

<b>MEDICAL POLICY</b>		<b>Back: Discography</b>	
<b>Effective Date: 6/1/2020</b>		<b>Section: SUR</b>	<b>Policy No.: 121</b>
 6/1/2020		Medical Policy Committee Approved Date: 8/96; 8/97; 4/98; 9/98; 5/99; 4/00; 4/01; 4/02; 5/03; 4/04; 3/05; 9/05; 11/06; 11/08; 8/10; 11/12; 9/13; 11/15; 2/17; 3/19; 3/2020, 5/2020	
Medical Officer	Date		

**See Policy CPT CODE section below for any prior authorization requirements**

**SCOPE:**

Providence Health Plan, Providence Health Assurance, Providence Plan Partners, and Ayin Health Solutions as applicable (referred to individually as “Company” and collectively as “Companies”).

**APPLIES TO:**

All lines of business

**BENEFIT APPLICATION**

Medicaid Members

*Oregon:* Services requested for Oregon Health Plan (OHP) members follow the OHP Prioritized List and Oregon Administrative Rules (OARs) as the primary resource for coverage determinations. Medical policy criteria below may be applied when there are no criteria available in the OARs and the OHP Prioritized List.

**POLICY CRITERIA**

Discography is considered **investigational and is not covered** for all indications, including, but not limited to use as a diagnostic procedure for determining the need for spinal fusion.

**CPT CODES**

All Lines of Business	
Not Covered	
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

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72285	Discography, cervical or thoracic, radiological supervision and interpretation
72295	Discography, lumbar, radiological supervision and interpretation

**DESCRIPTION**

Discography is an invasive diagnostic imaging technique, “that combines imaging and pain provocation as a method of diagnosing discogenic pain. The primary purpose of discography is to determine whether the disc tested is the source of the patient’s usual pain and whether the patient might benefit from surgical intervention.”<sup>1</sup>

According to the American Academy of Orthopedic Surgeons (AAOS), “The key components of discography that aid in the diagnosis of patients with low back pain include a reproduction of the patient's concordant pain, visualization of the disc morphology, and injection pressures. If each of these factors is found to suggest symptomatic disc degeneration, the test is considered to be positive. By recreating the patient's pain, proponents of discography argue that it is more sensitive and specific than other imaging modalities, including plain radiographs, myelography, and MRI, which are known to identify both symptomatic and asymptomatic abnormalities. However, critics question the reliability and specificity of discography since concordant pain has been suggested to originate from non-spine sources and can be reproduced in patients without any prior history of back pain.”<sup>2</sup>

**REVIEW OF EVIDENCE**

A review of the ECRI, Hayes, Cochrane, and PubMed databases was conducted regarding the use of discography. Below is a summary of the available evidence identified through March 2020.

All Spinal Levels

In 2018, Manchikanti and colleagues published a systematic review evaluating the diagnostic accuracy of lumbar, cervical and thoracic provocation and analgesic discography.<sup>3</sup> Independent reviewers searched appropriate databases through June 2017, systematically identified eligible studies, assessed quality and extracted data. Participants of interest were adults 18 years of age or older with chronic spinal pain lasting at least three months. The primary outcomes of interest were pain provocation and/or pain relief with analgesic discography.

Eight studies met inclusion criteria for diagnostic accuracy – 5 studies assessing lumbar provocation discography and 3 studies assessing cervical discography. Sample sizes in included studies ranged from 56 to 318. The longest reported follow-up was 3 years. Investigators noted that results appeared to be the same as those that appeared in the same authors’ previous systematic reviews, discussed below.<sup>4-6</sup> Reviewers stated that positive results from studies evaluating discography are undermined due to “lack of standardization, limitations in technique, the paucity of studies evaluating outcomes, and various reports contradicting the diagnostic accuracy of discography.”<sup>3</sup> Investigators concluded that evidence for the use of discography at any site remains limited.

### Cervical Spine

In October 2017 (archived 2018), Hayes conducted a search and summary regarding the use of discography for evaluating neck pain.<sup>7</sup> Although sufficient evidence was identified to evaluate discography as a diagnostic tool in assessing cervical disc pain, Hayes indicated, “(t)he study abstracts present conflicting findings regarding the accuracy of cervical discography as a diagnostic tool for detecting neck pain.”

In 2012, Onyewu and colleagues published a systematic review regarding the accuracy and utility of cervical discography in patients with chronic neck pain.<sup>8</sup> A total of 41 studies were included in the review. Twenty-three studies evaluated accuracy and 3 studies examined accuracy and prevalence of cervical discogenic pain, with a prevalence ranging from 16-53%. Utilizing Agency for Healthcare Research and Quality (AHRQ) accuracy evaluation and United States Preventive Services Task Force (USPSTF) level of evidence criteria the overall evidence regarding the diagnostic accuracy of cervical discography was rated as limited.

No new, well-designed clinical trials were identified regarding the validity and utility of cervical discography since the publication of the Onyewu systematic review by noted above.

### Thoracic Spine

In October of 2017 (archived 2018), Hayes published a search and summary regarding the use of discography as a diagnostic test for thoracic back pain and concluded, “(t)here was insufficient published evidence to assess the safety and/or impact on health outcomes of thoracic discography as a diagnostic test for thoracic back pain.”<sup>9</sup> The search yielded 8 abstracts of poor quality and small sample size.

In 2012, Singh and colleagues evaluated the accuracy of thoracic discography and found only 2 studies which met eligibility criteria.<sup>10</sup> USPSTF level of evidence rating criteria was used and thoracic discography was rated as poor based on the paucity of available evidence.

No new, well-designed clinical trials were identified regarding the validity and utility of thoracic discography since the publication of the Singh systematic review by noted above.

### Lumbar Spine

#### *Systematic Reviews*

- In 2017 (updated 2019), Hayes published a systematic review regarding the use of discography to diagnose and assess low back pain.<sup>1</sup> Seven studies were identified for inclusion (1 randomized trial and 6 non-randomized studies). Four studies compared discography to no discography prior to surgery, 2 studies compared surgical management vs. conservative care in patients who all underwent discography, and one study compared surgeon decision-making. Study follow-up varied from 6 months to 6 years. Overall, the Hayes review concluded the evidence was small and of low-quality and indicated discography, “does not lead to improved health outcomes in patients with low back pain being considered for surgery.” In addition the Hayes review noted, “(t)wo studies suggest that discography can lead to serious complications in the long term, including accelerated disc degeneration and increased likelihood of lumbar surgery. No studies that met the inclusion criteria

were identified that compared lumbar discography with alternate approaches for identifying disc pathology (i.e., anesthetic discography or functional anesthetic discography).” Limitations of available evidence included a lack of randomization, short duration of reported pain or lack of pain reporting, small sample sizes, and/or lack of power analysis, and high loss to follow-up. Hayes assigned a **D1 rating** to discography in adult patients with chronic low back pain who are being considered for surgery which reflects paucity and low-quality of evidence regarding the clinical utility of discography as a diagnostic tool.

- In 2013, Manchikanti and colleagues published a systematic review of evidence regarding the accuracy of lumbar discography which served as the basis for the 2013 American Society of Interventional Pain Physicians (ASIPP) guideline recommendations.<sup>4-6</sup> Of the 160 studies evaluated, 33 compared discography with other diagnostic tests, 30 assessed accuracy, 22 assessed surgical outcomes for pain, and 3 assessed the prevalence of lumbar discogenic pain. Despite the fair rating prescribed to the quality of evidence for each of these categories, results appeared to mostly be mixed. For example, 8 of the 30 studies evaluated did not support the diagnostic accuracy of testing, indicating a high rate of false positive results or suggested the accuracy of testing was questionable. Only 13 of 33 studies demonstrated good correlation with discography and other non-invasive diagnostic techniques. Authors noted that although the evidence for the prevalence of discogenic pain with discography was rated as fair based on 3 available studies the uncertainty regarding testing accuracy and lack of outcome parameters in patients undergoing surgery leave conclusions reached in this study, “subject to other interpretation.”

#### *Randomized Controlled Trial*

In 2009, Ohtori and colleagues published an RCT evaluating the diagnosis of discogenic low back pain (LBP) with discography versus discoblock.<sup>11</sup> A total of 42 patients with severe LBP and L4-L5 or L5-S1 disc degeneration on magnetic resonance imaging were randomized in a 1:1 fashion to discography or discoblock. Twelve patients showed no provocation and were excluded. Fifteen patients in each group (30 total) showed pain provocation using the different diagnostic methods and proceeded to spinal fusion. The visual analogue scale score, Japanese Orthopedic Association Score, and Oswestry Disability Index score indicated higher rates of improvement in the discoblock group compared to the discography group at 3 year follow-up ( $p < 0.05$ ). This study is limited by small sample size and lack of power analysis which preclude conclusions regarding the efficacy of either procedure to adequately diagnose LBP prior to spinal fusion.

## CLINICAL PRACTICE GUIDELINES

### American Pain Society (APS)

The 2009 APS evidence-based guidelines regarding interventional therapies, surgeries, and interdisciplinary rehabilitation for low back pain indicated the following regarding the use of discography:

“In patients with chronic nonradicular low back pain, provocative discography is not recommended as a procedure for diagnosing discogenic low back pain (strong recommendation, moderate-quality evidence). There is insufficient evidence to evaluate validity or utility of diagnostic selective nerve root

block, intra-articular facet joint block, medial branch block, or sacroiliac joint block as diagnostic procedures for low back pain with or without radiculopathy.”<sup>12</sup>

The APS guideline noted, “Although many studies show strong correlation between results of provocative discography and degenerative disc disease on imaging studies diagnostic accuracy for identifying “discogenic” pain is uncertain. Degenerative disc disease is common in asymptomatic persons, and no reliable reference standard exists for distinguishing symptomatic from asymptomatic imaging findings. In addition, even though positive pain responses with provocative discography are unlikely in healthy, asymptomatic patients without back pain, false-positive responses are common in persons without significant back pain but with somatization, other pain conditions, unresolved worker’s compensation claims, or previous back surgery, and can occur even after incorporating low pressure threshold criteria. One study calculated a positive predictive value for provocative discography of 55% to 57%, though this estimate is based on critical assumptions regarding the comparability of outcomes for different surgical procedures for different underlying conditions in patients without risk factors for poor surgical outcomes. There is no evidence that use of provocative discography to select patients for fusion improves clinical outcomes.”<sup>12</sup>

#### American Academy of Orthopedic Surgeons (AAOS)

In 2014, the AAOS updated their evidence-based clinical practice guidelines regarding discography for patient selection in lumbar spinal fusions for degenerative disease.<sup>2</sup> The AAOS gave the following recommendations regarding discography:

- “It is recommended that lumbar discography not be used as a stand-alone test on which treatment decisions are based for patients with low-back pain with abnormal imaging studies (single Level II study).
- It is recommended that within the discussion of potential risks for patients undergoing provocative discography, the potential for acceleration of the degenerative process be included as there is evidence to suggest an association between advanced degenerative spondylosis and a history of undergoing provocative discography.”  
Grade C recommendation

#### American College of Radiology (ACR)

The 2015 ACR guidelines regarding low back pain gave the following recommendations regarding discography:<sup>13</sup>

- X-ray discography and post-discography CT of the lumbar spine was rated a 5, to indicate it may be appropriate in patients with low back pain or radiculopathy and new or progressing symptoms or clinical findings with history of prior lumbar surgery.
- X-ray discography and post-discography CT of the lumbar spine was rated a 3, to indicate it is not usually appropriate in patients with acute, subacute, or chronic low back pain or radiculopathy, who are candidates for surgery or intervention with persistent or progressive symptoms during or following 6 weeks of conservative management.
- X-ray discography and post-discography CT of the lumbar spine was rated a 1, to indicate it is not usually appropriate in patients with acute, subacute, or chronic uncomplicated low back pain or

radiculopathy with one or more of the following: low velocity trauma, osteoporosis, elderly individual, or chronic steroid use.

The ACR guidelines also noted that use of discography to identify a source of pain in the lumbar spine remains controversial. The ACR notes that discography, “is a subjective test, relying entirely on the patient's description of pain during the procedure.”<sup>13</sup>

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

In 2013, ASIPP updated their evidence-based guidelines regarding interventional techniques in chronic spinal pain.<sup>2</sup> A variety of diagnostic and therapeutic spinal interventions were reviewed. The following are the major recommendations regarding discography:

##### *Management of Low Back Pain*

- Lumbar Discography

“The evidence for diagnostic accuracy for lumbar provocation discography is fair and the evidence for lumbar functional anesthetic discography is limited. Lumbar provocation discography is recommended with appropriate indications in patients with low back pain to prove a diagnostic hypothesis of discogenic pain specifically after exclusion of other sources of lumbar pain.”<sup>5</sup>

##### *Management of Neck Pain*

- Cervical Provocation Discography

“The evidence for the diagnostic accuracy of cervical discography is limited. Cervical discography is indicated to test the diagnostic hypothesis of discogenic pain of the cervical spine in individuals who have been properly selected and screened to eliminate other sources of cervical pain.”<sup>5</sup>

##### *Management of Thoracic Pain*

- Thoracic Provocation Discography

“The evidence for thoracic discography is limited. Thoracic discography is recommended to decide if an intervertebral disc is painful or not in rare circumstances.”<sup>5</sup>

##### Grading

- A Fair rating indicates the evidence was sufficient to determine efficacy, but the quality or quantity of the evidence is limited.
- A limited or poor rating indicates evidence is insufficient to determine effects on health outcomes due to a limited number of studies, inconsistent findings, or flaws in study design.

## CENTERS FOR MEDICARE & MEDICAID

As of 4/22/2020, no Centers for Medicare & Medicaid (CMS) coverage guidance was identified which addresses discography as a diagnostic or assessment tool for any spinal condition.

## INSTRUCTIONS FOR USE

Company Medical Policies serve as guidance for the administration of plan benefits. Medical policies do not constitute medical advice nor a guarantee of coverage. Company Medical Policies are reviewed annually and are based upon published, peer-reviewed scientific evidence and evidence-based clinical practice guidelines that are available as of the last policy update. The Companies reserve the right to determine the application of Medical Policies and make revisions to Medical Policies at any time. Providers will be given at least 60-days notice of policy changes that are restrictive in nature.

The scope and availability of all plan benefits are determined in accordance with the applicable coverage agreement. Any conflict or variance between the terms of the coverage agreement and Company Medical Policy will be resolved in favor of the coverage agreement.

## REGULATORY STATUS

### Mental Health Parity Statement

Coverage decisions are made on the basis of individualized determinations of medical necessity and the experimental or investigational character of the treatment in the individual case.

## REFERENCES

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6. Manchikanti L, Falco FJ, Benyamin RM, et al. An update of the systematic assessment of mechanical lumbar disc decompression with nucleoplasty. *Pain physician*. 2013;16(2 Suppl):SE25-54. <https://www.ncbi.nlm.nih.gov/pubmed/23615886>.
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