after the treatment using the VAS and SF-36 scores. Patients with VAS score of over 40 at the 3-month follow-up were considered as having PHN, and the number of patients with PHN was compared between the IL and TF groups. VAS scores at 1- and 3-month follow-up were significantly lower than those at the baseline, and there was no difference between the groups. All SF-36 scores were not significantly different between groups at 1- and 3-month. There was no significant difference in the occurrence of PHN between the groups. Along with a short follow-up period, the study had a small sample size that did not reach the number of patients needed by the power analysis in the study. The authors concluded that assessment scores improved in both groups, however, there was no difference in the analgesic effects of the IL and TF epidural steroid injections at 1 and 3 months for acute-phase shingles patients.

Ghanavatian et al (2019) indicated the role and effectiveness of ESI is controversial and conducted a retrospective study to seek other factors associated with the efficacy of ESI in a population with PHN. The records of 42 patients with PHN managed by ESI, who were seen at Mayo Clinic (Arizona, Florida, and Rochester campuses) from January 1, 1997 through April 1, 2018, were reviewed. A total of 97% of patients were treated with interlaminar ESI. Patients who reported poor ESI efficacy 2 weeks after the intervention had a 94% chance of still having pain at 12 weeks. Of the 24 patients who had a moderate-to-good pain relief 2 weeks after ESI, 19 (79%) had persistent relief after 12 weeks. PHN duration <11 months was predictive of moderate-to-good pain relief at 12 weeks' post-ESI, with a positive predictive value of 55.2%. The overall effectiveness of the intervention with ESI noted a sustained benefit when the therapy was given to patients with PHN duration <11 months. Additionally, 80% of patients who reported moderate-to-good treatment efficacy 2 weeks after ESI had continued efficacy at 12 weeks. However, none of the patient characteristics, concurrent

medications, or type of intervention administered were associated with efficacy of ESI in PHN. Future studies are warranted to verify this observation.

Choi et al (2020) find that the safety and therapeutic effects of different doses of epidural steroids in ZAP patients remain elusive; therefore, a prospective, double-blind, randomized controlled trial to compare the analgesic and therapeutic effects of one-time administration of 5 mg epidural dexamethasone with intermittent repeated total 15-mg epidural dexamethasone beyond the acute phase was conducted. Patients (n=44) were assigned at random in a 1:1 ratio to 1 of 2 groups, which differed according to whether a single dose (group A) or repeated doses of dexamethasone (group B) were administered. The primary outcome measure was change in numeric rating scale (NRS) pain score and the secondary outcome was complete remission of PHN. The percentage of patients with ≥ 50% reduction in pain severity was not significantly different between groups ($p = 0.110$). However, the percentage of complete remission of PHN was significantly higher in group B than in group A (28.57% in group A vs 80.95% in group B, $p = 0.001$). The study is limited by the lack of control group, small sample size, and enrolling patients who were only 30 to 180 days after onset of herpes zoster rash, which lacks the inclusion of patients with "well-established" PHN.

Chuang et al (2025) performed a systematic review and meta-analysis to evaluate the efficacy and safety of various nerve blocks for managing acute herpes zoster. A total of 13 studies (9 RCT [n=815] and 4 observations studies [n=253]) were included. Nerve blocks administered were paravertebral blocks (PVB), erector spinae plane (ESP) blocks, epidural blocks, and intercostal nerve blocks. The meta-analysis, which included 6 RCTs, indicated that at 4 weeks post-procedure, nerve blocks significantly reduced VAS pain scores. The blocks also reduced the need for acetaminophen and pregabalin compared with the control group. However, no differences in VAS pain scores were observed at 12 weeks. Both PVB and ESP blocks significantly decreased the PHN incidences at 3- and 6-months post-procedure. Five studies demonstrated that ultrasound-guided ESP blocks significantly reduced pain severity, duration, and the incidence of PHN without notable adverse events. Eight studies found PVBs to be effective in reducing pain scores and PHN incidences, though adverse events such as dizziness, drowsiness, and pain at the injection site were reported. Four observational studies comparing epidural or intercostal nerve blocks with other techniques provided weak evidence for their use. Limited evidence on intercostal and epidural blocks for acute herpes zoster highlights the need for more high-quality RCTs.

Ultrasound-Guided ESI

There is limited peer-reviewed literature regarding the overall health benefit of the use of ultrasonic guidance during spinal injections over the use of fluoroscopy or CT guidance.

Jang et al (2020) conducted a retrospective comparative review of chart data from 122 patients to compare the mid-term effects and advantages of the US-guided SNRB (n = 44), FL-guided IL-CESI (n = 41), and TF-CESI (n = 37) for radicular pain in the lower cervical spine. Despite the noted advantage of no radiation exposure and direct real-time visualization of vessels, nerves, and other soft tissue structure, the authors acknowledged several disadvantages (e.g., technique and the image are quite operator-dependent, and US alone cannot confirm the level that the injectate has reached (dorsal root ganglion or epidural space).

Ahmed et al (2023) performed a meta-analysis of randomized controlled trials (RCT) to compare ultrasonography (USG) guidance with conventional fluoroscopy (FL) guidance for ESIs to treat radiculopathy. A total of seven studies met inclusion criteria. There was no statistically significant difference in pain reduction between USG and FL groups especially in the case of lumbosacral spinal level at 1 month and at 3 months. Similarly, functional improvement after ESIs was comparable between the 2 groups. The Risk of inadvertent vascular puncture in USG-guided ESIs was lower as compared to conventional FL-guided ESIs. The procedure time in the USG group was also significantly lower as compared to FL group. Study limitations include potential biases due to broad inclusion of both cervical and lumbosacral spinal levels, different epidural approaches (e.g., transforaminal and interlaminar), and different steroids were used. The authors concluded that USG-guided ESIs are noninferior to conventional FL-guided ESI in terms of pain reduction and functional improvement. There was no statistically significant difference in the need for multiple ESIs between the two groups. Procedure time was significantly reduced by using USG as guidance and the Risk of inadvertent vascular puncture was low in the case of USG guidance as compared to FL-guided needle placement.

Injectates – Biologics (e.g., Platelet Rich Plasma, Stem Cells, Amniotic Fluid)

Sanapati et al (2018) report that although several cell-based therapies have been proposed in recent years for the management of low back pain, including the injection of medicinal signaling cells or mesenchymal stem cells (MSCs) and platelet-rich plasma (PRP), there is only emerging clinical evidence to support their use at this time. The authors conducted a systematic review and meta-analysis of the effectiveness of PRP and MSCs injections in managing low back and lower extremity pain. Twenty-one injection studies met inclusion criteria (12 lumbar disc injections, 5 epidural, 3 lumbar facet joint, and 3 sacroiliac joint studies). The authors concluded that the findings of this systematic review and single-arm meta-analysis showed that MSCs and PRP may be effective in managing discogenic low back pain, radicular pain, facet joint pain, and sacroiliac joint pain, with variable levels of evidence in favor of these techniques. However, the evidence lacked high quality randomized controlled trials.

Wang and Zhang (2025) noted that platelet-rich plasma (PRP), with its dual anti-inflammatory and regenerative properties, is a promising alternative to epidural corticosteroid injection, but the comparative evidence between the two treatments remains inconclusive. A systematic review and meta-analysis of the published literature (4 randomized controlled trials and 3 prospective studies), comprising 416 patients, indicated that corticosteroids significantly reduced Oswestry Disability Index (ODI) scores at the initial follow-up (4 weeks) ($p = 0.0008$), with no significant differences observed in VAS and ODI scores between the two groups at other time points. The complication rates for the PRP and corticosteroid groups were similar; however, incomplete reporting of complications in some studies may result in an underestimation of risks. The authors concluded that compared to corticosteroid injections, PRP did not show superior improvements in VAS and ODI scores for lumbar radicular pain. In contrast, corticosteroids demonstrated significant improvement in patient ODI scores in the short term (4 weeks). However, due to the low quality of the included studies and the heterogeneity in PRP preparation methods, there is a need for higher-quality RCTs with standardized PRP preparation protocols and longer follow-up periods to investigate the efficacy and safety of PRP versus corticosteroid injections in the treatment of lumbar radicular pain.

PROFESSIONAL GUIDELINE(S)

For radicular pain, the North American Spine Society (NASS) (2020) finds that there is sufficient literature to suggest that a trial of ESIs for radicular pain caused by conditions other than disc herniation is appropriate prior to considering surgical intervention. NASS cites multiple randomized-controlled trials (RCTs) that demonstrate lumbar epidural steroid injections (LESIs) are effective in the treatment of lumbar radiculitis caused by disc herniation. Similarly, citing that several conditions may cause cervical radicular pain, with literature regarding interlaminar (IL) ESIs demonstrating durable improvements in pain and disability for 12 and 24 months for a variety of cervical pathologic conditions. The literature on cervical transforaminal (TF) ESIs is limited to observational studies including reduction in surgical intervention has been demonstrated, and the biochemical pathology involved is likely similar to lumbar radicular etiologies.

For lumbar referred pain, NASS (2020) finds that the literature suggests LESIs are effective in reducing pain in this patient population. It is noted that this treatment seems to be less effective in this group than in patients with herniated discs. In addition, data show that LESI is equivalent to epidural local anesthetic likely due to the suppression of neurogenic inflammation by the local anesthetic. Based on these data, it is felt that a trial of LESIs is reasonable prior to the consideration of surgical intervention.

NASS's (2020) evidence-based clinical guidelines for diagnosis and treatment of low back pain reported that there is insufficient evidence to make a recommendation for or against the use of caudal or interlaminar epidural steroid injections in patient with low back pain (Grade I).

The International Pain & Spine Intervention Society (IPSIS) explores and debunks the myths that surround patient safety issues through the FactFinders website, developed by the IPSIS Patient Safety Committed as a free public service. Mattie et al (2020) report that, after an ESI, a period of up to 14 days may be needed to assess the clinical response. Systemic effects on the hypothalamic-pituitary-adrenal (HPA) axis may last three weeks or longer. These factors must be considered when determining if or when another ESI is indicated. There is no evidence to support routine performance of a "series" of repeat injections without regard to the clinical response to an initial injection.

The American Society of Interventional Pain Physicians (ASIPP) published comprehensive evidenced-based guidelines for facet joint interventions in the management of chronic spinal pain (Manchikanti 2020). Patients testing positive for facet joint pain may undergo either therapeutic facet joint nerve blocks or radiofrequency neurotomy based on patients' preferences, values, and physician expertise. Once facet joint pain is excluded, the patient may be treated with epidural injections.

The American Society of Interventional Pain Physicians (ASIPP) published an updated guideline on the use of epidural injections in the management of chronic spinal pain (Manchikanti 2021). The following recommendations were made

- For patients with disc herniation:
    - The evidence is Level I for caudal epidural injections, lumbar interlaminar epidural injections, lumbar transforaminal epidural injections, and cervical interlaminar epidural injections with strong recommendation for long-term effectiveness."

  - For thoracic disc herniation, based on one relevant, high-quality RCT of thoracic epidural with fluoroscopic guidance, with or without steroids, the evidence is Level II with moderate to strong recommendation for long-term effectiveness.

- For patients with spinal stenosis,
  - Based on one high-quality RCT in each category the evidence is Level III to II for fluoroscopically guided caudal epidural injections with moderate to strong recommendation and Level II for fluoroscopically guided lumbar and cervical interlaminar epidural injections with moderate to strong recommendation for long-term effectiveness.
  - The evidence for lumbar transforaminal epidural injections is Level IV to III with moderate recommendation with fluoroscopically guided lumbar transforaminal epidural injections for long-term improvement."
- For patients with axial discogenic pain, the evidence for axial discogenic pain without facet joint pain or sacroiliac joint pain in the lumbar and cervical spine with fluoroscopically guided caudal, lumbar and cervical interlaminar epidural injections, based on one relevant high quality RCT in each category is Level II with moderate to strong recommendation for long-term improvement, with or without steroids.

A 2022 American Society of Pain and Neuroscience (ASPN) guideline provides recommendations for the use of epidural steroid injections in the treatment of low back pain (Sayed 2022). Grade A consensus recommendations include:

- Interlaminar epidural injections for treatment of low back and radicular pain originating from disc disease, spinal stenosis and for chronic back/leg pain after surgical intervention.
- Transforaminal epidural injections for treatment of low back and radicular pain originating from disc disease, spinal stenosis and for chronic back/leg pain after surgical intervention.
- Caudal epidural injections for treatment of low back and radicular pain originating from disc disease, spinal stenosis and for chronic back/leg pain after surgical intervention when interlaminar or transforaminal approaches are not feasible
- Use of either steroid or local anesthetic or the two classes of medication in combination for use in epidural injections for treatment of low back and radicular pain originating from disc disease, spinal stenosis and for chronic back/leg pain after surgical intervention.

In 2022, ASPN provided updated consensus guidance regarding best practices for minimally invasive lumbar spinal stenosis treatment (MIST) (Deer 2022). The guidelines note that most trials, on lumbar ESI, have demonstrated efficacy but there is considerable variability regarding epidural technique, medication, dosage, and duration of improvement. As a result, treatment efficacy for the modality has been difficult to determine, as foundational studies in support of the procedure come from different eras representing the evolution of evidence-based medicine and evidence-based study standards.

- Epidural steroid injections are recommended in the algorithm for the treatment of symptomatic lumbar spinal stenosis. Grade B; Level of certainty high; Level of evidence I-A)

- Epidural steroid injection may be repeated when a patient has significant temporary improvement in symptoms. Be aware that the number and frequency of injections may be limited by insurance and payer rules and regulations. Grade B; Level of certainty moderate; Level of evidence I-B).

In 2025, the American Academy of Neurology (AAN) Guidelines Subcommittee conducted a systematic review of 90 RCTs on the efficacy of epidural steroids for cervical and lumbar radicular pain and spinal stenosis published between January 2005 and January 2021 (Armon 2025). The review affirms limited efficacy of ESIs in reducing pain and disability in cervical and lumbar radiculopathies and possibly in lumbar spinal stenosis, largely in the short term. The panel made the following conclusions:

- For patients with cervical or lumbar radiculopathy, ESIs probably reduce short-term disability (moderate confidence).
- For patients with lumbar spinal stenosis, ESIs possibly reduce short-term disability (low confidence, confidence downgraded for heterogeneity). There were no studies evaluating ESIs in cervical spinal stenosis.
- For patients with cervical or lumbar radiculopathy, ESIs possibly decrease long-term disability (low confidence).
- For patients with lumbar spinal stenosis, ESIs possibly reduce long-term disability (low confidence). There were no studies evaluating cervical stenosis.
- For patients with cervical or lumbar radiculopathy, ESIs probably provide short-term pain reduction (moderate confidence).
- For patients with lumbar spinal stenosis, ESIs probably do not provide short-term pain reduction (moderate confidence). No studies were available for cervical stenosis.
- For patients with cervical or lumbar spinal radiculopathy, there is insufficient evidence to determine whether ESIs provide long-term pain reduction (very low confidence).
- For patients with lumbar spinal stenosis, there is insufficient evidence to determine whether ESIs reduce long-term pain (very low confidence). There were no studies evaluating cervical stenosis.
- Epidural steroid injections are possibly equally effective in patients with lumbar and cervical disease (low confidence, anchored by imprecision), considering that there is only 1 RCT meeting inclusion criteria for cervical radiculopathy.
- There is no significant difference between interlaminar, transforaminal, and caudal ESIs in the outcomes of short-term disability or pain or long-term disability or pain.

<u>Ultrasound Guidance</u>

In 2020, the North American Spine Society (NASS) published coverage policy recommendations for epidural steroid injections & selective spinal nerve blocks which indicates there is insufficient safety and efficacy data to support ultrasound guidance for any approach delivering ESI.

Injectates – Biologics (e.g., Platelet Rich Plasma, Stem Cells, Amniotic Fluid)

The American Society of Pain and Neuroscience (ASPN) identified the educational need for an evidence-based guideline on regenerative medicine therapy for chronic pain and convened a multispecialty working group to evaluate the evidence (D'Souza 2024). The expert panel made the following relevant statements:

- Consensus Point 29. While epidural injection with autologous-conditioned serum (ACS) may improve radicular pain symptoms, some evidence suggests that it is not superior to corticosteroid injection (Level I, Grade C).
- Consensus Point 30. Epidural injection with PRP or other PRP-related products may alleviate radicular pain symptoms in radiculopathy, although studies had a high risk for bias (Level I, Grade C).
- Consensus Point 34. PRP injection at the site of pain for post-herpetic neuralgia as an adjunct to oral neuropathic analgesics may be associated with improved pain intensity compared to medications alone (Level II-2, Grade C).

REGULATORY STATUS

Not Applicable

CODE(S)

- Codes may not be covered under all circumstances.
- Code list may not be all inclusive (AMA and CMS code updates may occur more frequently than policy updates).
- (E/I)=Experimental/Investigational
- (NMN)=Not medically necessary/appropriate

CPT Codes

Code	Description
62320	Injection(s), of diagnostic or therapeutic substance(s) (e.g., anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, including needle or catheter placement, interlaminar epidural or subarachnoid, cervical, or thoracic; without imaging guidance
62321	with imaging guidance (e.g., CT or fluoroscopy)
62322	Injection(s), of diagnostic or therapeutic substance(s) (e.g., anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, including needle or catheter placement, interlaminar epidural or subarachnoid, lumbar, or sacral (caudal); without imaging guidance
62323	with imaging guidance (e.g., CT or fluoroscopy)
62324	Injection(s), including indwelling catheter placement, continuous infusion, or intermittent bolus, of diagnostic or therapeutic substance(s) (e.g., anesthetic,

Code	Description
	antispasmodic, opioid, steroid, other solution), not including neurolytic substances, interlaminar epidural or subarachnoid, cervical, or thoracic; without imaging guidance
62325	with imaging guidance (i.e., fluoroscopy or CT)
62326	Injection(s), including indwelling catheter placement, continuous infusion, or intermittent bolus, of diagnostic or therapeutic substance(s) (e.g., anesthetic, antispasmodic, opioid, steroid, other solution), not including neurolytic substances, interlaminar epidural or subarachnoid, lumbar, or sacral (caudal); without imaging guidance
62327	with imaging guidance (i.e., fluoroscopy or CT)
64479	Injection(s), anesthetic agent, and/or steroid, transforaminal epidural, with imaging guidance (fluoroscopy or CT); cervical or thoracic, single level
64480	each additional level (list separately in addition to code for primary procedure)
64483	Injection(s), anesthetic agent, and/or steroid, transforaminal epidural, with imaging guidance (fluoroscopy or CT); lumbar or sacral, single level
64484	each additional level (list separately in addition to code for primary procedure)

HCPCS Codes

Code	Description
Not Applicable	

ICD10 Codes

Code	Description
Multiple Codes	

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SEARCH TERMS

Not Applicable

CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS)

Epidural Steroid Injections for Pain Management (LCD L39036) [accessed 2025 May 29]

PRODUCT DISCLAIMER

- Services are contract dependent; if a product does not cover a service, medical policy criteria do not apply.
- If a commercial product (including an Essential Plan or Child Health Plus product) covers a specific service, medical policy criteria apply to the benefit.
- If a Medicaid product covers a specific service, and there are no New York State Medicaid guidelines (eMedNY) criteria, medical policy criteria apply to the benefit.
- If a Medicare product (including Medicare HMO-Dual Special Needs Program (DSNP) product) covers a specific service, and there is no national or local Medicare coverage decision for the service, medical policy criteria apply to the benefit.
- If a Medicare HMO-Dual Special Needs Program (DSNP) product DOES NOT cover a specific service, please refer to the Medicaid Product coverage line.

POLICY HISTORY/REVISION

Committee Approval Dates	
03/20/25, 06/26/25	
Date	**Summary of Changes**
06/26/25	• Annual review, policy intent unchanged. Revised conservative treatment criteria.
03/20/25	• New Policy created due to the splitting of policy content of CMP#7.01.87 into

	CMP#7.01.115 & CMP#7.01.116. No change to original policy criteria.
01/01/25	• Summary of changes tracking implemented.
03/20/25	• Original effective date