

LUMBAR DISC HERNIATION

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You probably have heard many people refer to having a “slipped” or “ruptured” disc in their back. What they are actually describing is a herniated disc, a common source of low back and leg pain. The lumbar discs are cartilaginous shock absorbers between adjacent vertebrae. These lumbar discs between the vertebrae allow our spinal columns to flex and extend, as well as to bend from side-to-side. The periphery of the disc is composed of several bands of fibrous cartilage called the annulus fibrosus. The center of a disc is a gelatinous substance called the nucleus pulposus. A disc herniation occurs when a part of the gelatinous nucleus pulposus protrudes through the border of the outer nucleus pulposus into the spinal canal, thereby creating pressure on the spinal cord and/or exiting nerves.

Our lumbar discs are made of cartilage, and cartilage in turn is composed of approximately 80% water by weight. As we age, this water content decreases. This loss of water content is manifested by a loss of disc height or narrowing of the spaces between the vertebrae and the disc itself becomes less flexible. The fibrous outer annulus fibrosus may develop a small tear through which the inner nuclear material herniates. Sometimes, free fragments of disc material may protrude into the spinal canal where they can create pressure on nerves that are responsible for sensation, strength, and bowel or bladder function.

Symptoms of nerve compression by a herniated disc include radiating pain into one leg, often associated with weakness, numbness and tingling that follows the distribution of pain. In rare instances, patients may develop loss of bowel or bladder control (if you experience weakness extending into both legs, as well as bowel bladder dysfunction, you could have a serious problem and should seek immediate medical attention).

A herniated lumbar disc is typically diagnosed by taking a thorough patient history. Typically, patients will describe a period of low back pain that is followed by the progressive development of lower extremity radiating pain, numbness or tingling that exceeds the magnitude of low back pain. A thorough physical examination can usually determine which specific nerves are affected. X-rays of the lumbar spine may show some evidence of disc degeneration. An MRI scan may be indicated in the presence of radiating weakness in either leg or the presence of severe radiating leg pain. An MRI scan is the study of choice for visualizing the soft tissue structures of the spine including the lumbar discs and the exiting nerves themselves. As described in our essay on Lumbar Disc Degeneration, MRI scans must be interpreted with caution as we all develop early degenerative findings on these remarkably sensitive imaging studies even though we may be asymptomatic. The key to success is correlating the appropriate clinical symptom with an MRI finding that makes sense and can explain the symptom.

Conservative treatment is usually effective 95% of the time. Bed rest and over-the-counter pain relievers may be all that is needed. Muscle relaxers, anti-inflammatory

medications, and oral steroids including Prednisone may be used in the setting of neurologic deficit. Any physical activity should be slow and controlled so that symptoms do not return. Taking short walks and avoiding sitting for long periods of time is advisable.

If conservative treatment fails, epidural steroid injections may lessen nerve irritation and may allow better participation in physical therapy. These injections may be administered on an outpatient basis and may be repeated up to 3 times over 6 to 12 months.

Surgery, including lumbar discectomy, may be required if a fragment of disc material lodges within the spinal canal and compresses a nerve in turn resulting in loss of function. The surgery is typically performed under general anesthesia and patients are discharged either the same day of surgery or after a single overnight hospital stay. At Connecticut Neck and Back Specialists, minimally invasive techniques are used to limit the size of our surgical incisions and to minimize the manipulation and disruption of surrounding healthy muscle tissue. When surgery is performed on an outpatient basis, we usually attempt to allow our patients to return to work within 2 to 6 weeks. Surgical risks include the risk of infection (1%), recurrence of a second disc herniation (7%), spinal fluid leak (1%), scar tissue formation around the exiting nerve resulting in chronic nerve pain (2%), and progressive disc degeneration resulting in back pain that may require a subsequent spinal fusion. When lumbar discectomy is performed, the nerve that was compressed by the disc herniation is completely freed from all surrounding compression. The rate and extent of nerve recovery is dependent on many factors including the severity of compression, the duration of the compression, the age of the patient, and associated conditions including the coexistence of diabetes or a significant smoking history.