

Lumbar Epidural Injections



**DEFINING APPROPRIATE
COVERAGE POSITIONS**

Introduction

North American Spine Society (NASS) coverage policy recommendations are intended to assist payers and members by proactively defining appropriate coverage positions. Historically, NASS has provided comment on payer coverage policy upon request. However, in considering coverage policies received by the organization, NASS believes proactively examining medical evidence and recommending credible and reasonable positions may be to the benefit of both payers and members in helping achieve consensus on coverage before it becomes a matter of controversy.

Methodology

The coverage policies put forth by NASS use an evidence-based approach to spinal care when possible. In the absence of strict evidence-based criteria, policies reflect the multidisciplinary and non-conflicted experience and expertise of the authors in order to reflect reasonable standard practice indications in the United States.

[NASS Coverage Policy Methodology](#)

Background Information

Lumbar epidural steroid injections can be performed via an interlaminar or caudal approach (CPT code 62311) or a transforaminal approach that includes the use of fluoroscopic or CT-guidance, which is bundled into the procedure (CPT codes 64483-64484). Fluoroscopic-guidance (CPT code 77003) is not bundled into CPT code 62311 and can be billed separately when performed with an interlaminar epidural steroid injection. Interlaminar and transforaminal epidural steroid injections using ultrasound guidance (CPT codes 0030T-0031T) are not recommended for coverage by NASS.

Scope and Clinical Indications

Therapeutic lumbar epidural steroid injections (ESIs) are indicated for the following diagnoses with qualifying criteria, when appropriate.

1. **Lumbar radicular pain** in which the following criteria are met:
 - a. the pain is severe enough to cause some degree of functional deficit
 - b. failure of at least four weeks of noninvasive care (see below*)
 - c. imaging demonstrating a correlative region of nerve impingement
2. **Neurogenic claudication** in which the following criteria are met:
 - a. the pain is severe enough to cause some degree of functional deficit

- b. failure of at least four weeks of noninvasive care (see below*)
 - c. imaging demonstrating a correlative region of nerve impingement
3. **Low back pain** without lower extremities symptoms **ONLY** in the following clinical scenarios:
 - a. High-level athletes during a competitive season
 - b. Pregnant women with intractable low back pain unresponsive to other treatments

*It is known that the majority of back and radicular pain will improve over 4 weeks. It is therefore reasonable to recommend failure of four weeks of non-surgical, noninvasive care. Appropriate non-surgical, non-injection treatments should be considered along with a rationale for interventional treatment. Exceptions to waiting 4 weeks can exist but should be carefully documented and should be reviewed on a case-by-case basis. These include, but are not limited to:

- a. At least moderate pain with significant functional loss at work and/or home
- b. Severe pain unresponsive to outpatient medical management
- c. Inability to tolerate non-surgical, non-injection care due to co-existing medical condition(s) (e.g. cardiac disease)
- d. Prior successful ESI for the same condition

Diagnostic selective nerve root blocks (DSNRBs) use a small amount of anesthetic via a **transforaminal approach** to anesthetize a specific spinal nerve and share the same CPT codes as therapeutic transforaminal ESIs (64479-64484). DSNRBs are used to evaluate a patient's anatomical level and/or source of radicular pain and are often used in surgical planning and decision-making. The following must be documented:

- Post-injection assessment of the percentage of pain relief and/or change in visual or numerical analog score (VAS/NAS).

Contraindications to Lumbar Epidural Injections and DSNRBs

Lumbar ESIs and DSNRBs are **NOT** indicated in cases that do not fulfill the above criteria. Of note, lumbar epidural steroid injections are not indicated in the following scenarios:

- **Cancer:**
 - New onset low back pain with a history of cancer, multiple risk factors for cancer, or strong clinical suspicion for cancer in the absence of advanced imaging studies (to rule out local cancer involvement)
 - Epidural injections may be considered if cancer is ruled-out or if the patient's pain is felt to be unrelated to their cancer **AND** they meet one of the above criteria lists (Items 1, 2, or 3)

- **Infection:**
 - New onset of low back pain with fever in the absence of advanced imaging studies (to rule out local infection)
 - History of active intravenous drug use
 - History of recent or ongoing systemic bacterial or fungal infection
 - Immunosuppression
- **Cauda equina syndrome**
 - New onset urinary retention, fecal incontinence, or saddle anesthesia
 - Rapidly progressing (or other) neurological deficits
- **Axial Low Back Pain without lower extremity symptoms**
- **Co-existing medical conditions** that would preclude the safe performance of the injection or be a contraindication to the intervention (e.g. bleeding disorder, presence of an epidural mass, or central nerve system (CNS) disorders[#] such as transverse myelitis or other demyelinating disorder)
 - [#]Note that if a CNS process is present, but the pain or neurologic deficit is clearly unrelated, an ESI may still be indicated if the patient meets one of the above criteria lists (Items 1, 2, or 3)

Procedural Requirements, Utilization, and Restrictions:

Lumbar epidural steroid injections, regardless of approach or indication, are subject to the following requirements and restrictions:

- Contrast enhanced fluoroscopy or CT guidance.
 - For transforaminal ESIs, live contrast-enhanced fluoroscopy or digital subtraction angiography is preferred, though contrast-enhanced CT guidance may be performed with the understanding that this form of visualization might not detect intravascular flow leading to potential complications, especially if particulate steroids are used.
 - Exceptions to the use of contrast are considered in patients who have a significant history and/or are at high risk for an adverse event if contrast material is used (e.g. contrast allergy).
 - In these cases, physicians should consider using a test-dose injection prior to injecting any particulate steroids and/or use only non-particulate steroid solutions.
 - The reasons for not using contrast should be documented in the procedure report.

- Injections are performed independently based on the patients' symptoms and response to prior injections and approach (if performed). There is no role for a routine "series of 3" ESIs.
- If a prior lumbar ESI provided no relief, a second ESI is allowed following reassessment of the patient, injection technique and/or medication used.
- No more than 3 lumbar ESIs and/or DSNRBs may be performed in a 6-month period of time.
- No more than 6 lumbar ESIs and/or DSNRBs may be performed in a 12-month period of time regardless of the number of levels involved.
- Films that adequately document final needle position and injectate flow must be retained and made available upon request.
- No more than 2 transforaminal injections may be performed at a single setting (e.g. single level bilaterally or two levels)
- For caudal or lumbar interlaminar injections, only one per session may be performed and NOT in conjunction with a transforaminal injection.
- For each session, no more than 80mg of triamcinolone, 80 mg of methylprednisolone, 12 mg of betamethasone, 15 mg of dexamethasone or equivalent corticosteroid dosing should be used.
- Given the recent RCT evidence (Kennedy et al, Pain Medicine, 2014; El-Yahouchi et al, Pain Medicine, 2014) for the therapeutic equivalency of dexamethasone to particulate steroid, particulate-free steroid, such as dexamethasone, should be used as the first line drug in all transforaminal ESIs. Particulate steroid should be used only after failure of particulate-free steroid and with appropriate patient counseling and safeguards, such as digital subtraction imaging.
- Local anesthesia is usually sufficient for a majority of lumbar ESIs though on occasion minimal to moderate conscious sedation is an appropriate option
- If monitored anesthesia care is utilized, the need for such sedation should be clearly documented in the medical records.

Rationale

Lumbar epidural steroid injections are one the most commonly performed injection procedures in the treatment of spine-related pain. The proposed Coverage Policy (also known as the "Policy") put forth by the North American Spine Society utilizes an evidence-based approach to spinal care when possible. In the absence of strict evidence-based criteria, the Policy utilizes the multidisciplinary and non-conflicted experience and expertise of the task force in order to reflect reasonable standard practice indications in the United States.

For lumbar radicular pain, the rationale for coverage is based on high-level evidence and what most practitioners would consider to be accepted practice patterns. Lumbar radicular pain may be caused by

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a myriad of pathologic conditions including, but not limited to lumbar disc herniation, lumbar stenosis (central or foraminal), lumbar spondylolisthesis, post-operative perineural fibrosis, or failed low back surgery syndrome. Multiple randomized-controlled trials have demonstrated that ESIs are effective in the treatment lumbar radiculitis caused by disc herniation¹⁻⁸. There is sufficient literature to suggest that at least a trial of ESI's for radicular pain caused by conditions other than disc herniation is appropriate⁹⁻¹⁷ prior to considering surgical intervention.

For neurogenic claudication, the rationale for coverage is based on what most practitioners would consider to be accepted practice patterns. Neurogenic claudication is caused by spinal stenosis, either degenerative or isthmic. There is literature to suggest that ESIs are effective in reducing pain in this patient population^{10,18,19} though this treatment seems to be less effective in this group than in patients with herniated discs^{20,21}. In addition, there is data that shows that the injection of epidural steroid is equivalent to epidural local anesthetic^{15, 22-26}. It should be noted that epidural injection of local anesthetic has been clearly demonstrated to be more effective than a placebo²⁷. Based on these data, it is felt that a trial of epidural injections is reasonable prior to the consideration of surgical intervention for neurogenic claudication associated with lumbar spinal stenosis.

For selected cases of LBP, the rationale for coverage is based on what most practitioners would consider to be accepted practice patterns. While epidural injections are not typically considered an effective treatment for isolated, non-specific low back pain, they can be helpful in certain circumstances as described above. It is acknowledged that there is a paucity of data on this topic. In the absence of quality data, this coverage recommendation is guided by what appears to be reasonable and accepted practice patterns.

The rationale for the procedural **requirements, utilization, and restrictions** is based on what most practitioners would consider to be accepted practice patterns. In addition, there are a number of reports of complications associated with epidural injections²⁸⁻³³ that have occurred primarily as a result of intravascular injection. The use of live, contrast-enhanced fluoroscopy, digital subtraction, and the use of non-particulate steroids minimizes these risks.

As the potential risks with ESIs are both local from the procedure itself and systemic from the medications injected (specifically steroids), it is reasonable to place limits on the number of injections that should be administered in a given time. Currently, there are no data to support performing a predetermined "series" of injections. The determination to perform more than one injection should be based on the patient's response to the prior injection, the approach/location it was administered, the patient's symptoms, the medications used, and the imaging findings. This evaluation needs to be done via a face-to-face encounter and the reasons for repeating the injection clearly documented.

References

1. Ghahreman A, Ferch R, Bogduk N. *The efficacy of transforaminal injection of steroids for the treatment of lumbar radicular pain. Pain medicine (Malden, Mass) 2010;11:1149-68.*
2. Ng L, Chaudhary N, Sell P. *The efficacy of corticosteroids in periradicular infiltration for chronic radicular pain: a randomized, double-blind, controlled trial. Spine 2005;30:857-62.*
3. Riew KD, Yin Y, Gilula L, et al. *The effect of nerve-root injections on the need for operative treatment of lumbar radicular pain. A prospective, randomized, controlled, double-blind study. The Journal of bone and joint surgery American volume 2000;82-A:1589-93.*
4. Karppinen J, Malmivaara A, Kurunlahti M, et al. *Periradicular infiltration for sciatica: a randomized controlled trial. Spine 2001;26:1059-67.*
5. Tafazal S, Ng L, Chaudhary N, Sell P. *Corticosteroids in peri-radicular infiltration for radicular pain: a randomised double blind controlled trial. One year results and subgroup analysis. European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society 2009;18:1220-5.*
6. Vad VB, Bhat AL, Lutz GE, Cammisa F. *Transforaminal epidural steroid injections in lumbosacral radiculopathy: a prospective randomized study. Spine 2002;27:11-6.*
7. Manchikanti L, Singh V, Cash KA, Pampati V, Damron KS, Boswell MV. *A randomized, controlled, double-blind trial of fluoroscopic caudal epidural injections in the treatment of lumbar disc herniation and radiculitis. Spine 2011;36:1897-905.*
8. Manchikanti L, Singh V, Falco FJ, Cash KA, Pampati V. *Evaluation of the effectiveness of lumbar interlaminar epidural injections in managing chronic pain of lumbar disc herniation or radiculitis: a randomized, double-blind, controlled trial. Pain physician 2010;13:343-55.*
9. Arden NK, Price C, Reading I, et al. *A multicentre randomized controlled trial of epidural corticosteroid injections for sciatica: the WEST study. Rheumatology (Oxford, England) 2005;44:1399-406.*
10. Botwin K, Brown LA, Fishman M, Rao S. *Fluoroscopically guided caudal epidural steroid injections in degenerative lumbar spine stenosis. Pain physician 2007;10:547-58.*

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11. Buchner M, Zeifang F, Brocai DR, Schiltenswolf M. Epidural corticosteroid injection in the conservative management of sciatica. *Clinical orthopaedics and related research* 2000;149-56.
12. Bush K, Hillier S. A controlled study of caudal epidural injections of triamcinolone plus procaine for the management of intractable sciatica. *Spine* 1991;16:572-5.
13. Iversen T, Solberg TK, Romner B, et al. Effect of caudal epidural steroid or saline injection in chronic lumbar radiculopathy: multicentre, blinded, randomised controlled trial. *Bmj* 2011;343:d5278.
14. Klenerman L, Greenwood R, Davenport HT, White DC, Peskett S. Lumbar epidural injections in the treatment of sciatica. *British journal of rheumatology* 1984;23:35-8.
15. Manchikanti L, Cash KA, McManus CD, Pampati V, Singh V, Benyamin R. The preliminary results of a comparative effectiveness evaluation of adhesiolysis and caudal epidural injections in managing chronic low back pain secondary to spinal stenosis: a randomized, equivalence controlled trial. *Pain physician* 2009;12:E341-54.
16. Manchikanti L, Singh V, Cash KA, Pampati V, Datta S. A comparative effectiveness evaluation of percutaneous adhesiolysis and epidural steroid injections in managing lumbar post surgery syndrome: a randomized, equivalence controlled trial. *Pain physician* 2009;12:E355-68.
17. Manchikanti L, Singh V, Cash KA, Pampati V, Datta S. Management of pain of post lumbar surgery syndrome: one-year results of a randomized, double-blind, active controlled trial of fluoroscopic caudal epidural injections. *Pain physician* 2010;13:509-21.
18. Koc Z, Ozcakar S, Sivrioglu K, Gurbet A, Kucukoglu S. Effectiveness of physical therapy and epidural steroid injections in lumbar spinal stenosis. *Spine* 2009;34:985-9.
19. Lee JW, Myung JS, Park KW, et al. Fluoroscopically guided caudal epidural steroid injection for management of degenerative lumbar spinal stenosis: short-term and long-term results. *Skeletal radiology* 2010;39:691-9.
20. Radcliff K, Kepler C, Hilibrand A, et al. Epidural steroid injections are associated with less improvement in patients with lumbar spinal stenosis: a subgroup analysis of the Spine Patient Outcomes Research Trial. *Spine* 2013;38:279-91.

21. Rivest C, Katz JN, Ferrante FM, Jamison RN. *Effects of epidural steroid injection on pain due to lumbar spinal stenosis or herniated disks: a prospective study. Arthritis care and research : the official journal of the Arthritis Health Professions Association* 1998;11:291-7.
22. Fukusaki M, Kobayashi I, Hara T, Sumikawa K. *Symptoms of spinal stenosis do not improve after epidural steroid injection. The Clinical journal of pain* 1998;14:148-51.
23. Manchikanti L, Cash KA, McManus CD, Damron KS, Pampati V, Falco FJ. *Lumbar interlaminar epidural injections in central spinal stenosis: preliminary results of a randomized, double-blind, active control trial. Pain physician* 2012;15:51-63.
24. Manchikanti L, Cash KA, McManus CD, Pampati V, Abdi S. *Preliminary results of a randomized, equivalence trial of fluoroscopic caudal epidural injections in managing chronic low back pain: Part 4--Spinal stenosis. Pain physician* 2008;11:833-48.
25. Manchikanti L, Cash KA, McManus CD, Pampati V, Fellows B. *Fluoroscopic caudal epidural injections with or without steroids in managing pain of lumbar spinal stenosis: one-year results of randomized, double-blind, active-controlled trial. Journal of spinal disorders & techniques* 2012;25:226-34.
26. Manchikanti L, Cash KA, McManus CD, Pampati V, Fellows B. *Results of 2-year follow-up of a randomized, double-blind, controlled trial of fluoroscopic caudal epidural injections in central spinal stenosis. Pain physician* 2012;15:371-84.
27. Bicket MCM, Anita D.O.†; Brown, Charlie H. IV M.D.‡; Cohen, Steven P. M.D. *Epidural Injections for Spinal Pain: A Systematic Review and Meta-analysis Evaluating the "Control" Injections in Randomized Controlled Trials. Anesthesiology* 2013;119:907-31.
28. Dere K, Akbas M, Bicerer E, Ozkan S, Dagli G. *A complication during caudal steroid injection. Journal of back and musculoskeletal rehabilitation* 2009;22:227-9.
29. Houten JK, Errico TJ. *Paraplegia after lumbosacral nerve root block: report of three cases. The spine journal : official journal of the North American Spine Society* 2002;2:70-5.
30. Huntoon MA, Martin DP. *Paralysis after transforaminal epidural injection and previous spinal surgery. Regional anesthesia and pain medicine* 2004;29:494-5.

31. Karaman H, Kavak GO, Tufek A, Yldrm ZB. *The complications of transforaminal lumbar epidural steroid injections. Spine* 2011;36:E819-24.
32. Kennedy DJ, Dreyfuss P, Aprill CN, Bogduk N. *Paraplegia following image-guided transforaminal lumbar spine epidural steroid injection: two case reports. Pain medicine (Malden, Mass)* 2009;10:1389-94.
33. Thefenne L, Dubecq C, Zing E, et al. *A rare case of paraplegia complicating a lumbar epidural infiltration. Annals of physical and rehabilitation medicine* 2010;53:575-83.

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