



my diagnosis

LUMBAR DISCOGENIC PAIN

*Understand your condition.
Know your next steps.*

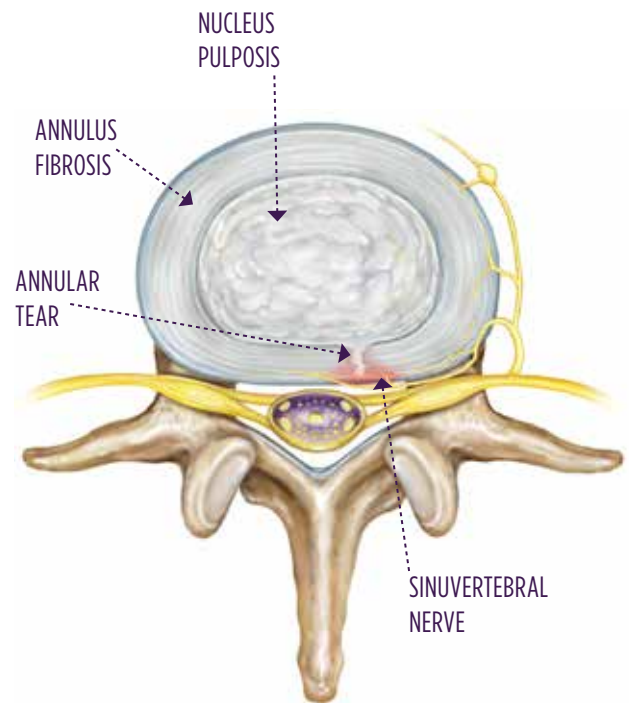
Introduction

Acute or chronic low back pain can have many causes. Frequently the pain generates from the intervertebral disc. Even for physicians specializing in the spine, this condition can be a hard to understand, diagnose, and treat.

The Intervertebral Disc

The lumbar disc is a specialized fibrocartilage that lies in between the bony vertebral sections in the spine. It consists of an inner jelly-like material called the nucleus pulposus (NP) surrounded by a special structure called the annulus fibrosus (AF). The goal of the AF is to contain the inner NP and keep it in place. Sandwiching the disc are two layers of hyaline cartilage called vertebral endplates. The vertebral endplates allow nutrients from the surrounding vertebrae to enter the disc and allow waste products to escape. The disc itself has almost no blood supply, making regenerating or repairing itself difficult.

The main functions of the disc are to act like a type of shock absorber when the axial load is transmitted along the vertebrae, and to act as a pivot point for spine motion.



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Discogenic Pain

The disc can be a direct or indirect source of pain. An indirect cause is when a disc bulges or herniates, irritating a surrounding spinal nerve and resulting in extremity pain. A disc can also be a direct cause of pain, and it is important to understand the innervation of a disc—that is, how the nerves are distributed around the disc. The outer part of the disc is innervated by the sinovertebral nerve, so tears or disruption in this part of the disc have the ability to transmit pain. When seen on imaging, these tears are usually referred to as annular tears of “high intensity zones” (HIZ). The mechanisms of why these occur are complex, but the result may be local inflammation or irritation.

Discogenic pain usually causes midline low back pain. It can occasionally radiate into the buttocks or down the lower extremities. The pain is usually described as dull and achy but can change or become sharp with activity. Bending forward or sitting for too long often worsens this pain, and patients may feel the need to change position frequently.

How is it diagnosed?

Like so many orthopedic conditions, the presence of an abnormality on an imaging study or test does not necessarily mean that the symptoms are caused by that finding. As a natural part of aging, even patients who have never had low back pain may have some degenerative findings on an MRI scan of their intervertebral discs. Why these entities cause pain in some patients and not in others remains a mystery, but it may have to do with genetics and local immune/inflammatory responses.

Diagnosis therefore is difficult and can come down to a process of elimination. MRI scans are the best way to visualize a disc to see if it is inflamed, dehydrated, or contains an annular tear. Proving this is what’s causing pain often involves a history and physical exam, as well as ruling out other structures that cause pain, such as arthritic joints or pinched nerves. In rare cases, a test called discography is performed in which a physician places a needle into the disc and injects a dye. During this test, the patient is asked if the pain is reproduced and typical, and the physician determines if the dye is contained in the disc or leaks into the outer pain-generating part of the disc. This test is usually reserved for individuals who may be considering surgery.

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How is discogenic pain treated?

The treatment of discogenic pain can be just as difficult as the diagnosis, and it is usually symptomatic in nature. An active physical therapy program focusing on spine biomechanics and strengthening is one of the main treatments. Occasionally, anti-inflammatory medicines are prescribed. Weight loss and smoking cessation are recommended for secondary prevention.

In some cases, spinal fusion surgery is considered if the pain remains chronic and disabling. Multiple pain interventions have been pursued in the past but currently have limited application. Most recently, there are studies aimed at regenerative therapies (stem cells, platelet-rich plasma) that are injected into the disc with the goal of healing annular tears or reducing the pain associated with them.



Summit Orthopedics' Eagan location was awarded the prestigious Certificate of Distinction for Spinal Fusion by The Joint Commission. Summit is the first group in Minnesota to have received this award for patient satisfaction and key outcome measurements.

NOTES

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What are the treatment options? What does my specialist recommend?

Your spine specialist has developed a treatment plan based on your specific situation. His or her recommendation, for you, has been selected from the treatment options below.

| | TREATMENT | DESCRIPTION | MY NEXT STEP |
|--------------------------|-----------------------------|---|--|
| <input type="checkbox"/> | MEDICATION | The most effective and frequently used medications are those that treat the underlying causes for the symptoms: inflammation and muscle spasms. | Contact the patient coordinator if symptoms do not improve: (651) 968-5201 |
| <input type="checkbox"/> | PHYSICAL THERAPY | Often times the pain you are feeling is not from a disc herniation and can be treated with physical therapy. | Set up a therapy appointment with the patient coordinator: (651) 968-5201 |
| <input type="checkbox"/> | EPIDURAL STEROID INJECTIONS | These injections help to directly reduce inflammation/irritation of the nerve affected by a disc herniation. They do not fix the herniation, only provide pain relief. | Set up procedure date and time with the patient coordinator: (651) 968-5201 |
| <input type="checkbox"/> | SURGERY | Surgery is reserved only for the cases where everything else has been tried or the limb weakness is so severe that you cannot do the most basic of daily activities. The surgery lasts about 1-2 hours and many people feel better immediately after surgery. | Set up surgery date and time with the patient coordinator: (651) 968-5201 |

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