

# Epiduroscopy, Epidural Lysis of Adhesions, and Discography (for Pennsylvania Only)

**Policy Number:** CS040PA.O  
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[Instructions for Use](#)

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Related Policy
<ul style="list-style-type: none"> <li><a href="#">Ablative Treatment for Spinal Pain (for Pennsylvania Only)</a></li> </ul>

## Application

This Medical Policy only applies to the state of Pennsylvania. Any requests for services that do not meet criteria set in the PARP will be evaluated on a case by case basis. Refer to [Pennsylvania Exceptions, Pennsylvania Code, Title 55, Chapter 1101](#).

## Coverage Rationale

The following are unproven and not medically necessary for the diagnosis or treatment of any type of neck, back, or spinal disorder due to insufficient evidence of efficacy:

- Discography
  - Functional anesthetic discography
  - Provocative discography
  - Chemonucleolysis
- Epiduroscopy (including spinal myeloscopy)
- Percutaneous and endoscopic epidural lysis of adhesions

## 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 federal, state, or contractual requirements 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.

**Coding Clarification:** Functional anesthetic discography should be billed with CPT code 64999.

CPT Code	Description
62263	Percutaneous lysis of epidural adhesions using solution injection (e.g., hypertonic saline, enzyme) or mechanical means (e.g., catheter) including radiologic localization (includes contrast when administered), multiple adhesiolysis sessions; 2 or more days

CPT Code	Description
62264	Percutaneous lysis of epidural adhesions using solution injection (e.g., hypertonic saline, enzyme) or mechanical means (e.g., catheter) including radiologic localization (includes contrast when administered), multiple adhesiolysis sessions; 1 day
62290	Injection procedure for discography, each level; lumbar
62291	Injection procedure for discography, each level; cervical or thoracic
62292	Injection procedure for chemonucleolysis, including discography, intervertebral disc, single or multiple levels, lumbar
64999	Unlisted procedure, nervous system
72285	Discography, cervical or thoracic, radiological supervision and interpretation
72295	Discography, lumbar, radiological supervision and interpretation

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## Description of Services

Epiduroscopy is a procedure that requires removal of adhesions and fibrosis using a laser, the tip of the flexible catheter and saline flushing. In the final stage, steroids are administered to help cleanse the inflammatory agents in the epidural space. With this technique, the epidural space can easily be monitored, anatomical structures identified, and pathologies detected (Hazer et al., 2018).

Chemonucleolysis is a minimally invasive procedure that consists of injecting of a proteolytic enzyme into the intervertebral disc for the purpose of dissolving the herniated nucleus pulposus; this procedure has been proposed as a solution to bridge the gap between conservative therapy and surgical intervention. Chymopapain was the first protein enzyme identified and used for chemonucleolysis; it was discontinued due to safety concerns. New enzymes continue to be developed and studied for their safety and effectiveness.

Epidural lysis of adhesions (adhesiolysis, percutaneous and epidural neuroplasty, epidurolysis) is a minimally invasive procedure for individuals who have epidural adhesions that are thought to cause chronic low back pain. The procedure is often performed using local anesthesia and a mild sedative, so the individual is able to communicate with the surgeon about the source of the pain. The surgeon injects normal saline to distend and decompress the epidural space and performs mechanical manipulations of a fiberoptic endoscope to cause direct disruption of fibrosis, scar tissue, or adhesions. Percutaneous adhesiolysis (also known as the Racz procedure) can also be performed. This procedure uses a needle to enter the epidural space at the level of the spinal column at which adhesions are suspected. Nonionic contrast medium is introduced, and a lumbar epidurogram is obtained.

Functional anesthetic discography is a diagnostic procedure that involves injecting an anesthetic agent directly into a spinal disc via a catheter system. Once the catheter is inserted into the disc nucleus, the individual tries to recreate the back pain by performing activities such as sitting, walking, or bending. If pain is produced, an anesthetic agent is injected and the individual again attempts to recreate the back pain. The amount of pain is then compared and used to confirm the level of disc involvement and determine additional treatment options.

Provocative discography is an invasive diagnostic spine procedure that involves the administration of contrast into the nucleus pulposus of an intervertebral disc to determine if the disc is the origin of an individual's chronic spine pain. The test is based on the premise that discs can be a source of spine pain, and a symptomatic, internally disrupted disc causes pain when it is mechanically loaded; therefore, it should be similarly painful when pressurized with injected contrast (Gruver and Guthmiller, 2019).

## Clinical Evidence

### Discography

The available evidence is limited and low in quality for the clinical utility of discography for diagnosis and/or treatment of spinal disorders. Safety concerns, including the potential to accelerate degenerative changes, highlight the importance of exercising caution in the use of discography. Given these limitations, additional well-designed, long-term, randomized controlled trials (RCTs) are needed for the evaluation of efficacy, safety, and long-term effects.

A 2023 Hayes Evidence Analysis Research Brief on the clinical utility of lumbar discography for assessing low back pain (LBP) identified two new abstracts since 2017 that evaluated treatment guided by lumbar discography compared with a no

surgery or no discography control group. The first was a 2023 prospective comparative study from Sweden that evaluated discography and magnetic resonance imaging (MRI) for LBP in 17 individuals. The authors found no differences in longitudinal change of MRI parameters between the individuals with LBP who were treated with or without fusion surgery. The other study was a 2022 retrospective cohort study in the US in 104 individuals, which evaluated provocative discography (PD) for degenerative disc disease (DDD). The authors concluded that individuals who underwent a provocative discogram and fusion had a higher rate of subsequent degeneration than those individuals with similar LBP with no discogram.

In a 2022 retrospective cohort analysis, Pinto et al. (included in the 2023 Hayes Research Brief above) reported on the efficacy and safety of PD for symptomatic DDD. The study compared patients who received a provocative discogram (53 patients, 193 discs) with a control group (51 patients, 255 discs) that included patients with a history of LBP who did not have a discogram and at least two sets of lumbar MRI, with a minimum of 5 years in between. Descriptive summaries were generated by group for each level and for all levels combined. Normal discs [no inner annular fissure, full-thickness tear, dye leak (discogram group), Schmorl node, venous filling, or narrowing] were identified on index MRIs in both groups. The same discs were then graded as normal or degenerated on follow-up MRIs of 8 years for the index and 11 years for the control group. The results showed that in the discogram group, 68 normal discs were present; on follow-up MRI, 25 remained normal. In the control group, 90 normal discs were present, and 30 showed degeneration at follow-up. No infections, deaths, or long-term neurological injuries occurred. The authors concluded that provocative discograms have good efficacy in the identification of DDD, but concerns for accelerated disc degeneration adjacent to previous fusion may still exist. However, following stratification of discography patients, they found that it did not increase this risk. Limitations include a small number of patients; further research is needed to validate these findings.

Cuellar et al. (2016) investigated the clinical effects of lumbar PD in participants who underwent this evaluation method in a prospective, 10-year matched cohort study. Participants (n = 75) without current LBP problems were recruited to participate in a study of PD at the L3 to S1 discs. A closely matched control cohort (n = 75) was simultaneously recruited to undergo a similar evaluation, except for discography injections. The primary outcome variables were diagnostic imaging events and lumbar disc surgery events. The secondary outcome measures were serious LBP events, disability events, and medical visits. All participants were followed up by serial protocol evaluations at 1, 2, 5, and 10 years after enrollment. Of the 150 participants, 71 discography participants and 72 control participants completed the baseline evaluation. At 10 years, study and control participants who completed all interval surveillance evaluations were 57 and 53, respectively. Overall, 16 lumbar surgeries occurred in the study group compared with four in the control group. Medical visits, computed tomography/MRI examinations, work loss, and prolonged back pain episodes were all more frequent in the discography group than in control participants. The authors' results demonstrated a significantly higher rate of lumbar spine surgery in participants who were exposed to discography. However, it was noted that most participants who were exposed to discography did not eventually require surgery. While the researchers concluded that disc puncture and pressurized injection performed during PD can increase the risk of clinical disc problems, they suggested that longer-term follow-up in participants who are exposed to lumbar PD could provide more answers. Limitations of the study include loss to follow-up over the 10-year period and the inability to assess the outcomes in all participants.

## **Chemonucleolysis**

Chemonucleolysis is a minimally invasive treatment option for individuals who are experiencing lumbar disc herniation (LDH); however, the evidence is limited. Additional long-term RCTs are needed for the evaluation of safety, efficacy, long-term effects, and optimal chemonucleolysis agent.

Sakamoto et al. (2024) conducted a retrospective review of patients who underwent chemonucleolysis with chondriase between April 1, 2020, and March 31, 2023. The study included 283 patients who were treated with chondroitinase-ABC for LDH. Mild skin rashes were observed in seven cases within a few hours to 2 days post treatment, all of which resolved within a few days with standard care. Importantly, no severe adverse events (SAEs) such as anaphylactic shock were reported. Pain levels were assessed using the numerical rating scale (NRS) before treatment, the day after injection, and at 1 and 3 months post treatment. At 3 months, 67.6% of patients achieved pain relief that exceeded the minimum clinically important difference typically seen with lumbar discectomy. Early improvements were also noted, with 27.6% of patients reporting relief the day after treatment and 52.4% having improvement at 1 month. Factors associated with better outcomes included a shorter duration of symptoms prior to treatment, higher pretreatment NRS scores for leg pain, and the presence of high signal intensity in the herniated disc on MRI. The authors concluded that chondriase chemonucleolysis is a safe and minimally invasive treatment option for individuals with LDH who do not respond to conservative therapies. However, the study's limitations include its retrospective design, a short follow-up period of only 3 months, and potential confounding factors such as hospitalization-related rest and placebo effects that influenced early symptom relief. Additionally, the small number of patients with extensive surgical histories and lateral herniations limits the generalizability. Future studies, with larger sample sizes to further validate these findings, are needed.

Kobayashi et al. (2024) conducted a retrospective cohort study that involved 371 patients who received condoliase injections for LDH between August 2018 and January 2024. The aim was to identify characteristics of early responders to condoliase therapy. Each patient received a 1-mL injection of condoliase (1.25 U/mL) directly into the intervertebral nucleus pulposus. Clinical evaluations were performed prior to the injection and at 1 day, 1 week, 4 weeks, and 12 weeks post treatment, with pain levels assessed using a visual analog scale (VAS) and herniation parameters evaluated via axial MRI. Among the patients, 142 experienced at least a 50% reduction in leg pain within 1 week, 113 between weeks 1 and 4, 49 between weeks 5 and 12, and 67 after 12 weeks or more. No cases of anaphylactic shock or neurological complications were reported, although six patients developed a rash within 3 days of injection, which resolved with standard dermatologic care. The authors noted that some patients continued conservative treatments such as physical therapy, oral analgesics, or nonsteroidal anti-inflammatory drugs after receiving the injection. While these adjunct therapies are part of routine care, they added that this may have influenced early symptom improvement and represent a potential confounding factor that should be considered in future research. The authors reported that condoliase chemonucleolysis led to a 21% improvement in symptoms by the next day and a 38% improvement within 1 week. Overall, 82% of patients had significant clinical improvement, without serious adverse events, supporting the safety and efficacy of condoliase for treating radicular symptoms associated with LDH. Factors such as patient age, high-intensity MRI signals, and baseline Pfirrmann grade were significantly associated with early improvement. The study's limitations include a relatively short follow-up period, its retrospective design, and inconsistent early MRI evaluations. The authors emphasized the need for longer-term studies, with standardized imaging and outcome measures, to better identify which patients are most likely to benefit from condoliase therapy. A systematic review and meta-analysis that adhered to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines conducted by Schol et al. (2024) evaluated the effectiveness associated with the use of chemonucleolytic enzymes for managing LDH. The review analyzed data reported on pain reduction, the incidence of SAEs, and results from different imaging techniques after the use of chemonucleolytic enzymes. The review also aimed to determine the overall frequency of SAEs, the efficacy of the treatment, and how often individuals resorted to surgery when chemonucleolysis did not yield satisfactory results compared with the sham and surgery cohorts. The review included 62 studies, with a total of 12,368 individuals. Each individual had been confirmed to have either a single-level or multilevel LDH through clinical assessment and imaging tests and had received chemonucleolysis at one or more disc levels. The authors' review of the data revealed that chemonucleolysis was markedly superior to placebo in achieving treatment success, proving its effectiveness in reducing symptoms of radiculopathy and disability that are associated with LDH. The success rates of chemonucleolysis were found to be on par with those of surgical methods, indicating that chemonucleolysis could serve as a viable independent treatment option and potentially replace surgery. SAEs were reported in 1.4% of cases, with the majority being infections, allergic reactions, or significant exacerbations of LBP or disc deterioration. While the results are indeed encouraging, the authors concluded that the existing evidence base, particularly regarding chymopapain, is somewhat outdated, with many studies conducted prior to the 2000s. The retrospective design of these studies, small size of the study groups, and high potential for bias are significant drawbacks. Moreover, the diversity in the criteria for measuring outcomes and conditions of the individuals in these studies necessitate a cautious approach when making conclusive statements. The authors suggested that future research should focus on organizing and conducting trials of higher quality. They advocate for large-scale RCTs, with strict research protocols and uniform reporting standards, as these could provide more reliable and widely applicable conclusions about the effectiveness and safety of enzymatic chemonucleolytic treatments for LDH. [Banno et al. (2021), Chiba et al. (2018), Ishibashi et al. (2020), and Okada et al. (2020) are included in this systematic review.]

A Clinical Evidence Assessment by ECRI (2022) focused on DiscoGel®'s safety and efficacy for treating lumbar DDD. Limited evidence identified no RCTs that compared DiscoGel therapy with an alternative treatment. While low-quality evidence suggests that DiscoGel therapy is safe, reduces pain, and improves symptoms in individuals with lumbar DDD, there was no evidence to determine whether DiscoGel therapy worked as well or better than other treatments.

Kelekis et al. (2022) compared treatment and clinical outcomes with intradiscal oxygen-ozone treatment with those of microdiscectomy in participants with LDH radiculopathy. Overall, 49 participants aged between 18 and 65 years, with a leg pain intensity NRS of  $\geq 5.0$  and symptoms lasting at least 6 weeks or more, were randomized in a 1:1 ratio to either receive oxygen-ozone intradiscal injection or microdiscectomy. The intradiscal oxygen-ozone injections were performed in participants who were under conscious sedation, while the microdiscectomy was performed under general anesthesia. Participants were evaluated at baseline, 1 week, and 1, 3, and 6 months. The NRS was used to assess leg pain on a scale of 0 to 10 at each visit; other measured clinical outcomes included separate NRS scores for back pain, the Roland-Morris Disability Index, and the EQ-5D quality-of-life questionnaire. The primary end point was improvement in leg pain over 6 months based on the NRS. The authors found that the mean scores for leg pain and back pain had significantly improved in both groups; thus, the authors concluded that the intradiscal oxygen-ozone treatment was no worse than the microdiscectomy procedure. Limitations include a significantly small sample size, which limited the estimation of safety for both treatments; in addition, the study was not powered to detect adverse events.

Banno et al. (2021) performed a retrospective study that aimed to assess radiographs after chemonucleolysis with condoliase and examine 1-year clinical outcomes. Overall, 60 patients (37 men, 23 women) with LDH who received condoliase injection and had a follow-up period of greater than 1 year were included in the study. MRI was used to evaluate changes in disc height and degeneration. VAS scores for leg and back pain and the Oswestry Disability Index (ODI) were obtained. Data were assessed at baseline and the 1-month, 3-month, and 1-year follow-ups. Surgical treatment was required in eight patients (12.5%) after condoliase therapy. ODI and VAS scores for leg pain and back pain significantly improved at 1 year, as in those who received condoliase therapy only. On MRI, progression of Pfirrmann grade was observed in 23 patients (44.2%) at 3 months; however, eight patients recovered to baseline at 1 year. The mean disc height decreased at 3 months but recovered at 1 year. Disc height recovery was observed in 30.8% of the patients. Patients with disc height recovery were significantly younger than those without. Patients with longer symptom duration ( $\geq 1$  year) had significantly lower rates of effectiveness than those with shorter symptom durations ( $< 1$  year). The authors concluded that chemonucleolysis with condoliase is a safe, minimally invasive, highly effective treatment that could be an alternative treatment for LDH but acknowledged that 12.5% of patients required surgical treatment within 1 year after condoliase therapy. Additionally, disc degeneration that was induced by chemonucleolysis could be recovered, particularly in younger patients, and prolonged symptom duration had adverse effects on outcomes. The authors noted the study limitations as a relatively small sample size and short mean follow-up period of  $22.0 \pm 6.0$  months; additionally, clinical outcomes between patients who underwent intradiscal condoliase therapy and conservative controls were not compared. The authors recommended further clinical surveys that involve a larger number of patients, with longer follow-up periods, to determine the prognostic factors for condoliase therapy and changes in disc degeneration. In 2022, the same authors, Banno et al., reported the 2-year clinical outcomes of this study. The results showed similar outcomes with no symptom recurrence or radiographic evidence of reprotusion of the disc at the same level. Progression of disc degeneration was observed in 57.1% of patients at 3 months; however, 30% recovered to baseline at 2 years. The mean disc height decreased at 3 months but recovered slightly at 1 year and remained stable until 2 years. The authors concluded that chemonucleolysis with condoliase is an effective alternative treatment for LDH up to 2 years following treatment. These findings are limited by a small number of patients and short follow-up period, and further research that involves larger numbers of patients and longer follow-up is needed to validate these findings. Furthermore, the clinical outcomes were not compared with outcomes of conservative treatment or surgery.

Ishibashi et al. (2020) reviewed condoliase in 34 participants with low back and leg pain. Overall, 24 men and 10 women who were conservatively treated with medications and block therapy for at least 1 month and did not wish to undergo surgery were offered the condoliase injection. The NRS was conducted before the procedure and 3 months after. The straight leg raising test was also implemented prior to the procedure. MRI was performed 1 month before the procedure and again 1 month and 3 months afterward. The participants were divided into two groups: the good group, which contained an NRS score improvement of  $\geq 50\%$ , and the poor group, which contained those with a score of  $< 50\%$  improvement. The authors' analysis demonstrated that condoliase was more effective for leg pain vs LBP. It was concluded that the condoliase injection was safe and effective in those who had experienced no relief during conservative treatment. Limitations include a small sample size, imbalance of male-to-female ratio, and no long-term follow-up.

Okada et al. (2020) reviewed 82 individuals with LDH for the safety and efficacy of chemonucleolysis. The condoliase was injected into the intervertebral space and performed or supervised by a qualified orthopedic spine surgeon. The individuals were monitored closely for 3 hours following the injection and discharged the next day. All individuals were assessed with the VAS, and results were considered positive if the leg pain improved by 50% or more after 6 months. The authors found that 85% of the individuals had effective results with chemonucleolysis; surgical treatment was later required in four individuals due to the continued severe leg pain following the chemonucleolysis procedure. The study revealed favorable results in individuals with LDH following the chemonucleolysis procedure, but in the phase 3 clinical trial, the effective rate dropped to 72%. While the present study and phase 3 trial used the same criteria, possible explanations for the decrease in effectiveness included differences in demographic data, frequency of female individuals, mean age, and type of hernia. Limitations in the present study include a lack of RCT data and lack of long-term data.

Individuals with LDH are often treated conservatively, with surgery being the only therapeutic option available. Chiba et al. (2018) conducted a multicenter RCT at medical institutes in Japan to evaluate the effectiveness and safety of chemonucleolysis with condoliase in participants with LDH. Overall, 166 participants were randomized into one of two groups, either receiving the condoliase investigational drug or a placebo. The primary outcome was the change in leg pain, and this was measured by the VAS. The VAS was measured 1 week prior to the procedure and again at weeks 13, 26, 29, and 52. Approximately 10% of the participants dropped out of the study, and almost 10% of participants from each group underwent surgery following the study. On analysis of the VAS scores, the authors verified that the condoliase group had greater improvement in pain scores than the placebo group; thus, the condoliase group had significant clinical improvement. Limitations include the exclusion of participants with disc herniation that included sequestration and transligamentous extrusions for which condoliase may have been beneficial, lack of long-term follow-up in participants, and limited safety outcomes.

Houra et al. (2018) evaluated the safety and efficacy of percutaneous intervertebral disc chemonucleolysis for a herniated disc. Over a 30-month period, 29 participants in three medical centers who experienced failure of conservative treatment for radicular pain received radiopaque gelified ethanol under fluoroscopic guidance. Only one participant experienced complete pain relief following the injection procedure; 18 participants experienced 50% pain relief over a 6- to 12-month period. Four of the 29 participants had a surgical intervention due to complications of the injection procedure or lack of pain relief. The authors concluded that while the treatment was safe and easy to handle, the gelified ethanol did not appear to be any more effective than microsurgery. However, it did show a reduction in pain and disability, as measured by the verbal numeric scale and Roland-Morris LBP and disability questionnaire. Limitations include a small sample size with no control group.

A retrospective review on the efficacy of DiscoGel for symptomatic disc herniation was conducted by Marcia and colleagues (2018). Inclusion criteria for 71 patients consisted of 6 months or more of back pain and resistance to conservative treatment. An MRI was performed in all patients to confirm one or more disc herniations. Pain was evaluated by using the VAS, in addition to the functional ability score using the ODI; data were collected before the procedure and again at 12 months. All patients received local anesthesia, and with fluoroscopic guidance, 0.8 ml of DiscoGel was injected into the nucleus pulposus for lumbar discs, and 0.3 ml was injected for cervical discs. Most levels that were treated were at L4/L5 and/or L5/S1. The average median VAS prior to the procedure was 8, whereas after the procedure, the average was 3. The average ODI score prior to the procedure was 51 and afterward was 15. No significant difference between male and female patients was observed in terms of pain scores. The authors found that DiscoGel appeared to be a viable option for disc herniation; however, further prospective RCTs are warranted, along with a larger population.

Feng et al. (2017) completed a meta-analysis of RCTs that compared the clinical results of seven types of surgical interventions: percutaneous endoscopic lumbar discectomy (PELD), standard open discectomy, standard open microsurgical discectomy, chemonucleolysis, microendoscopic discectomy, percutaneous laser disc decompression, and automated percutaneous lumbar discectomy. The authors compared the success and complication rates of the procedures. From the seven procedures reviewed, PELD had the highest success rate, and automated percutaneous lumbar discectomy had the most complications, followed by chemonucleolysis. The authors concluded that PELD might be the best choice for disc herniation surgery due to the best success rate and lowest complication rate. Additional high-quality RCTs are needed to confirm these results.

Clinical trials for chemonucleolysis are ongoing and can be found at: <https://clinicaltrials.gov/ct2/home>. (Accessed August 19, 2025)

## **Epiduroscopy**

Results of earlier feasibility/observational studies suggest that epiduroscopy can aid in the visualization of the anatomy and pathology of spinal structures, particularly the cauda equina and epidural space. However, none of those studies evaluated the impact of epiduroscopy on clinical management or outcomes in individuals.

Geudeke et al. (2021) conducted a systematic review and meta-analysis to evaluate the effectiveness of epiduroscopy in individuals with failed back surgery syndrome (FBSS). Of the 286 articles identified in the PubMed, Embase, and Cochrane databases, nine studies were included. The VAS average was 7.6 at baseline, 4.5 at 6 months, and 4.3 at 12 months. The ODI average was 61.7% at baseline, 42.8% at 6 months, and 46.9% at 12 months. An average of 49% of individuals experienced significant pain relief at 6 months and 37% at 12 months. A meta-analysis showed a pooled VAS mean difference of 3.4 (95% CI, 2.6-4.1) and 2.8 (95% CI, 1.6-4.0) and a pooled ODI mean difference of 19.4% (95% CI, 12.5%-26.4%) and 19.8% (95% CI, 13.8%-25.9%) at 6 months and 12 months, respectively. The authors concluded that in individuals with FBSS, the current literature demonstrates a clinically relevant reduction in disability scores and pain at 6 to 12 months after mechanical adhesiolysis. The authors described the quality of evidence as moderate and the level of recommendation as weak and recommended that practitioners should weigh the benefits of epiduroscopy after considering the risk for individuals with FBSS. (Hazer et al., previously cited in this policy, is included in this systematic review and meta-analysis.)

A prospective observational study by Bosscher and Heavner (2014) evaluated the significance of diagnostic markers obtained through epiduroscopy by evaluating the accuracy of outcome prediction after treatment of epidural pathology using epiduroscopy. Of the 150 participants who underwent epiduroscopy in 2008 at a single US hospital, 139 were available for evaluation at 1 month. A prediction of outcome was made in 114 of 139 participants (82%). This prediction was correct in 89 of the 114 participants (accuracy of 78%). The sensitivity and specificity of epiduroscopy with respect to the prediction of outcome were 75% and 82%, respectively. The sensitivity and specificity of epiduroscopy in the diagnosis of epidural pathology were 91% and 39%, respectively. The authors concluded that lumbosacral epiduroscopy predicted the outcome of treatment accurately in the majority of participants. This suggests that information that is obtained through epiduroscopy may carry significant diagnostic and prognostic value.

Igarashi et al. (2004) conducted a study in 58 participants with degenerative lumbar spinal stenosis who were placed into a monosegmental or multisegmented group based on leg symptoms. All participants underwent epiduroscopy with an epidural injection of steroid or local anesthetic. The findings of epiduroscopy corresponded to the symptoms, and the study results demonstrated positive effects of epiduroscopy on LBP for up to 1 year in both groups. The study is limited by the lack of comparison group undergoing a different intervention.

## **Epidural Lysis of Adhesions**

Evidence in peer-reviewed literature that evaluates epidural lysis of adhesions (LOA) for the diagnosis and/or treatment of spinal disorders is limited. Future robust RCTs are warranted, along with long-term outcomes, to establish the safety and efficacy of this procedure.

Manchikanti et al. (2023) conducted a systematic review and meta-analysis of RCTs to evaluate the effectiveness of percutaneous adhesiolysis (PA) in treating low back and lower extremity pain. The review included nine trials, and the authors found that both the dual-arm and single-arm analyses demonstrated significant improvements in pain and function at 12 months for seven trials that reported 1-year outcomes. However, at the 6-month follow-up, they noted that one of the nine trials showed negative results. The review faced certain limitations, including a scarcity of available literature and the lack of placebo-controlled trials, despite notable differences in the active-controlled trials that used epidural injections as a control. The study by Gerdesmeyer et al. (2013) below is included in this review.

Kose and Akkaya (2023) conducted a retrospective review to (1) evaluate the effectiveness of PA in patients with chronic lumbar radicular pain that was unresponsive to epidural steroid injections and (2) identify potential predictive factors such as demographic, clinical, and procedural data to optimize treatment outcomes. The review included 193 patients, with successful treatment defined as a 50% reduction in VAS score. The authors reported that, among the 193 patients, 56% experienced a 50% or greater improvement in their VAS score at 12 months following the procedure. They concluded that their findings suggest that the PA procedure is an effective option for relieving pain in individuals with lumbar radicular pain who have not yet responded to conservative treatments, including epidural injections. However, several limitations should be acknowledged. First, since the regression analysis focused on predictive factors that influenced outcomes at 12 months, the ability to predict long-term success remains uncertain. Second, the study measured treatment success solely based on pain relief, and due to the absence of routine data collection, changes in pain medication use or functional disability could not be tracked. Third, like many retrospective studies, some patients were excluded due to missing data. Finally, it is important to note that this was a retrospective study without a control or sham group, which limits the ability to compare the procedure's outcomes.

Manchikanti et al. (2021) conducted a systematic review and meta-analysis on the role of percutaneous neurolysis in LDH. A search was conducted using the Cochrane Review rating system and Interventional Pain Management Techniques – Quality Appraisal of Reliability and Risk of Bias Assessment. A total of six trials (one high-quality RCT and five observational) were included in the review. The RCT from 2013 included 90 individuals; the other five studies between 2015 and 2019 included 1,821 individuals. Twelve-month results following the adhesiolysis/neurolysis procedure demonstrated five studies that displayed an improvement in NRS scores, with an average score of 2.013, which was statistically significant, and two studies that showed an improvement in ODI functionality scores, with an average score of 10.268 from a scale of 0 to 50. The authors did not find any significant side effects or complications. Limitations of this systematic review include a lack of multiple RCTs; additionally, the large-scale observational studies were of moderate quality.

Brito-García et al. (2019) assessed the efficacy, safety, effectiveness, and cost-effectiveness of epidural adhesiolysis for treating individuals with chronic pain that is attributed to FBSS in a systematic review of the literature. Of the studies that met the inclusion criteria, only two of them were RCTs, which included a total of 212 individuals; the other seven studies were observational. The authors assessed that although the results from both RCTs had a favorable outcome for adhesiolysis, there was a high risk of bias and serious methodology flaws in the studies, which included lack of blinding of individuals, informing the individuals of which treatment they had received, and a high dropout rate. The observational studies were of low quality and did not provide any data that indicated positive clinical development. The authors concluded that the evidence on the efficacy and safety of adhesiolysis is insufficient in individuals with FBSS and that further high-quality RCTs should be performed to assess the efficacy, effectiveness, and cost.

A Hayes report reviewed PA for chronic LBP. The evidence base comprised six RCTs (seven publications, including one study with a longer-term follow-up study) and groups of 50 to 120 individuals per study. The report concluded that a small body of low-quality evidence supports the use of PA for chronic LBP that is refractory to conservative treatment, including epidural steroid injections, given consistent findings of benefits in pain relief and function compared with sham PA and epidural steroid injections and a lack of serious complications in the evidence base. There is insufficient evidence that pertains to the comparison of adhesiolysis with physical therapy to draw definitive conclusions. However, it appears that in

many cases, the adhesiolysis procedure must be repeated more than once a year to maintain its benefits. While the evidence suggests potential short- and intermediate-term efficacy of this procedure in individuals with chronic LBP, whether epidural adhesions are the actual source of the pain in these individuals has been debated, and long-term outcomes remain to be determined in well-designed trials. The report concludes that there is potential but unproven benefit with this approach (Hayes, 2018; updated 2022). Rapčan et al. (2018) conducted a randomized, multicenter, double-blinded, parallel pilot study that compared the efficacy of drugs (the enzyme hyaluronidase and corticosteroid DEPO-Medrol) administered during epiduroscopy with standard treatment, focusing on releasing foraminal adhesions. Study participants (n = 48) with a diagnosis of chronic back surgery syndrome were randomized into two groups prior to epiduroscopy. Group A received mechanical lysis of fibrotic tissue in the epidural space (considered standard treatment), while group B received medications. Participants were followed up for 6 and 12 months via scheduled double-blinded examinations by pain physicians. Leg and back pain intensity was assessed by an 11-point NRS, and participants' functional disability was assessed by the ODI. Participants in both groups had a significant decrease in ODI score as well as significantly lower scores for leg and back pain in both groups at 6 months. However, the 1-year follow-up showed a return to the baseline ODI values of most monitored pain scores in both groups. Improvement was only noted on the NRS for back pain at 1 year. No significant difference between groups was observed. The authors concluded that while epiduroscopy with either standard treatment or drug therapy resulted in significant improvement of leg and back pain after 6 months, drug treatment was more durable in this study group.

Hong Park and Ho Lee (2017) conducted a prospective study in 78 participants with degenerative lumbar spinal stenosis to assess the relationship between improvement shown on epidurogram and subjective participant response after undergoing PA. Each participant underwent MRI of the lumbar spine, with all therapeutic procedures conducted in the operating room. Two weeks later, a second epidurogram was performed to assess any change in epidural filling defects. Outcome measures were obtained using the VAS score at 2, 4, and 12 weeks post treatment. All the participants had epidural filling defects at baseline. After PA, epidurographic filling defects were absent in 73% of participants. In the presence or absence of filling defects, mean VAS scores were 5.2 and 4.5 at 2 weeks, respectively. No significant correlation between postprocedural VAS score and status of filling defects (yes or no) at 3 months was observed. The authors' conclusion was that epidurographic findings following PA failed to correlate with the level of pain reduction achieved in participants with degenerative lumbar spinal stenosis.

A randomized, multicenter, double-blinded trial was conducted by Gerdesmeyer et al. [2013, included in the Manchikanti (2021) systematic review above] to analyze the clinical efficacy of percutaneous epidural LOA in chronic radicular pain. Of 381 participants with pain lasting longer than 4 months who did not respond to conservative treatments, 90 were enrolled. Participants were randomly assigned to receive either percutaneous neurolysis or placebo. The primary outcome measure was the differences in percent change of ODI scores 3 months post procedure. The secondary outcome measure was difference in percent change of ODI scores and VAS scores. The ODI and VAS scores as well as the success rates for ODI vs VAS were significantly better at 3, 6, and 12 months in the lysis group vs the control group. The ODI in the lysis group improved from 55.3 to 26.4 after 3 months. The placebo group improved from 55.4 to 41.8. The VAS improved from 6.7 to 2.9 in the active group and from 6.7 to 4.8 after placebo. The 12-month follow-up showed further improvement, with the differences remaining significant. A limitation of the study noted by the authors is that the specific effects of single treatment components cannot be specified because there was no imaging examination after treatment. Gerdesmeyer et al. (2021) performed a 10-year follow-up study and found that pain ratings in the treatment group were lower than ratings in the placebo group. The statistical difference of the ODI and VAS between the treatment and control groups remained significant up to 10 years. Minor transient neurological effects were seen directly after the intervention, but no treatment-related severe adverse effects occurred within the 10 years. The authors concluded that the efficacy of the minimally invasive PA procedure in participants with chronic lumbosacral radicular pain was significant. Limitations noted by the authors include that (1) the long-term effects of single treatment components cannot be specified, as no imaging examination was performed at the 10-year follow-up; (2) a large variety of unanalyzed, noninvasive treatments were performed within the 10 years; and (3) some participants did not clearly remember the intervention after 10 years. Additionally, uncontrolled effects such as higher inhomogeneity of biometric properties, concomitant therapies, pain tolerance level, or social effects could have occurred but were not analyzed in the trial. A significant percentage of participants were lost to follow-up, but the percentage of these participants was balanced and similar in both groups.

In 2013, Helm et al. published a systematic review that evaluated and updated the effectiveness of spinal endoscopic adhesiolysis in treating post-lumbar surgery syndrome. Of the 21 studies identified, only four met inclusion criteria (one RCT and three observational studies). Pain relief and functional improvement were the primary outcome measures. Other outcome measures were improvement of psychological status, opioid intake, and return to work. Short-term effectiveness was defined as an improvement of 12 months or less, and long-term efficacy was 12 months or more. Using United States Preventive Services Task Force criteria, the authors concluded that the evidence is fair that endoscopic adhesiolysis is effective in treating chronic low back and/or lower extremity pain caused by post-lumbar surgery syndrome and should be considered low risk for serious adverse complications. Limitations of this study include the paucity of literature. There are

also noted conflicts of interest with several of the researchers, which may limit the conclusions that can be drawn from the study. In an update conducted 3 years later by Helm and associates (2016), the researchers evaluated the efficacy of PA and spinal endoscopic adhesiolysis in the treatment of chronic refractory low back and lower extremity pain. In this systematic review, 45 studies were identified. Of these, seven RCTs and three observational studies on PA met the inclusion criteria. For spinal endoscopy, there was one RCT and three observational studies. The primary outcome measures were pain relief of at least 50% and functional improvement of at least 40%. Short-term efficacy was defined as an improvement of 6 months or less, and long-term efficacy was more than 6 months. The researchers concluded that PA to treat refractory low back and lower extremity pain is safe and effective; this is supported by multiple RCTs. However, endoscopic adhesiolysis is a technique that has limited evidence to support its use. Additional studies regarding this technology are in progress. Conflicts of interest are again cited for several of the researchers, which may limit the study's conclusions.

Clinical trials that are studying epiduroscopy and epidural LOA for LBP are open. No trials that are studying these procedures for cervical spine conditions have been identified. For more information, go to: <http://www.clinicaltrials.gov>. (Accessed August 19, 2025)

### ***Clinical Practice Guidelines***

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

In guidelines (Eck et al., 2014) regarding the use of discography in the evaluation of LBP prior to surgery, a joint committee of the AANS/CNS stated the following:

- Based primarily on retrospective studies, discography as a stand-alone test is not recommended to formulate treatment strategies for patients with LBP with abnormal imaging findings.
- A single randomized cohort study demonstrated an improved potential of discoblock over discography as a predictor of success following lumbar fusion. Therefore, discoblock should be considered as a diagnostic option during the evaluation of a patient presenting with chronic LBP.
- There is a possibility that an association exists between progression of DDD and the performance of a provocative discogram. Therefore, it is recommended that patients be counseled regarding this potential development prior to undergoing discography.

#### **American College of Radiology (ACR)**

In the 2021 updated appropriateness criteria for patients with LBP, the ACR states that there is no relevant literature to support the use of discography for the following conditions:

- Acute uncomplicated LBP.
- Evaluation of subacute or chronic LBP without red flags or prior management.
- Initial imaging of suspected cauda equina syndrome.
- Evaluation of new or progressing symptoms in patients with previous lumbar surgery.
- Initial imaging for LBP with or without radiculopathy for one or more of the following:
  - Low-velocity trauma, osteoporosis, older individual, or chronic steroid use.
  - Suspicion of cancer, infection, or immunosuppression.

#### **American Society of Interventional Pain Physicians (ASIPP)**

The Comprehensive Evidence-Based Guidelines for Interventional Techniques in Chronic Spinal Pain offers the following recommendations:

- Lumbar provocation discography is recommended with appropriate indications in patients with LBP to prove the diagnostic hypothesis of the discogenic pain specifically after exclusion of other sources of lumbar pain, only when a treatment is available.
- Cervical discography is indicated only when a treatment is available to test the diagnostic hypothesis of discogenic pain of the cervical spine in patients who have been properly selected and screened to eliminate other sources of cervical pain.
- Thoracic discography can be performed to diagnose thoracic discogenic disease if the indication is appropriate and a treatment is available.
- PA is recommended in patients with post lumbar surgery syndrome and lumbar central spinal stenosis after failure of conservative management of physical therapy, chiropractic treatment, drug therapy, structured exercise program, and fluoroscopically directed epidural injections.

There are no recommendations for functional anesthetic discography. The use of anesthetic discography has generated significant interest as a means to reduce the high false-positive rates associated with provocation discography in certain

patient subgroups. The ability of anesthetic discography used as either an adjunct or replacement for provocation discography, to enhance the accuracy of diagnosis, is mixed (Manchikanti et al., 2013).

In a 2018 systemic appraisal of the accuracy and utility of discography for chronic spinal pain, the ASIPP states that PD performed according to the International Association for the Study of Pain (IASP criteria) may be a useful tool for evaluating chronic lumbar discogenic pain. (Manchikanti et al., 2018).

## National Institute for Health and Care Excellence (NICE)

A 2010 statement concluded that the current evidence on therapeutic endoscopic division of epidural adhesions is limited to evidence of short-term efficacy, and there are significant safety concerns. Therefore, this procedure should only be used with special arrangements for clinical governance, consent and audit or research. Further research on this procedure should clearly describe case selection. Outcomes should include pain relief, duration of effectiveness and whether other treatments are subsequently required.

## 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.

Products such as endoscopes, catheters, and needles that can be used for epidural LOA are numerous. Refer to the following website for more information and search by product name in the device name section:

<http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfPMN/pmnm.cfm>. (Accessed August 19, 2025)

Products that are intended to help diagnose the cause of chronic LBP are numerous. Refer to the following website for more information and search by product name in the device name section:

<http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfPMN/pmnm.cfm>. (Accessed August 19, 2025)

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## Policy History/Revision Information

Date	Summary of Changes
03/01/2026	<p><b>Related Policies</b></p> <ul style="list-style-type: none"><li>Removed reference link to the Medical Policy titled:<ul style="list-style-type: none"><li><i>Interspinous Fusion and Decompression Devices (for Pennsylvania Only)</i></li><li><i>Spinal Fusion and Decompression (for Pennsylvania Only)</i></li></ul></li></ul> <p><b>Supporting Information</b></p> <ul style="list-style-type: none"><li>Updated <i>Description of Services</i>, <i>Clinical Evidence</i>, and <i>References</i> sections to reflect the most current information</li><li>Archived previous policy version CS040PA.N</li></ul>

## Instructions for Use

This Medical Policy provides assistance in interpreting UnitedHealthcare standard benefit plans. When deciding coverage, the federal, state or contractual requirements for benefit plan coverage must be referenced as the terms of the federal, state or contractual requirements for benefit plan coverage may differ from the standard benefit plan. In the event of a conflict, the federal, state or contractual requirements for benefit plan coverage govern. Before using this policy, check the federal, state or contractual requirements for benefit plan coverage. UnitedHealthcare reserves the right to modify its Policies and Guidelines as necessary. This Medical Policy is provided for informational purposes. It does not constitute medical advice.

UnitedHealthcare may also use tools developed by third parties, such as the InterQual® criteria, to assist us in administering health benefits. The UnitedHealthcare Medical Policies are intended to be used in connection with the independent professional medical judgment of a qualified health care provider and do not constitute the practice of medicine or medical advice.