

Source: <http://www.medicinenet.com/script/main/art.asp?articlekey=84876>

Lumbar spinal stenosis facts

- Lumbar spinal stenosis is a lower back condition whereby either the spinal canal (central stenosis) or one or more of the vertebral foramina (foraminal stenosis) becomes narrowed.
- Lumbar spinal stenosis is typically caused by degenerative arthritis.
- Patients can develop low back pain as well as pain, weakness, and numbness or decreased sensation in the legs.
- Surgery is recommended when other nonsurgical treatments have failed and for patients with increasing weakness of the legs or loss of bowel or bladder function.
- Surgery includes a lumbar decompression with or without a lumbar fusion.
- Surgery is most reliable for the relief of leg symptoms and less reliable for the relief of back pain.

What is the lumbar spine, and what is lumbar spinal stenosis?

The lumbar spine is made up of five vertebral bodies in the lower back. Nerves coming off the spinal cord travel through the spinal canal and exit the canal through small openings on the sides of the vertebrae called foramina (singular = foramen). These nerves transmit sensations from the buttocks and lower extremities through the spinal cord to the brain and transmit motor signals from the brain to the lower extremities to produce movement of the legs, toes, and joints of the lower extremities.

Lumbar spinal stenosis is a condition whereby either the spinal canal (central stenosis) or one or more of the vertebral foramina (foraminal stenosis) becomes narrowed. If the narrowing is substantial, it causes compression of the spinal cord or spinal nerves, which causes the painful symptoms of lumbar spinal stenosis, including low back pain, buttock pain, and leg pain and numbness that is made worse with walking and relieved by resting.

What causes lumbar spinal stenosis?

The most common cause of lumbar spinal stenosis is degenerative arthritis and degenerative disc disease. As with other joints in the body, arthritis commonly occurs in the spine as part of the normal aging process and as a result of osteoarthritis. This can lead to loss of the cartilage between the bones at the joints, formation of bone spurs (osteophytes), loss of the normal height of the discs between the vertebrae of the spine (degenerative disc disease, also known as spondylosis), and overgrowth (hypertrophy) of the ligamentous structures. Further degeneration of the lumbar discs can lead to slippage of one vertebra on another, a process referred to as spondylolisthesis. Each of these processes can reduce the normal space available for the nerves in the spinal canal and result in direct pressure on nerve tissues to cause the symptoms of lumbar spinal stenosis.

Lumbar spinal stenosis can also be caused by other conditions that decrease the space of the spinal canal or vertebral foramen. These can include

- tumor of the local structures or metastatic tumors (tumors that originated in another part of the body and spread to this location),
- infection,
- various metabolic bone disorders that cause bone growth, such as Paget's disease of bone.

These causes, however, are much less common than degenerative arthritis.

What are risk factors for lumbar spinal stenosis?

The major risk factor for lumbar spinal stenosis is aging because it is associated with degeneration of the spine. Another less common risk factor is osteoporosis as it can lead to compression fracture of the lumbar vertebrae that results in lumbar spinal stenosis.

What are lumbar spinal stenosis symptoms?

Lumbar spinal stenosis can cause

- low back pain,
- weakness,
- numbness,
- pain,
- loss of sensation in the legs and feet.

In most situations, the symptoms improve when the patient is sitting or leaning forward. Typically, painful sensations shoot down the legs with continued walking and diminish with resting. These leg sensations sometimes mimic sciatica. This particular activity-related symptom is sometimes referred to as pseudoclaudication (or neurogenic claudication) because it mimics the true claudication of poor circulation from the narrowed blood vessels of peripheral vascular disease. Standing and bending backward can make the symptoms worse. This is because bending forward increases the space in the spinal canal and vertebral foramina, while bending backward decreases this space. It is therefore more comfortable for patients to sit or lean forward. Patients are frequently unable to walk for long distances and often state that their symptoms are improved when bending forward while walking with the support of a walker or shopping cart.

The symptoms commonly worsen with time. This is because degenerative arthritis is a progressive disease that gradually becomes more severe with time. If left untreated, the compression on the nerves from lumbar spinal stenosis can lead to increasing weakness and loss of function of the legs. It can also lead to loss of bowel and bladder control and loss of sexual function.

A doctor can help determine if one's symptoms are from lumbar spinal stenosis or a different condition. Many other disorders can cause similar symptoms that mimic lumbar spinal stenosis including

- diabetic neuropathy,
- peripheral vascular disease,

- vascular claudication.

How do health-care professionals diagnose lumbar spinal stenosis?

The medical evaluation begins with a complete medical history and physical examination to get clues to the diagnosis of lumbar spinal stenosis. During the medical history, the patient will be asked questions regarding symptoms, including how long they have been present, what makes them better or worse, what prior treatment the patient has had, and what other medical conditions they have. These questions can also help the doctor distinguish lumbar spinal stenosis from other disorders that may produce similar symptoms.

The physical examination often consists of testing the range of motion in the back and feeling for areas of tenderness in the back. The legs may be examined for range of motion, strength, sensation, reflexes, and pulses. The hips and knees may also be examined because problems with these joints can often cause symptoms similar to those of lumbar spinal stenosis.

After the examination, the physician may order imaging studies to detect anatomic signs of lumbar spinal stenosis. This often begins with plain X-rays of the spine. The doctors may also order an X-ray of the patient's pelvis and hips, depending on findings from the physical examination. The X-rays can show the doctor various signs associated with spinal stenosis, including loss of the normal intervertebral disc height, the presence of bone spurs (osteophytes), and spinal instability (abnormal motion between the vertebrae). The ultimate diagnosis of lumbar spinal stenosis is made by an MRI scan (magnetic resonance imaging scan) or CT scan (CAT scan or computerized axial tomography). These are more advanced tests that are used to visualize the nerves in the lower back and detect if they are being compressed from lumbar spinal stenosis.

Sometimes, special nerve tests, including electromyogram (EMG) or nerve conduction studies, may be ordered. These tests can identify damage to or irritation of the nerves caused by long-term compression from lumbar spinal stenosis. These tests can also help determine exactly which nerves are involved.

What is the **treatment** for lumbar spinal stenosis?

In most situations, the treatment for lumbar spinal stenosis begins with conservative (nonoperative) treatments. This can include medications to reduce inflammation, even short courses of oral cortisone medication, and pain medications. There are also several medications directed specifically at nerve pain that are helpful in lumbar spinal stenosis, including gabapentin (Neurontin) and pregabalin (Lyrica). Physical therapy can help for many. Cortisone (steroid) injections in the lumbar spine, referred to as epidural injections, can also reduce the symptoms by decreasing inflammation and swelling around the nerve tissue. These are sometimes repeated up to three times per year.

Surgery

Surgery may be indicated for those who do not improve with the above treatments or if there is severe or progressive weakness or loss of bowel or bladder function (cauda equina syndrome). Depending on the examination findings and imaging studies, there are various surgical procedures available to treat lumbar spinal

stenosis, ranging from laminectomy to fusion procedures.

The main goal of surgery is to remove the structures that are compressing the nerves in the spinal canal or vertebral foramen. This is referred to as lumbar decompression surgery (laminectomy, laminotomy, foraminotomy). In some patients, this can be performed alone, but in other patients, it must be combined with lumbar fusion. If too much of the compressive structures need to be removed to free the nerve, the vertebrae may become unstable (spinal instability). This leaves the vertebrae with abnormal motion. If this occurs, a spinal fusion can be performed to attach the vertebrae together and eliminate the motion at that level. Sometimes this requires metallic hardware to be installed in the vertebrae to adequately support and fix the involved bone.

Surgery for lumbar spinal stenosis can be very successful in most patients in relieving the leg symptoms of ambulatory pain, sciatica, and numbness. However, depending on the severity of the nerve compression and the length of time the nerve have been compressed, there may be some permanent damage that is not relieved with surgery. The success for back pain relief is less reliable with surgery than the relief of leg symptoms.

More recently, surgical procedures that are somewhat less invasive than traditional lumbar decompression have become available. Interspinous devices that have been used in certain patients for this purpose include X-Stop and Coflex devices.

Is it possible to prevent lumbar spinal stenosis?

Unfortunately, the degenerative changes responsible for lumbar spinal stenosis can occur as part of the normal aging process. There is little that can be done to prevent lumbar spinal stenosis. For some patients, exercises and/or physical therapy can prevent aggravation of symptoms.

What is the prognosis for lumbar spinal stenosis?

The outlook for patients with lumbar spinal stenosis varies and depends on the severity and duration of symptoms at the time of initiation of treatment. Ultimately, the outlook depends on an individual's response to treatment. The response to treatment is also dependent on the severity and cause of the lumbar spinal stenosis as well as the underlying medical condition of the patient.

REFERENCE:

Klippel, J.H., et al. *Primer on the Rheumatic Diseases*. New York: Springer, 2008.

© 2016 MedicineNet, Inc. All rights reserved.

MedicineNet does not provide medical advice, diagnosis or treatment.

[See additional information](#)