

## Introduction

A common cause of low back and leg pain is a ruptured or herniated disc. Symptoms may include dull or sharp pain, muscle spasm or cramping, leg pain and leg weakness or loss of leg function. Sneezing, coughing, or bending usually intensifies the pain. Rarely bowel or bladder control is lost, and if this occurs, seek medical attention at once.

The disc, which is located between the bones of the spine (vertebrae), splits or ruptures. When this happens, the inner gel-like substance (nucleus pulposus) leaks out. This is called a herniation of the nucleus pulposus—or a herniated disc.

Leg pain is a symptom frequently associated with a lumbar herniated disc. Pressure on one or more nerves that causes pain, burning, tingling, numbness and weakness that extends from the buttock into the leg and sometimes into the foot. Usually one side (left or right) is affected.

## Anatomy

In between each of the five lumbar vertebrae (bones) is a disc, a tough fibrous shock-absorbing pad. Endplates line the ends of each vertebra and help hold individual discs in place. Each disc contains a tire-like outer band (called the annulus fibrosus) that encases a gel-like substance (called the nucleus pulposus). Nerve roots exit the spinal canal through small passageways between the vertebrae and discs.

Pain and other symptoms can develop when the damaged disc pushes into the spinal canal or nerve roots. Disc herniation occurs when the annulus fibrosus breaks open or cracks allowing the nucleus pulposus to escape. This is called a Herniated Nucleus Pulposus (HNP) or herniated disc.

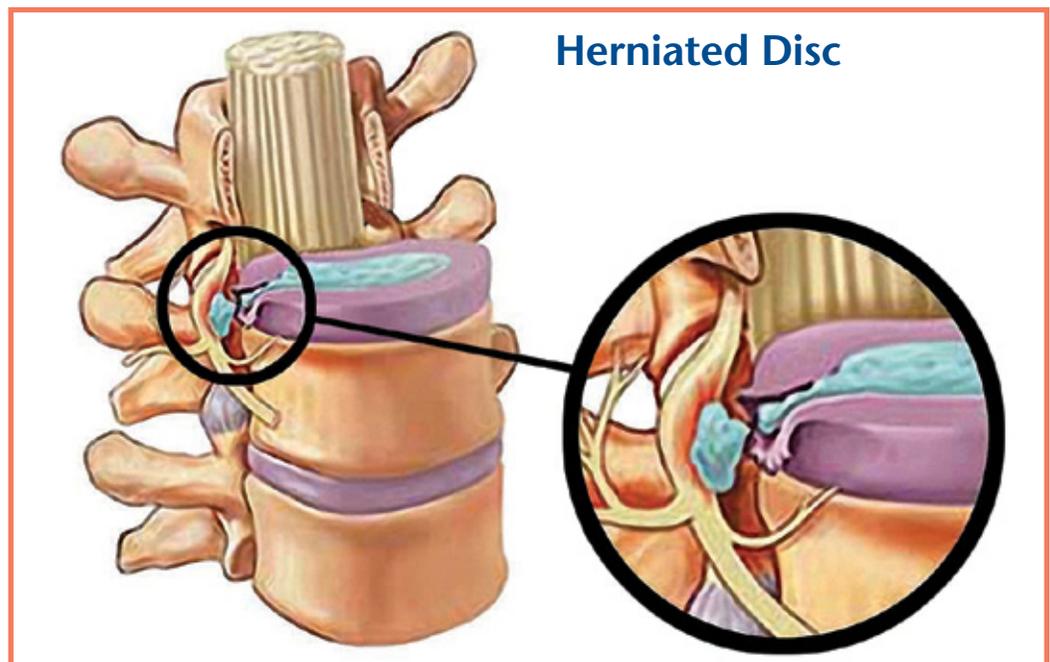
## Causes

Many factors increase the risk for disc herniation: (1) Lifestyle choices such as tobacco use, lack of regular exercise, and poor nutrition substantially contribute to poor disc health. (2) As the body ages, natural biochemical changes cause discs to gradually dry out affecting disc strength and resiliency. (3) Poor posture combined with the habitual use of incorrect body mechanics stresses the lumbar spine, affecting its normal ability to carry the bulk of the body's weight. Combine these factors with the affects from daily wear and tear, injury, incorrect lifting, or twisting and it is easy to understand why a disc may herniate. Lifting something incorrectly can cause disc pressure to rise to several hundred pounds per square inch!

A herniation may develop suddenly or gradually over weeks or months.

Interestingly, not every herniated disc causes symptoms. Some people discover they have a bulging or herniated disc after a MRI (magnetic resonance imaging) for an unrelated reason.

Most of the time the symptoms prompt the patient to seek medical care. The visit with the doctor usually includes a review of medical history, symptom evaluation and the history of treatments and medication the patient has tried and a physical and neurological exam.



An x-ray may be needed to rule out other causes of back pain. A MRI scan verifies the extent and location of disc damage.

### Non-Surgical Treatment

Most patients with a lumbar herniated disc do not need surgery! Initially, the doctor may recommend some physical therapy and medications, and/or an epidural steroid injection.

Medications may include an anti-inflammatory to reduce swelling, a muscle relaxant to calm spasms, and a pain-reliever to alleviate intense but short-lived pain (acute pain). Mild to moderate pain may be treated with non-steroidal anti-inflammatory drugs (NSAIDs). These work by relieving both swelling and pain. Discuss NSAID use with your physician first.

The doctor may recommend physical therapy. The doctor's orders are transmitted to the physical therapist by prescription. Physical therapy includes a combination of non-surgical treatments to decrease pain and increase flexibility. Ice and heat therapy, gentle massage, stretching, and lumbar/pelvic traction are some examples.

If leg pain is severe, or leg weakness is developing, the doctor may prescribe an epidural steroid injection. An epidural is an injection of anti-inflammatory medication into the space near the affected nerves. You should discuss this option with your doctor and ask about potential side effects before beginning this treatment.

In four to six weeks, the majority of patients find their symptoms are relieved without surgery! Be optimistic about your treatment plan and remember that less than 5% of all back problems require surgery!

### Surgical Treatment

Surgery is considered if non-surgical treatment fails. Constant pain, leg weakness, or loss of function requires further evaluation. Rarely, does a lumbar herniated disc cause bowel/bladder incontinence or groin/genital numbness, which requires immediate medical attention. If surgery is recommended, always ask the purpose of the operation and what results you can expect. Never be afraid to obtain a second opinion.

To relieve nerve pressure and leg pain, surgery usually involves a partial disc removal called a discectomy. In addition, the surgeon may need to access the herniated disc by removing a portion of the bone covering the nerve. This procedure is called a laminotomy. Fortunately, these procedures can often be done utilizing minimally invasive techniques. Minimally invasive surgery does not require large incisions, but instead uses small cuts and tiny specialized instruments and devices.

### Prevention

Aging is inevitable, but lifestyle changes can help prevent lumbar disc problems. Risk factors include poor posture and body mechanics, weak abdominal muscles, smoking, and obesity. Start now to adopt habits that will help preserve your spine for the future.

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