Epidural Steroid Injections for Spinal Pain

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➲ Instructions for Use

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Coverage Rationale

Epidural Steroid Injections (ESIs) are proven and medically necessary when all the following criteria are met:

- The injection is intended for the management of Radicular Back Pain, as evidenced by history and physical examination; and
- The Radicular Back Pain is unresponsive to the following conservative treatment for ≥ 4 weeks:
  - Pharmacotherapy such as nonsteroidal anti-inflammatory drugs or acetaminophen; or
  - Activity modification (including but not limited to heavy lifting, bending, and spinal torsion activities); or
  - Physical therapy or home exercise; and
- There is evidence of structural and/or functional nerve root involvement by imaging or electrodiagnostic studies; and
- The injection is performed under fluoroscopic or computed tomography guidance

Conditions that would contraindicate ESIs include but are not limited to:

- Spinal neoplasm
- Rapidly progressing neurological deficit
- Epidural abscess

The following are unproven and not medically necessary due to insufficient evidence of efficacy:

- The use of ultrasound guidance for ESIs
- ESIs for all other indications of the spine not included above

ESI limitations:

- A maximum of four ESI sessions (per region, regardless of level, location, or side) per year
  - A session is defined as one date of service in which ESIs are performed
  - A region is defined by either the region of the cervical, thoracic, or lumbosacral
  - A year is defined as the 12-month period starting from the date of service of the first approved injection
- Subsequent ESIs may be provided only if:
  - Radicular Back Pain has returned and/or deterioration in function has occurred; and
  - One of the following:
    - The previous injection resulted in ≤ 50% pain relief or functional improvement for less than 3 months, as measured by validated measurement tools, and there has been a reassessment of the individual and the injection site and technique; or
    - The previous injection resulted in ≥ 50% pain relief or functional improvement for 3 or more months, as measured by validated measurement tools

Definitions

Conservative Therapy: Consists of an appropriate combination of medication (for example, nonsteroidal anti-inflammatory drugs, analgesics, etc.) in addition to physical therapy, spinal manipulation therapy, cognitive behavior therapy, or other interventions, based on the individual's specific presentation, physical findings, and imaging results. (Agency for Healthcare Research and Quality, 2013; Qassem et al., 2017; Summers, 2013)

Epidural Steroid Injections: Are a nonsurgical treatment for managing radiculopathy caused by disc herniation or degenerative changes in the vertebrae. Steroids are injected directly into the epidural space of the spine. The goal of Epidural Steroid Injections is to relieve pain, improve function, and improve quality of life. (Patel et al., 2021)

Functional Impairments: Limitations due to illness and dysfunction in social and occupational spheres of life. (Ustün and Kennedy, 2009)

Nonradicular Back Pain: Pain that does not radiate along a dermatome (sensory distribution of a single root). Appropriate imaging does not reveal signs of spinal nerve root compression, and there is no evidence of spinal nerve root compression seen on clinical examination. (Lenahan et al., 2018)

Radicular Back Pain: Pain that radiates from the spine into the extremity along the course of the spinal nerve root. The pain should follow the pattern of a dermatome associated with the irritated nerve root identified. (Lenahan et al., 2018)

Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this policy does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

CPT 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	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; with imaging guidance (i.e., fluoroscopy or CT)
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
64479	Injection(s), anesthetic agent(s) and/or steroid, transforaminal epidural, with imaging guidance (fluoroscopy or CT); cervical or thoracic, single level
64484	Injection(s), anesthetic agent(s) and/or steroid, transforaminal epidural, with imaging guidance (fluoroscopy or CT); lumbar or sacral, each additional level (List separately in addition to code for primary procedure)

Diagnosis Code	Description
All Regions	
M47.20	Other spondylosis with radiculopathy, site unspecified
M47.21	Other spondylosis with radiculopathy, occipito-atlanto-axial region
M47.22	Other spondylosis with radiculopathy, cervical region
M47.25	Other spondylosis with radiculopathy, thoracolumbar region
M51.15	Intervertebral disc disorders with radiculopathy, thoracolumbar region
M54.10	Radiculopathy, site unspecified

Diagnosis Code	Description
All Regions	
M96.1	Postlaminectomy syndrome, not elsewhere classified
G54.2	Cervical root disorders, not elsewhere classified
G54.3	Thoracic root disorders, not elsewhere classified
Cervical/Thoracic	
M47.23	Other spondylosis with radiculopathy, cervicothoracic region
M47.24	Other spondylosis with radiculopathy, thoracic region
M50.10	Cervical disc disorder with radiculopathy, unspecified cervical region
M50.11	Cervical disc disorder with radiculopathy, high cervical region
M50.121	Cervical disc disorder at C4-C5 level with radiculopathy
M50.122	Cervical disc disorder at C5-C6 level with radiculopathy
M50.123	Cervical disc disorder at C6-C7 level with radiculopathy
M50.13	Cervical disc disorder with radiculopathy, cervicothoracic region
M51.14	Intervertebral disc disorders with radiculopathy, thoracic region
M54.11	Radiculopathy, occipito-atlanto-axial region
M54.12	Radiculopathy, cervical region
M54.13	Radiculopathy, cervicothoracic region
M54.14	Radiculopathy, thoracic region
M54.15	Radiculopathy, thoracolumbar region
S14.2XXA	Injury of nerve root of cervical spine, initial encounter
S24.2XXA	Injury of nerve root of thoracic spine, initial encounter
Lumbar/Sacral	
G54.4	Lumbosacral root disorders, not elsewhere classified
M47.26	Other spondylosis with radiculopathy, lumbar region
M47.27	Other spondylosis with radiculopathy, lumbosacral region
M47.28	Other spondylosis with radiculopathy, sacral and sacrococcygeal region
M48.062	Spinal stenosis, lumbar region with neurogenic claudication
M51.A0	Intervertebral annulus fibrosus defect, lumbar region, unspecified size
M51.A1	Intervertebral annulus fibrosus defect, small, lumbar region
M51.A2	Intervertebral annulus fibrosus defect, large, lumbar region
M51.A3	Intervertebral annulus fibrosus defect, lumbosacral region, unspecified size
M51.A4	Intervertebral annulus fibrosus defect, small, lumbosacral region
M51.A5	Intervertebral annulus fibrosus defect, large, lumbosacral region
M51.16	Intervertebral disc disorders with radiculopathy, lumbar region
M51.17	Intervertebral disc disorders with radiculopathy, lumbosacral region
M54.16	Radiculopathy, lumbar region
M54.17	Radiculopathy, lumbosacral region
M54.18	Radiculopathy, sacral and sacrococcygeal region
M54.30	Sciatica, unspecified side
M54.31	Sciatica, right side
M54.32	Sciatica, left side
M54.40	Lumbago with sciatica, unspecified side
M54.41	Lumbago with sciatica, right side
M54.42	Lumbago with sciatica, left side
S34.21XA	Injury of nerve root of lumbar spine, initial encounter

Diagnosis Code	Description
Lumbar/Sacral	
S34.22XA	Injury of nerve root of sacral spine, initial encounter

Description of Services

Spine pain, in particular pain in the lower back, is a common concern, affecting up to 90% of Americans at some point in their lifetime. The majority of episodes are mild and self-limiting, and up to 50% of affected persons will have more than one episode. It is a symptom of a variety of different conditions, including injury, spinal stenosis, disc herniation, and degenerative changes in the vertebrae. Epidural Steroid Injections (ESIs) may be used as a nonsurgical modality to treat low back or neck pain and involve the injection of a solution containing corticosteroids and/or anesthetic into the epidural space. The ESI can be performed via interlaminar, transforaminal, or caudal approaches.

ESIs generally require local anesthetic only. However, for some individuals, moderate/conscious sedation, nonintravenous sedation, and monitored anesthesia care may be necessary. These sedation procedures are generally safe when administered by trained, certified providers, with appropriate monitoring, but are not without risk. Examples of procedures that typically do not require moderate sedation or an anesthesia care team include but are not limited to ESIs; epidural blood patch; trigger point injections; shoulder, hip, sacroiliac, facet, and knee joint injections; medial branch nerve blocks; and peripheral nerve blocks. (American Society of Anesthesiologists, 2021)

Clinical Evidence

Ultrasound Guidance

There is limited evidence in the peer-reviewed literature demonstrating the overall health benefit of the use of ultrasonic guidance during spinal injections over the use of fluoroscopy (FL) or computed tomography guidance.

Mao et al. (2025) conducted a single-center randomized controlled trial (RCT) to compare biplane ultrasound with FL for guidance of percutaneous lumbar intervertebral foramen insertion. Inclusion criteria were participants aged 16 to 80 years, symptoms and confirmatory signs of lumbar radiculopathy that persisted for at least 6 weeks, lumbar disc herniation at the corresponding level and side on imaging, and surgical candidates for transforaminal epidural steroid injection (ESI) or percutaneous endoscopic lumbar discectomy (PELD). Exclusion criteria were other diseases affecting the spine, body mass index of > 32 kg/m^2, pregnancy, refusal to participate, and severe mental illness. There were 68 participants divided into two groups. In the FL group, participants underwent conventional puncture procedures performed by junior spine surgeons with at least 3 years of experience with ESI and PELD. In the biplane group, a junior sonographer with 1 year of musculoskeletal ultrasound experience underwent 2 weeks of training to master the technique and then performed the procedure, which was supervised by a senior sonographer and a senior spine surgeon, in the participants. The primary outcomes were the first success rate, number of puncture adjustments, number of FLs, puncture time, and operator confidence score. The secondary outcomes were operative time and incidence of puncture-relevant complications. Clinical efficacy was evaluated based on participant satisfaction and the preoperative and postoperative 1-day, 1-month, 3-month, and 6-month pain scores on the visual analog scale and Oswestry Disability Index (ODI). The first success rate in the biplane ultrasound group at the proficiency stage was higher than that in the FL group (61% vs 32%; p = 0.033; relative risk, 1.634). The number of puncture adjustments [0 (IQR, 0-1) vs 1 (IQR, 0-2); p = 0.025], number of FLs [1 (IQR, 1-2) vs 2 (IQR, 2-3); p = 0.001], and puncture time [120 s (IQR, 57-210 s) vs 197 s (IQR, 159-341 s); p = 0.001] in the biplane ultrasound group at the proficiency stage were lower than those in the FL group. Additionally, a significantly higher confidence score of the operator was noted during biplane ultrasound [3 (IQR, 3-3) vs 3 (IQR, 2-3); p = 0.02]. There were no statistically significant differences between the two groups in terms of participant satisfaction, Macnab satisfaction, and preoperative and postoperative visual analog scale or ODI scores. There were no postoperative puncture-related complications. There was one participant who developed symptoms of nerve injury with weakness to the affected limb after PELD, but the symptoms were unrelated to the puncture. According to the authors, the results of this study reveal that compared with traditional FL navigation, the biplane ultrasound improved the first success rate and reduced the intraoperative frequency of FLs and puncture time. Limitations of the study include a small sample size; single-center design; lack of evaluation in populations with obesity and complex anatomy because biplane ultrasound is not suitable due to unclear ultrasound displays, which limits generalizability; and lack of comparison to two-dimensional ultrasound.

Miranda et al. (2025) conducted a systematic review and meta-analysis of ultrasound-guided (USG) vs conventional radioscopic-guided transforaminal ESIs for cervical radicular pain. The primary outcomes included pain assessment, functional improvement, intravascular injection rate, and procedure time. The review included four RCTs, comprising 756 individuals (68%), and three retrospective observational studies, comprising 348 individuals (31.5%). A total of 537

individuals (48.6%) received USG transforaminal injections, 215 individuals (19.5%) received a computed tomography–guided transforaminal approach, 220 individuals (19.9%) received an FL–guided interlaminar approach, and 132 individuals (11.9%) received FL–guided interlaminar approaches. The procedures were performed at the C5, C6, and C7 vertebral levels. Postprocedure pain reduction showed no statistically significant difference between the USG foraminal (USF) and radioscopic groups at 1 month [standardized mean difference (MD), 0.04; 95% CI, -0.26 to 0.33; p = 0.73; I^2 = 55%] and 3 months (standardized MD, 0.15; 95% CI, -0.01 to 0.31; p = 0.04; I^2 = 21%). The Neck Disability Index was comparable between the USF and radioscopic groups in the RCT–only analysis at 3 months (MD, 0.56; 95% CI, -0.28 to 1.39; p = 0.03; I^2 = 0%). Inadvertent intravascular injection risk was significantly lower in the USF group than the conventional radioscopic approach (odds ratio, 0.13; 95% CI, 0.07-0.25; p < 0.00001; I^2 = 0%). Procedure time in the USF group was significantly lower than that in the radioscopic group (MD, -158; 95% CI, -227 to -90; p < 0.00001; I^2 = 70%). The authors concluded that the findings indicate that USF is associated with a significantly lower incidence of intravascular injection and lower procedure time than radioscopic-guided techniques for the treatment of cervical pain; however, there was no significant difference in pain improvement and Neck Disability Index between the techniques. Limitations of the study include potential bias, as three of the seven studies were observational; high heterogeneity due to differences in the injection techniques used and the assessment intervals and follow-up periods; and potential operator-dependency of ultrasound, as this is a highly operator-dependent technique.

In a 2023 meta-analysis of RCTs, Ahmed et al. compared USG ESIs with conventional FL–guided ESIs. The primary outcomes were pain reduction at 1 month and 3 months. The secondary outcomes included reduction in Disability Index at 1 and 3 months, multiple injections, contrast distribution, vascular puncture, and procedure time. There were seven studies that were included in the meta-analysis. For the primary outcome of pain reduction at 1 month, there were only four RCTs that reported findings, and all of them studied the lumbosacral spinal level. The MD in pain score reduction between the groups was clinically nonsignificant and ranged from 0 to 0.16. Only three studies reported pain scores at 3 months, and the overall summary MD in pain score reduction between the two groups was not statistically significant and ranged from 0.23 to 2.64. The authors found no statistically significant MD between the USG and FL groups when measuring functional disability indices and multiple injections. For inadvertent vascular puncture, three studies reported the incidence, which included 371 individuals; among them, there were 20 incidences of vascular puncture confirmed by FL. The authors noted a decreased risk of vascular puncture under USG guidance, with an odds ratio of 0.21 (0.07, 0.64) and I^2 of 0%. There were four studies comparing ESI under USG and FL for procedure time, but the definition of procedure time was different between the studies. In the lumbosacral subgroup, the procedure time was lower with USG guidance than FL. The cervical subgroup procedure time was higher with USG than FL. Limitations include a risk of bias for all included studies and use of different approaches, including transforaminal and interlaminar, which may have introduced a potential bias in the results. Additionally, the authors noted that epidural injections are heavily influenced by the physician's experience, and the extent of its effect on the overall outcomes studied in this meta-analysis remains uncertain.

USG spine injection therapy is a comparatively new technique in the management of axial and radicular pain from degenerative lumbar spinal conditions and may be a reasonable alternative to conventional methods of injection guidance. In 2020, Tay et al. completed a retrospective clinical audit in 42 patients who underwent USG lumbar spinal injection at a single institution for chronic axial and radicular pain in an acute public hospital sports medicine center between June 1, 2018, and June 1, 2019. Overall, there were 27 patients (64.3%) receiving facet joint injections and 18 patients (42.9%) receiving nerve root injections. The majority (90.5%) of patients experienced an improvement of > 30% in pain intensity at 3 months post injection, determined by Numeric Rating Scale (NRS) pain score (p < 0.001); 40 patients (95.2%) had a reduction in ODI score (p < 0.001). No complications were reported. It was concluded that the experience of this institution confirms the safety, feasibility, and effectiveness of USG lumbar spinal injection for the treatment of axial and radicular pain. The authors also noted that (1) USG spinal injection remains technically challenging and requires a steep learning phase as well as careful selection of individuals and that (2) the study was not designed to directly compare outcomes of USG injection against those of the conventional standard of care. A larger dataset is required to confirm the efficacy of USG spine injection and the rate of adverse events, and a prospective study would be useful to determine clinical factors predicting success. This study is also limited by the lack of a comparison group and small number of patients.

Epidural Steroid Injections

Overall, the volume of evidence for the use of therapeutic epidural injections in the treatment of acute and chronic back pain is large. Clinical studies have shown that ESIs have provided short-term improvement and may be considered in the treatment of selected individuals with radicular pain as part of an active therapy program. However, there is insufficient evidence to demonstrate that ESIs are effective in the treatment of back pain in the absence of radicular symptoms.

Aliyev et al. (2025) conducted a single-center RCT to evaluate the effectiveness of thoracic interlaminar epidural injections for chronic mid- and/or upper back pain. The inclusion criteria included participants who were older than 18 years with

chronic mid- and upper back pain for more than 6 months that did not respond to conservative management, including medication, physical therapy, and exercise programs, and had no facet joint pain confirmed through diagnostic blocks. There were 100 participants who were evenly divided into two groups. Group 1 received thoracic interlaminar epidural injections of 6 mL of 2% preservative-free prilocaine. Group 2 received injections of 4 mL of 2% preservative-free prilocaine combined with 2 mL or 8 mg of dexamethasone, totaling 6 mL. Follow-up injections were considered based on initial response, and additional interventions were provided for participants reporting < 50% pain relief and functional decline. Results were measured using pain sores and functional status via the NRS and revised ODI (rODI) scales at 3, 6, and 12 months. Both the participant and administering physician were blinded to the group assignment and drug. Participants who had significant improvement for > 4 weeks after the first two procedures and those who did not were classified as participants who had failed. Significant improvement was defined as a reduction by > 0% in both the NRS and rODI. The results showed that there were statistically significant reductions from baseline for both the NRS and rODI in both groups, with p values of 0.000 for both scales. When comparing the groups, the results indicate that pain decreased significantly in both group 1 and group 2, but the results were in favor of participants who received combination therapy (p = 0.000). However, there was no significant difference between the rODI scores of groups (p = 0.790). Of the 361 thoracic interlaminar epidural procedures performed, there was one subarachnoid puncture, with no postoperative headache reported, and three participants developed immediate postoperative pain and spasm, which lasted for 3 hours. At 12 months, significant pain relief and a reduction in rODI scores from baseline were observed in 86% of participants in group 1 and 90% of participants in group 2. The authors concluded that the results of this study suggest that chronic thoracic pain of non–facet joint origin can be managed conservatively using thoracic interlaminar epidural injections, either with or without steroids. Limitations of the study include a small sample size and single-center population that could affect the generalizability; vague and undefined nature of the symptoms of thoracic pain; potential variability in procedural technique; and no sham-treated control group.

Wang et al. (2025) conducted a systematic review and network meta-analysis of RCTs evaluating the effectiveness of common interventional procedures for chronic noncancer spine pain, either axial or radicular. The interventional procedures included epidural injections of local anesthetic, steroids, or their combination; joint-targeted injections; or radiofrequency procedures. There were 81 studies, with 7,977 individuals included in the analysis. Among the studies included, 43 (53%) included individuals with axial spine pain, 36 (44%) included individuals with radicular spine pain, and two (2%) did not report details on clinical condition. Most trials (62%) explored the effectiveness of a single interventional procedure, but 31 (38%) explored longer follow-up and allowed for repeated administration. For chronic axial spine pain, compared with sham procedures, the authors found that the following probably result in little to no difference in pain relief (moderate-certainty evidence): epidural injection of local anesthetic, epidural injection of local anesthetic and steroids, and joint-targeted steroid injection. Additionally, the following may provide little to no difference in pain relief (low-certainty evidence): intramuscular injection of local anesthetic, joint-targeted injection of local anesthetic, joint-targeted injection of local anesthetic and steroids, and ESI. Intramuscular injections of local anesthetic and steroids vs a sham procedure may increase pain severity (low-certainty evidence) and the effects of joint radiofrequency nerve ablation, which is supported by very low-certainty evidence. It was also found that moderate-certainty evidence shows that the following probably result in little to no difference in physical functioning: joint-targeted injection of local anesthetic and steroids, joint-targeted injection of steroids, and intramuscular injection of local anesthetic with steroids. Low-certainty evidence suggests that the following may result in little to no difference in physical functioning: joint radiofrequency nerve ablation, joint radiofrequency with joint-targeted injection of local anesthetic plus steroids, and joint-targeted injection of local anesthetic. Low-certainty evidence suggests that intramuscular injection of local anesthetic may improve physical functioning slightly, and the effects of epidural injection of local anesthetic, with or without steroids, were only supported by very low-certainty evidence. For chronic radicular spine pain, compared with sham procedures, the following probably results in little to no difference in pain relief (moderate certainty): epidural injection of local anesthetic and steroids and radiofrequency of the dorsal root ganglion. The following may result in little to no difference in pain relief (low certainty): epidural injection of local anesthetic or epidural injection of steroids. Additionally, effects for dorsal root ganglion radiofrequency with an epidural of local anesthetic, with or without steroids, were supported by only very low-certainty evidence. Moderate-certainty evidence shows that the following probably results in little to no difference in physical functioning: dorsal root ganglion radiofrequency, epidural injection of local anesthetic, and epidural injection of local anesthetic with steroids. Low-certainty evidence suggests that ESIs may make little to no difference in physical functioning and that dorsal root ganglion radiofrequency with epidural injection of local anesthetic with steroids may provide a small improvement in physical functioning. Effects of dorsal root ganglion radiofrequency with epidural injection of local anesthetic were supported by only very low-certainty evidence. For adverse events, there is low-certainty evidence that compared with sham procedures, the following may increase the risk of nonserious adverse events: joint radiofrequency nerve ablation, joint-targeted injection of local anesthetics and steroids, and intramuscular injection of local anesthetic and steroids. The effects of other interventional procedures on nonserious adverse events were supported only by very low-certainty evidence. The authors concluded that the network meta-analysis of RCTs found that no commonly performed interventional procedure provided convincing evidence of important pain relief or improvement in physical functioning for axial or radicular chronic spine pain, and, in many instances, the evidence shows moderate certainty of little to no effect.

Limitations of the study include limited direct evidence to inform effectiveness of several interventions vs sham procedures; also, the evidence evaluated was low or very low certainty, including adverse events. Additionally, few trials reported outcomes aside from pain, physical function, and adverse events, and there was an inability to explore subgroup effects due to limited representation. Lastly, previous systematic reviews were three times more likely to report positive results when the primary author was an interventionalist vs a noninterventionalist; however, most trials in this review did not provide sufficient details to explore this issue. (The following publication, previously cited in this policy, is included in this systematic review: Manchikanti et al., 2010.)

In a Hayes (2021; updated 2024) Evolving Evidence Review regarding ESIs for the treatment of thoracic spine pain, it was concluded that thoracic disc herniation is rare, and individuals may present with thoracic axial pain but no radicular pain. The clinical evidence is limited, and the results of one RCT suggest that ESI, either anesthetic alone or anesthetic plus corticosteroid, for chronic thoracic pain in individuals who primarily had disc-associated pain provided clinical benefits at up to 2 years.

Helm et al. (2021) conducted a systematic review and meta-analysis of the efficacy and safety of transforaminal ESIs for four indications: radicular pain; from spinal stenosis; from failed back surgery syndrome; and for axial low back pain. The available literature on transforaminal injections was reviewed, and the level of evidence was classified on a 5-point scale based on the quality of evidence developed by the U.S. Preventive Services Task Force and modified by the American Society of Interventional Pain Physicians (ASIPP). Data sources included relevant literature from 1966 to April 2020 and manual searches of the bibliographies of known primary and review articles. Pain relief and functional improvement were the primary outcome measures. A minimum of 6 months of pain relief follow-up was required. Overall, 18 RCTs met the inclusion criteria. In total, 11 RCTs dealt with various aspects of transforaminal injections for radicular pain due to disc herniation and showed level 1 evidence supporting the use of transforaminal injections for this condition. A meta-analysis showed that at both 3 and 6 months, there was highly statistically significant improvement in both pain and function with both particulate and nonparticulate steroids. For radicular pain from central stenosis, there is one moderate-quality study with level IV evidence. For radicular pain caused by failed back surgery syndrome, there is one moderate-quality study with level IV evidence. For radicular pain from foraminal stenosis and for axial pain, there is level V evidence, opinion-based/consensus, supporting the use of transforaminal injections. The authors concluded that level I evidence indicates that transforaminal injections are generally safe but have been associated with major neurological complications related to spinal cord infarction. Due to concern over the role of particulate steroids, multiple other injectates have been evaluated, including nonparticulate steroids, tumor necrosis factor-α inhibitors, and local anesthetics without steroids, and none have been proven superior. This review is limited by the paucity of literature for some indications.

Verheijen et al. (2021) conducted a systematic review and meta-analysis comparing ESIs with placebo injections in individuals with sciatica. The review included a total of 17 of 732 reports: epidural placebo (n = 13), nonepidural placebo (n = 2), and both placebo groups (n = 2). The primary outcome measures were pooled using a random-effects model for 6-week, 3-month, and 6-month follow-ups. The secondary outcomes were described qualitatively. The results showed that ESI was superior compared with epidural placebo at 6 weeks [-8.6 (-13.4; -3.9)] and 3 months [-5.2 (-10.1; -0.2)] for leg pain and at 6 weeks for functional status [-4.1 (-6.5; -1.6)], although the minimally clinical important difference was not met. There was no difference in ESI and placebo for back pain, except for nonepidural placebo at 3 months [6.9 (1.3; 12.5)]. Proportions of treatment success were not different. ESI reduced analgesic intake in some studies, and complication rates were low. Of the 17 trials, five were considered to be at a low risk of bias, two raised some concerns, and 10 studies were considered high risk. One serious adverse event was documented (retroperitoneal hematoma after ESI), and several minor complications related to needle placement and corticosteroid were noted. Limitations of the review include a low quality of evidence and limited number of comparison studies. The authors concluded that ESIs compared with placebo are considered a safe and effective treatment for short-term pain management; however, at 3 and 6 months, no proven additional value of ESI compared with placebo was noted.

In a 2020 meta-analysis of RCTs, Yang et al. compared the clinical effectiveness of ESIs vs that of conservative treatments in individuals with lumbosacral radicular pain. A search was conducted for relevant studies published between 2000 and January 10, 2019, and RCTs directly comparing the efficacy of ESI with that of conservative treatment were selected. The primary outcomes included pain relief, functional improvement using the ODI, and successful events. Overall, six RCTs (249 individuals with ESI and 241 individuals with conservative treatment) were identified and included in this meta-analysis. The results showed that ESI was beneficial for pain relief at the short-term (1-3 months) and intermediate-term (3-6 months) follow-ups compared with conservative treatment, but this effect was not maintained at the long-term (6 months to 1 year) follow-up. In terms of functional improvement, the overall outcome of meta-analysis showed that ESI did not have any advantage over conservative treatment at the short-term and intermediate-term follow-ups. Successful event rates were significantly higher in individuals who received ESI than in individuals who received conservative treatment. There were no statistically significant differences in functional improvement after ESI and conservative treatment at the short-term and intermediate-term follow-ups. The authors concluded that the use of ESI is

more effective for alleviating lumbosacral radicular pain than conservative treatments in the short term and intermediate term. Individuals also reported more successful outcomes after receiving ESI compared with conservative treatment. However, this effect was not maintained at the long-term follow-up. The limitations of this meta-analysis resulted from the variation in the types of interventions and small sample size.

A Hayes (2019; updated 2022) Health Technology Assessment regarding ESIs for cervical radiculopathy concluded that the evidence does not demonstrate any beneficial effect of ESIs on pain or disability associated with cervical radiculopathy compared with epidural injection of an anesthetic alone. Although the complications reported in the reviewed studies were generally mild and transient, serious adverse events have occurred, including paraplegia, meningitis, and epidural abscess. Differences, often subtle, in the injection route, region, steroid, anesthetic, and individuals' pathology result in a vast array of procedural options for ESI, and such variability makes interpretation of existing ESI data difficult.

Smith et al. (2019) published the results of a systematic review of 19 studies that assessed the efficacy of lumbar transforaminal steroid injection for radicular pain due to lumbar disc herniation. Placebo–controlled RCTs, pragmatic studies, and observational studies were included in the analysis. With a threshold of ≥ 50% reduction in pain, treatment success rates across studies were 63% (range, 58%-68%) at 1 month, 74% (68%-80%) at 3 months, 64% (59%-69%) at 6 months, and 64% (57%-71%) at 1 year. The authors concluded that there is strong evidence that lumbar transforaminal injection of steroids is an effective treatment for radicular pain due to disc herniation.

In a systematic review, Manchikanti et al. (2015) reported on the long-term efficacy of cervical interlaminar and transforaminal epidural injections, focusing on cervical disc herniation, spinal stenosis, and discogenic pain. Based on seven RCTs of different types of injections, none of which included comparison with a placebo group or with noninvasive treatment, the authors concluded that the studies demonstrated level II evidence for efficacy of cervical interlaminar epidural injections, in spite of the scant available clinical literature specific to conditions other than disc herniation. The findings are limited by the lack of a relevant comparison group that would allow estimation of the benefit of cervical epidural injection compared with that of other treatment approaches.

Clinical Practice Guidelines

American College of Occupational and Environmental Medicine (ACOEM)

In the 2021 guidelines for invasive treatments for low back disorders, the ACOEM states the following regarding ESIs:

- Recommended (I), moderate confidence for select circumstances as an option for treatment of acute or subacute radicular pain syndromes, typically after treatment with a nonsteroidal anti-inflammatory drug and a waiting period of at least 3 weeks.
- Moderately not recommended (B), moderate confidence for treatment of spinal stenosis.
- Not recommended, evidence (C), high confidence for treatment of acute, subacute, or chronic low back pain in the absence of significant radicular symptoms.

Agency for Healthcare Research and Quality (AHRQ) Technology Assessment Program

The 2015 AHRQ comparative effectiveness study on injection therapies for low back pain concludes that ESIs for radiculopathy were associated with immediate improvements in pain and might be associated with immediate improvements in function; however, benefits were small and not sustained, and there was no effect on long-term risk of surgery. Evidence does not suggest that effectiveness varies based on injection technique, corticosteroid, dose, or comparator. Limited evidence suggests that epidural corticosteroid injections are not effective for spinal stenosis or nonradicular back pain. (Chou et al., 2015)

American Society of Anesthesiologists (ASA)

As of 2010, the ASA had not issued a statement specifically on the use of epidural steroids for the management of low back pain and/or sciatica. However, the ASA Task Force on Pain Management issued more general practice guidelines for chronic pain management. The 2010 ASA guidelines recommend that ESIs, with or without local anesthetics, may be used as part of a multimodal treatment regimen to provide pain relief in selected patients with radicular pain or radiculopathy. Transforaminal epidural injections should be performed with appropriate image guidance to confirm correct needle position and spread of contrast before injecting a therapeutic substance.

American Academy of Neurology (AAN)

The AAN Guidelines Subcommittee published guidelines for ESIs for cervical and lumbar radicular pain and spinal stenosis (Armon et al., 2025). The systematic review summary found the following:

- ESIs probably reduce short-term disability (moderate confidence) for cervical or lumbar radiculopathy.
- ESIs possibly reduce short-term disability (low confidence) for lumbar spinal stenosis (LSS).
- There were no studies evaluating ESIs in cervical spinal stenosis.
- ESIs possibly decrease long-term disability (low confidence) for cervical or lumbar radiculopathy; however, data are mainly driven by lumbar studies.
- ESIs possibly reduce long-term disability in LSS.
- ESIs probably provide short-term pain reduction (moderate confidence) in patients with cervical and lumbar radiculopathy.
- ESIs probably do not reduce short-term pain in LSS, and evidence is insufficient on long-term pain reduction.
- Evidence is insufficient regarding long-term pain (≥ 6 months) reduction.
- Evidence for cervical radiculopathy is limited, as most data originate from lumbar studies, reducing generalizability.

In 2007 and reaffirmed in 2010, the Therapeutics and Technology Assessment Subcommittee of the AAN released an assessment addressing the use of ESIs to treat radicular lumbosacral pain:

- ESIs may result in some improvement in radicular lumbosacral pain when determined between 2 and 6 weeks following the injection compared with control treatment (level C, class I-III evidence). The average magnitude of effect is small, and the generalizability of the observation is limited by the small number of studies and limited to highly selected patient populations, the few techniques and doses studied, and variable comparison treatments.
- In general, ESIs for radicular lumbosacral pain have shown no impact on the average impairment of function, on need for surgery, or on long-term pain relief beyond 3 months. Their routine use for these indications is not recommended (level B, class I-III evidence).
- Data on the use of ESIs to treat cervical radicular pain are inadequate to make any recommendation (level U).

American Society of Interventional Pain Physicians (ASIPP)

The ASIPP published updated evidence-based guidelines regarding epidural interventional techniques in the management of chronic spinal pain in 2021 (Manchikanti et al.). The ASIPP maintains a comprehensive guideline for ESIs, including indications, limitations, and therapy frequencies. Specifically, these guidelines make the following conclusions or recommendations, among others:

- Disc herniation: Based on relevant, high-quality, fluoroscopically guided epidural injections, with or without steroids, and results of previous systematic reviews, the evidence is level I for caudal epidural injections, lumbar interlaminar epidural injections, lumbar transforaminal epidural injections, and cervical interlaminar epidural injections, with a strong recommendation for long-term effectiveness.
- For thoracic disc herniation, based on one relevant, high-quality RCT of the thoracic epidural with fluoroscopic guidance, with or without steroids, the evidence is level II, with a moderate to strong recommendation for long-term effectiveness.
- 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 a moderate to strong recommendation, and level II for fluoroscopically guided lumbar and cervical interlaminar epidural injections, with a moderate to strong recommendation for long-term effectiveness.
- The evidence for lumbar transforaminal epidural injections is level IV to III, with a moderate recommendation with fluoroscopically guided lumbar transforaminal epidural injections for long-term improvement.
- 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 a moderate to strong recommendation for long-term improvement, with or without steroids.
- Postsurgery syndrome: The evidence for lumbar and cervical postsurgery syndrome, based on one relevant, high-quality RCT with fluoroscopic guidance for caudal and cervical interlaminar epidural injections, with or without steroids, is level II, with a moderate to strong recommendation for long-term improvement.

The authors also observed that in “the therapeutic phase (after the diagnostic phase is completed), the suggested frequency of interventional techniques should be 2½ to 3 months or longer between each injection, provided that > 50% relief is obtained for 2½ to 3 months, not exceeding 4 per year, per region.”

American Association of Neurological Surgeons (AANS)/Congress of Neurological Surgeons (CNS)

In a 2014 joint guideline update, the AANS and CNS state that the published medical literature continues to fail to support the use of lumbar epidural injections for long-term relief of chronic back pain without radiculopathy and that there is limited support for their use for short-term relief in selected patients with chronic back pain. (Watters et al., 2014)

North American Spine Society (NASS)

In 2020, NASS revised its coverage policy recommendations for ESIs and selective spinal nerve blocks. They state that the rationale for coverage is based on high-level evidence (systematic reviews, meta-analyses, guidelines, and especially RCTs) and what most practitioners would consider to be accepted practice patterns. Multiple RCTs have demonstrated that lumbar ESIs are effective in the treatment of lumbar radiculitis caused by disc herniation. 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.

In their 2020 *Evidence-Based Clinical Guidelines for Multidisciplinary Spine Care: Diagnosis & Treatment of Low Back Pain*, NASS states that there is insufficient evidence to make a recommendation for or against the use of caudal ESIs and interlaminar ESIs in patients with low back pain.

In 2013, NASS published a Review and Recommendation Statement titled *Lumbar Transforaminal Epidural Steroid Injections*. A grade A recommendation (defined as good evidence) was given for the effectiveness of ESI at treating radicular pain related to lumbar disc herniation for at least 1 month in more than 50% of patients. The review graded the evidence as insufficient for a recommendation to treat lumbar radicular pain in the presence of stenosis. There was insufficient evidence to provide an evidence-based recommendation on the maximum number of lumbar ESIs that is appropriate in any given time frame or the amount of pain/functional improvement needed to justify repeat injections.

In 2011, NASS revised its *Evidence-Based Clinical Guidelines for Multidisciplinary Spine Care: Diagnosis and Treatment of Degenerative Lumbar Spinal Stenosis*. The guidelines state that while there is evidence that non–fluoroscopically guided interlaminar and single radiographically guided transforaminal ESIs can result in short-term symptom relief in patients with neurogenic claudication or radiculopathy, there is conflicting evidence concerning long-term efficacy. The guidelines also note that there is some evidence that a multiple-injection regimen of radiographically guided transforaminal ESIs or caudal injections can produce long-term relief of pain in patients with radiculopathy or neurogenic intermittent claudication from LSS. However, the evidence is of relatively poor quality. Therefore, no strong recommendation in support of this therapy was made.

In the 2010 *Evidence-Based Clinical Guidelines for Multidisciplinary Spine Care: Diagnosis & Treatment of Cervical Radiculopathy From Degenerative Disorders*, NASS states that transforaminal ESIs using fluoroscopic or computed tomography guidance may be considered when developing a medical/interventional treatment plan for patients with cervical radiculopathy from degenerative disorders and that consideration should be given to the potential complications before performing this procedure.

World Federation of Neurosurgical Societies (WFNS)

In 2020, the WFNS published the Spine Committee recommendations on conservative treatment and percutaneous pain relief in patients with LSS (Fornari et al., 2020). The following recommendations are made:

- Conservative treatment or follow-up for LSS:
  - In nonsevere clinical conditions, a conservative approach based on at least 3 weeks of therapeutic exercise may be the first therapeutic choice.
  - Medical/interventional treatment should be preferred to surgical treatment in patients with spinal stenosis with mild symptoms.
  - Physical therapy should consist of multimodal approaches.
  - If conservative treatment is chosen, surgery should be considered in cases in which the clinical condition does not change in 3 months.
  - There are some cases in which immediate surgical treatment can be indicated.
- Percutaneous pain relief techniques for LSS:
  - Literature supports short- to intermediate-term benefits of epidural injections for symptomatic treatment of LSS.
  - Inclusion of steroids does not confer a benefit compared with local anesthetic alone in epidural injections for symptomatic treatment of LSS.
  - For patients with symptomatic relief lasting < 3 months after epidural injections, proceeding with further injections is not recommended.

U.S. Food and Drug Administration (FDA)

This section is to be used for informational purposes only. FDA approval alone is not a basis for coverage.

Epidural steroid injection is a procedure and therefore not subject to FDA regulation. However, any medical devices, drugs, biologics, and tests used as a part of this procedure may be subject to FDA regulation. Injectable corticosteroids

include methylprednisolone, hydrocortisone, triamcinolone, betamethasone, and dexamethasone and are approved by the FDA; however, the effectiveness and safety of the drugs for epidural steroid injection have not been established, and the FDA has not approved corticosteroids for such use. Additional information may be obtained from the FDA Center for Drug Evaluation and Research at: https://www.fda.gov/about-fda/fda-organization/center-drug-evaluation-and-research-cder. (Accessed January 28, 2026)

In April 2014, the FDA warned that injection of corticosteroids into the epidural space of the spine may result in rare but serious adverse events, including loss of vision, stroke, paralysis, and death. They noted that the effectiveness and safety of epidural administration of corticosteroids have not been established and that the FDA has not approved corticosteroids for this use. The FDA is requiring the addition of a warning to the drug labels of injectable corticosteroids to describe these risks. The FDA recommends that individuals should discuss the benefits and risks of epidural corticosteroid injections with their health care professionals, along with the benefits and risks associated with other possible treatments. Further information can be found at: https://www.fda.gov/drugs/drug-safety-and-availability/fda-drug-safety-communication-fda-requires-label-changes-warn-rare-serious-neurologic-problems-after. (Accessed January 28, 2026)

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Policy History/Revision Information

Date	Summary of Changes
06/01/2026	**Coverage Rationale** • Replaced references to “Radicular Pain” with “Radicular *Back* Pain” **Applicable Codes** • Removed CPT codes 62323, 64480, and 64483 **Supporting Information** • Updated *Clinical Evidence*, *FDA*, and *References* sections to reflect the most current information • Archived previous policy version 2026T0616M

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