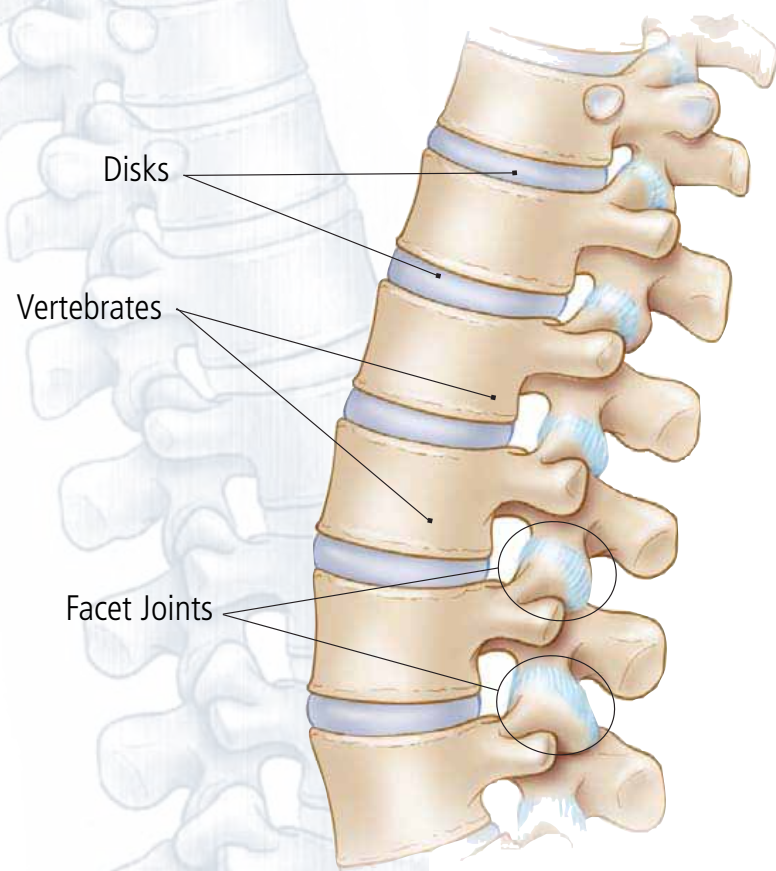


Lumbar Spinal Stenosis

By Casey Bachison, MD



Spinal stenosis is one of the most common conditions causing back and leg pain in the U.S. population. It is defined as narrowing of the spinal canal. As we age the bony canal through which our spinal cord and nerves pass becomes progressively narrower, eventually causing compression of the nerves. Spinal stenosis causes pain in the back along with pain, numbness, or weakness in the arms or legs. This condition can occur anywhere in the spine. When it occurs in the region of the neck it is referred to as cervical stenosis and is associated with pain or numbness in the arms. When it occurs in the low back it is called Lumbar stenosis.

Lumbar stenosis occurs much more frequently than cervical stenosis and leads to the common complaint of low back pain radiating to both legs. Patients typically also describe heaviness and weakness in their legs that worsens with walking and improves with leaning forward or resting. A spine surgeon will often ask if the patient feels better while pushing a grocery cart, an act that usually improves the symptoms of spinal stenosis. This condition, with its masquerading symptoms, can be a diagnostic challenge to physicians regardless of their specialty. Frequently patients being seen in the orthopedic clinic for evaluation of hip or knee pain are surprised to find that the pain in their hip, knee or leg is caused by compression of nerves in their spine.

Understanding the spine and how it works will help you understand how stenosis of the spinal canal develops and causes symptoms. The major components of the spine include the vertebrae or bones of the spine, the disks that separate each of the bones, facet joints and various ligaments and muscles that add stability and strength to the spine.

VERTEBRAE

Vertebrae are specialized ring shaped bones that when stacked one on top of the other creates a tube or canal of bone through which the spinal cord nerves pass. The vertebrae also have small holes in their sides through which nerves exit the spine as they travel down into the legs. These small holes are called foramen.

DISKS

Between each of the vertebrae is a disk of soft tissue commonly called the intervertebral disk. The disks allow movement between two vertebrae making the spine flexible. It also functions as a shock absorber while walking or running.

FACET JOINTS

At each level of the spine are two small joint that add additional stability and flexibility to the spine. These two joints are located just behind and to the side of the spinal cord and nerves.

DEVELOPMENT OF SPINAL STENOSIS

The normal aging process and arthritis are the most common cause of spinal stenosis. The process begins with degeneration of the intervertebral disk. As the disk wears out, it will often bulge backward pushing against the nerves in the spine. A portion of the disk will also enter the foramen pinching the nerves as they exit the spine. This pinching of nerves causes pain or numbness in the legs. With degeneration of the disk the facets joints become overloaded and begin to thicken, increasing the amount of bone inside the spinal canal. Finally, as the arthritis of the spine progresses, the ligaments on the back of the spinal canal thicken adding more pressure to the nerves within the spinal canal.

PHYSICIAN EVALUATION

If you have symptoms of spinal stenosis, you should see your physician for further evaluation. Your physician may refer you to a spine specialist. After a discussion of your symptoms, the specialist will examine your back, looking for areas of deformity or tenderness. The specialist will also perform a thorough examination of your legs looking for muscle weakness or changes in sensation. X-rays of the spine will be taken and if you have not previously had an MRI this will often be ordered. The MRI provides a detailed picture of the spine and nerves. It is the best tool to evaluate the levels of the spine involved and the extent of spinal stenosis at each level. Occasionally, additional test such as X-rays in the flexed and extended position, CT scan or myelogram will be obtained to improve the physician's understanding of an individual's disease process.



TREATMENT

The treatment of Spinal stenosis can be broken down into two major categories: nonsurgical and surgical. Nonsurgical treatment should always be attempted prior to surgical intervention with the exception of patients with profound or progressive neurologic deficits.

NONSURGICAL TREATMENT

The first-line treatment for lumbar stenosis is a course of anti-inflammatory medication and physical therapy. Because stenosis pain is the result of compressed nerves, often a reduction in inflammation around the nerve will help to decrease the pain experienced by the patient. Anti-inflammatory medication must be used carefully as they may cause stomach irritation or ulcers in some patients. Physical therapy focusing on stretching and strengthening the muscle along the back of the spine as well as strengthening the abdomen has been shown to improve the symptoms of spinal stenosis.

When anti-inflammatory medication and therapy fail to relieve the pain, your physician may send you for a steroid injection into the epidural space. The epidural space is the space between the spine and the nerves. In this space the steroid acts as a powerful anti-inflammatory to decrease the swelling around a nerve and provide pain relief.

SURGICAL TREATMENT

Surgical intervention for spinal stenosis is reserved for patients who experience little or no improvement with nonsurgical treatment. Generally, these patients have very poor quality of life as a result of pain from spinal stenosis. Surgery involves a decompression procedure called a laminectomy. During a laminectomy the bones, bone spurs and ligaments that are compressing the nerves are trimmed away increasing the space available for the spinal nerves. In some cases a fusion procedure is also performed if the spine has become unstable as a result of the degenerative process.

Patients undergoing laminectomy for spinal stenosis with or without fusion are expected to have a good or excellent result more than 80 percent of the time.

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