Policy Statement

The determination of medical necessity for the use of discography is always made on a case-by-case basis.

Lumbar discography may be considered medically necessary in carefully selected patients when all of the following criteria have been met:

- Persistent, severe low back pain of at least one-year duration
- Prior non-invasive diagnostic imaging studies (e.g., computed tomography [CT] scan or magnetic resonance imaging [MRI] scan) have failed to clearly confirm a suspected disc as the source of pain
- Documented imaging study (e.g., MRI) results within the past 12 months demonstrate at least one abnormal disc as well as one or more normal discs to allow for an internal control injection
- Documented failure of adequate trials of physician-supervised conservative treatments (e.g., physical therapy [active and passive modalities], back education, active home exercise program, non-steroidal anti-inflammatory or steroidal medication, activity or lifestyle modification etc.)
- Highly suspected discogenic pain with pain severe enough to consider invasive surgical intervention (e.g., spinal fusion, disc replacement)
- Patient does not have an active psychological diagnosis or disturbance or psychosocial issues that would substantially reduce the reliability of the test or increase the likelihood of adverse outcomes

Lumbar discography is considered not medically necessary in any of the following situations:

- In patients who demonstrate unstable vertebral fractures, spinal dislocations or where surgery is being performed for tumor, infection (osteomyelitis and/or discitis), or other disease processes that have led to lumbar instability
- In patients who have undergone lumbar discography within the last 12 months
- In patients who have previously undergone spinal fusion or discectomy when considering performing the procedure at the prior surgical level

The following procedures are not medically necessary for any indication:

- Cervical discography
- Thoracic discography
- Functional anesthetic discography (FAD)

Policy Guidelines

Coding

The CPT codes for the procedure (injection) (e.g., 62290) can be billed with the radiological supervision and interpretation CPT codes (e.g., 72295).

Fluoroscopic guidance is included in the procedure and radiological supervision and interpretation CPT codes 62290, 62291, 62292, 72285, and 72295. It is inappropriate for either the physician performing the injection or the physician performing radiological supervision and interpretation to additionally code the fluoroscopic guidance (e.g., 77003).

Description

Discography, also known as provocative discography, stimulation discography, or nucleography, is an invasive diagnostic test used to determine if an intervertebral disc is the
source of a patient's back pain. Using fluoroscopic guidance, a small amount of iodinated contrast medium is injected into the center of the disc. Computed tomography (CT) is usually performed after discography to evaluate the nature and extent of vertebral disc abnormality, if any. More recently, functional anesthetic discography, involving injection of anesthetic directly into the disc, has been introduced.

Discography is an option when non-invasive studies fail to provide an accurate diagnosis of the nature and location of the problem and when surgical intervention is being considered.

**Related Policies**

- N/A

**Benefit Application**

Benefit determinations should be based in all cases on the applicable contract language. To the extent there are any conflicts between these guidelines and the contract language, the contract language will control. Please refer to the member’s contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

Some state or federal mandates [e.g., Federal Employee Program (FEP)] prohibits plans from denying Food and Drug Administration (FDA)-approved technologies as investigational. In these instances, plans may have to consider the coverage eligibility of FDA-approved technologies on the basis of medical necessity alone.

**Rationale**

**Literature Review**

**Lumbar Discography**

Low back pain occurs in approximately 80% of the general population, often interfering with work, routine daily activities, and recreation (Hayes Inc., 2014 [update]). Men and women are equally affected. Americans spend at least $50 billion each year on low back pain. It is the most common cause of job-related disability and a leading contributor to missed work, occurring in 15% to 20% of the working-age population (Hayes Inc., 2010). Discogenic back pain or lumbar disc pain due to degeneration of the lumbar intervertebral discs is thought to be the most prevalent cause of low back pain. Discogenic pain is characterized by chronic and disabling pain in the low back and, often, lesser pain in the groin and legs. Surgical treatment of discogenic pain includes invasive techniques of disc excision, spinal fusion, and artificial disc replacement or other minimally invasive techniques of annuloplasty, targeted disc decompression, and nucleoplasty.

Since discography is invasive, it is performed only after computed tomography (CT) scan and magnetic resonance imaging (MRI) with myelography have failed to isolate the cause of back pain. In addition, discography is usually directed towards patients who have chronic pain unrelieved from conservative treatments (e.g., physical therapy, medications, and modified activities) and when surgical intervention is being considered. While imaging may reveal abnormalities of the disc (e.g., disc degeneration or internal disc disruption); it does not prove that the abnormal disc is the source of pain. Although lumbar disc degeneration is part of the normal aging process, the vast majority of degenerative discs cause no symptoms while others cause significant pain. Lumbar discography involves an intradiscal radiographical evaluation of the integrity of the nucleus pulposus and annular rings to identify tears or other lesions. The procedure is performed under fluoroscopic guidance involving inserting a needle into the center of the intervertebral disc, injecting contrast through the needle, evaluating any pain caused by the injection, and imaging the pattern of the contrast spread into the tested disc. After the
contrast injection, the patient is questioned about the presence, location, severity and familiarity of pain. Pain severity is measured through a pain scale. If pain provocation produces similar or precisely the same as the patient's typical pain, the disc is examined fluoroscopically to identify internal disc disruption by the pattern of contrast spread. A test is considered positive if the pain produced is consistent with the patient's typical pain in a disc with annular fissures and pain has not been aggravated in a control disc. The procedure is repeated for each suspected and control disc.

The usefulness of discography remains an area of controversy. The North American Spine Society published a comprehensive review of the literature on lumbar discography as a diagnostic procedure (Guyer & Ohnmeiss, 2003). The authors found that most of the recent literature supported the use of discography in selected situations. Indications for discography included, but were not limited to:

- Further evaluation of demonstrably abnormal discs to help assess the extent of abnormality or correlation of the abnormality with the clinical symptoms. Such symptoms may include recurrent pain from a previously operated disc and lateral disc herniation.
- Patients with persistent, severe symptoms in whom other diagnostic tests have failed to reveal clear confirmation of a suspected disc as the source of pain.
- Assessment of patients who have failed to respond to surgical intervention to determine if there is painful pseudoarthrosis or a symptomatic disc in a posteriorly fused segment and to help evaluate possible recurrent disc herniation.
- Assessment of discs before fusion to determine if the discs within the proposed fusion segment are symptomatic and to determine if discs adjacent to this segment are normal.
- Assessment of candidates for minimally invasive surgical intervention to confirm a contained disc herniation or to investigate dye distribution patterns before chemonucleolysis or percutaneous procedures.

Cohen et al. (2005) addressed the controversy surrounding discography conducting a Medline search of the literature from 1951 through September 2004. The authors found few studies comparing surgical outcomes between patients who had preoperative discography and those who did not. A comparison of outcomes did not reveal any significant difference between the two groups. In general, none of the studies were controlled, different outcome measures were used, follow-up studies were not consistent, and surgical techniques were not the same. The authors concluded discography combined with CT scanning may be more accurate than other radiologic studies in detecting degenerative disc disease. However, the ability of discography to improve surgical outcomes had not been proven.

The American Association of Neurological Surgeons (AANS) published a guideline for the performance of fusion procedures due to degenerative disease of the lumbar spine (Resnick et al., 2005). This guideline recommended that an MRI should be performed for the initial evaluation of low back pain. However, discography should not be attempted in patients with normal MRI-imaged discs. The AANS acknowledged the role of discography in the evaluation of individuals with back low back pain in the following situations:

- Abnormal interspaces on MRI
- In the investigation of adjacent level disc disease
- As a means to rule out non-organic pain from surgical intervention

Additionally, no professional guideline, including the AANS, recommended discography as a stand-alone test for which treatment decisions were made.

The American College of Radiology (ACR) also published clinical guidelines for the performance of radiological imaging for the evaluation of low back pain (Bradley et al., 2005; Daffner et al., 2005). Their position stated that uncomplicated low back pain was a self-limiting condition and did not warrant any imaging studies. Indications of a more complicated status (e.g., recent significant trauma, prolonged use of corticosteroids, osteoporosis, etc.) require specific
radiographic studies. The committee stated that discography carried additional risk not warranted in view of the efficacy of other less invasive imaging procedures. When other studies failed to localize the cause of pain, discography may occasionally be helpful. Although the images often depict non-specific aging or degenerative changes, the injection itself may reproduce the patient's pain, which may have diagnostic value. The ACR Appropriateness Criteria were updated in 2011 and their position regarding discography for low back pain remained unchanged from the 2005 guidelines (Daffner et al., 2005).

A systematic review of discography as a diagnostic test for spinal pain was conducted by Buenaventura and colleagues in 2007. The authors found the evidence was strong for the diagnostic accuracy of discography as an imaging tool and the ability of discography to evoke pain. Stronger evidence supported the role of discography in identifying that subset of patients with lumbar discogenic pain.

On the contrary, new guidelines published by the American Pain Society for the management of low back pain (Chou et al., 2009) specifically advised that provocative discography was not recommended for diagnosis in patients with chronic, non-radicular back pain.

The International Society of Interventional Pain Physicians (ISIPP) published guidelines for interventional techniques for chronic spinal pain (Manchikanti et al., 2009 [update]; Boswell et al., 2005 [update]; Boswell et al., 2007 [update]; Manchikanti et al., 2013 [update]). The authors review rated evidence (Level II-2) for lumbar provocation discography. Additionally, the authors advised:

The recommendations for lumbar provocation discography included “appropriate indications with patients with low back pain to prove the diagnostic hypotheses of the discogenic pain specifically after exclusion of other sources of lumbar pain and identification of the disc that should be targeted for treatment, or to establish that no disc or too many discs are symptomatic, in which case surgery may not be indicated.

False-Positive Results

A major concern surrounding discography is the rate of false-positive results in normal discs and asymptomatic individuals. Carragee and colleagues (2000) in an experimental setting evaluated the relative pain response and pain-related behavior in selected subjects without a history of low back pain undergoing lumbar discography. Twenty-six individuals, mean age 43 years, with no history of low back pain underwent lumbar discography. Of these individuals, ten were pain-free; ten had chronic neck and arm pain, but no low back symptoms; and six had primary somatization disorders without low back symptoms. The authors found that significant positive pain response and pain-related behavior with discography was found in 10% of the pain-free group, in 40% of the chronic cervical pain group, and in 83% of the somatization disorder group. Twenty-four subjects had negative control discs. The authors also stated that discs with annular disruption were more likely to be painful on injection, particularly in those individuals with ongoing compensation issues, chronic pain, or abnormal psychological testing. In addition, symptomatic individuals with abnormal psychological profiles had significantly higher rates (70%) of positive disc injection than either asymptomatic individuals or symptomatic subjects with normal psychological testing.

In contrast, Manchikanti and colleagues (2001) performed a randomized prospective study of a group of 50 individuals with low back pain (25 with and without somatization disorder) and concluded provocative discography provided similar results in individuals with or without somatization disorder. The authors reported positive provocative discography results in 46% of participants in the somatization group compared to 54% in the non-somatization group.

Wichman (2007) stated modern advancements with imaging and technique still had not been sufficient to justify the practicality of discography for standard use. Based on review of the literature, the authors advised that pain provoked by discography of normal appearing discs was likely due to increased pain sensitivity, false positive results, and technical difficulty with the
procedure. No clear evidence-based rationale was found for discography in the diagnosis and treatment of low back pain.

More recently, false-positive rates have been studied using pressure-controlled injection including refining the criteria for positive discography. The injection needle is fitted with a pressure-monitoring system and records injection pressure in pounds per square inch (psi) when contrast first enters the disc (opening pressure) and when the injection provokes pain. A calculation is performed by subtracting the measured pressure from the opening pressure.

In a study by Carragee et al. (2006), the hypothesis that false-positive injections during discography could be eliminated by defining the injection criteria to include only those discs in which pain was produced with low-pressure injections, was tested. The authors found that with low-pressure injections, patients without chronic low back pain still experienced pain approximately 25% of the time.

A Hayes Inc. (2010) technology assessment examined data from eight studies involving 825 individuals with or without chronic severe low back pain. The data indicated that lumbar discography for identifying pain-producing discs was associated with high false-positive rates in up to 38% in groups and up to 83% in subgroups without chronic low back pain. However, these rates could be minimized and reduced up to less than or equal to 10% when using pressure-controlled injection and classifying positive and negative results by applying thresholds for pain intensity and injection pressure. Hayes Inc. (2010) also examined data on false-positive discs in a meta-analysis using some of the same studies used in the technology assessment. The researchers found that when pressure-controlled injection and strict classification of results were incorporated; the false-positive rate was reduced to less than or equal to 10%.

Cervical and Thoracic Discography

Although some studies show that discography may be useful in the evaluation of patients with low back pain; the efficacy of discography for the evaluation of cervical or thoracic pain has not been established. Shah et al. (2005) conducted a systematic review of the literature to assess the quality of clinical studies evaluating the diagnostic accuracy of discography in the lumbar, thoracic, and cervical spine. Overall, the researchers found that discography is a useful imaging tool in identifying patients with chronic lumbar pain due to intervertebral disc disorders. However, the review did find that there was moderate evidence supporting the role of discography in identifying a subset of patients with cervical or thoracic discogenic pain.

Cervical Discography

The ACR (Daffner et al., 2005) recommended that patients with chronic neck pain should initially undergo a three-view (anteroposterior, lateral, and open mouth) radiographic examination. Cervical discography was not recommended in this evaluation. More recently, the ACR Appropriateness Criteria (2010) rated x-ray discography of the cervical spine as a 1 (a rating of 1, 2, 3, being “usually not appropriate”).

Similarly, Boswell et al. (2007) conducted a comprehensive review of the literature and found limited evidence supporting the use of cervical and thoracic discography.

Manchikanti and colleagues (2009) conducted a systematic review evaluating cervical discography and indicated that despite a paucity of evidence-based literature and discrepancies between studies, the diagnostic accuracy of cervical discography had moderated predictive value based on modified United States Preventive Services Task Force (USPSTF) criteria. However, these conclusions were based on Level II-2 evidence (evidence obtained from at least one properly designed small diagnostic accuracy study).

The Bone and Joint Decade 2000-2010 Task Force on Neck Pain and its Associated Disorders concluded that there was no evidence to support using cervical provocative discography or anesthetic facet or nerve blocks (Nordin et al., 2008).
Thoracic Discography

In a systematic review by Buenaventura et al. (2007), the authors advised there was limited evidence supporting the role of discography in identifying a subset of patients with thoracic discogenic pain.

A systematic review of thoracic discography as a diagnostic test for chronic spinal pain was conducted by Sing and colleagues in 2008. The authors provided a “weak recommendation” of the clinical value of thoracic provocation discography due to the “low quality or very low-quality evidence indicating that other alternatives may be equally reasonable.” The ISIPP guidelines (Manchikanti et al., 2003; Boswell et al., 2005 [update]; Boswell et al., 2007 [update]; Manchikanti et al., 2009 [update]) for interventional techniques reported that the evidence supporting thoracic discography was limited and very few authors have studied the procedure. The evidence reviewed for these guidelines was rated a Level II-3 (evidence obtained diagnostic studies of uncertainty).

Functional Anesthetic Discography

Functional anesthetic discography (FAD), is a new method of analgesic discography (AD) and is designed to diagnose and potentially treat low back pain caused by degenerative disc disease (FDA, 2005). While provocative discography attempts to confirm the disc as a pain source by reproducing the patient's usual symptoms, AD or FAD attempts to relieve those symptoms. Analgesic discography can be used alone or in combination. Functional anesthetic discography is a combination of analgesic discography and functional testing (Thiyagarajah, 2012). Functional anesthetic discography involves the injection of an anesthetic (lidocaine or bupivacaine) directly into one or more spinal discs using a balloon anchored catheter. After recovering from light sedation, the patient then performs activities that typically generate pain. A reduction in pain is considered diagnostic. Other causes of pain are investigated if the procedure does not resolve the pain.

Alamin et al. (2011) compared the results of standard pressure-controlled provocative discography to those of the FAD in a series of patients presenting with chronic low back pain and considering surgical treatment. Discordant results of the two tests were noted in 46% of the patients in the series. Of them, 26% of patients with positive provocative discography had negative findings on the FAD test; 16% had positive findings at a single level only, whereas the provocative discogram had been positive at two or more levels; 4% had new positive findings on the FAD test. The authors concluded that the findings of the test differed from those of standard pressure-controlled provocative discography in 46% of the cases reported. Additionally, further studies were needed to demonstrate the clinical utility of the test.

There is ongoing investigation of the use of FAD for diagnosing discogenic pain; however, there is insufficient evidence in published, peer-reviewed literature to support the safety and efficacy of FAD at this time.

Medicare National Coverage

There is no national coverage determination (NCD). In the absence of an NCD, coverage decisions are left to the discretion of local Medicare carriers.

References


**Documentation for Clinical Review**

*Please provide the following documentation (if/when requested):*

- History and physical and/or consultation report(s) including:
  - Duration of back pain, frequency, severity and symptoms
  - Non-invasive diagnostic imaging study results
  - Physician-supervised conservative treatment(s) including type, duration and response
  - Previous discography, including location/level and response(s) (if applicable)
  - Treatment plan (i.e., surgical intervention)
- Diagnostic radiology reports (e.g., MRI)

**Post Service**

- Procedure report(s)

**Coding**

This Policy relates only to the services or supplies described herein. Benefits may vary according to product design; therefore, contract language should be reviewed before applying the terms of the Policy. Inclusion or exclusion of codes does not constitute or imply member coverage or provider reimbursement.

**MN/NMN**

*The following services may be considered medically necessary when policy criteria are met. Services may be considered not medically necessary when policy criteria are not met.*

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<th>Code</th>
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<td>Injection procedure for discography, each level; cervical or thoracic</td>
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<td>Injection procedure for chemonucelolyis, including discography, intervertebral disc, single or multiple levels, lumbar</td>
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<td>Discography, cervical or thoracic, radiological supervision and interpretation</td>
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**Policy History**

This section provides a chronological history of the activities, updates and changes that have occurred with this Medical Policy.

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**Definitions of Decision Determinations**

**Medically Necessary:** A treatment, procedure, or drug is medically necessary only when it has been established as safe and effective for the particular symptoms or diagnosis, is not investigational or experimental, is not being provided primarily for the convenience of the patient or the provider, and is provided at the most appropriate level to treat the condition.

**Investigational/Experimental:** A treatment, procedure, or drug is investigational when it has not been recognized as safe and effective for use in treating the particular condition in accordance with generally accepted professional medical standards. This includes services where approval by the federal or state governmental is required prior to use, but has not yet been granted.

**Split Evaluation:** Blue Shield of California/Blue Shield of California Life & Health Insurance Company (Blue Shield) policy review can result in a split evaluation, where a treatment, procedure, or drug will be considered to be investigational for certain indications or conditions, but will be deemed safe and effective for other indications or conditions, and therefore potentially medically necessary in those instances.
## Prior Authorization Requirements (as applicable to your plan)

Within five days before the actual date of service, the provider must confirm with Blue Shield that the member's health plan coverage is still in effect. Blue Shield reserves the right to revoke an authorization prior to services being rendered based on cancellation of the member's eligibility. Final determination of benefits will be made after review of the claim for limitations or exclusions.

Questions regarding the applicability of this policy should be directed to the Prior Authorization Department. Please call (800) 541-6652 or visit the provider portal at [www.blueshieldca.com/provider](http://www.blueshieldca.com/provider).

Disclaimer: This medical policy is a guide in evaluating the medical necessity of a particular service or treatment. Blue Shield of California may consider published peer-reviewed scientific literature, national guidelines, and local standards of practice in developing its medical policy. Federal and state law, as well as contract language, including definitions and specific contract provisions/exclusions, take precedence over medical policy and must be considered first in determining covered services. Member contracts may differ in their benefits. Blue Shield reserves the right to review and update policies as appropriate.