VB SPINE

Patient Guide to

Lumbar Spinal Stenosis

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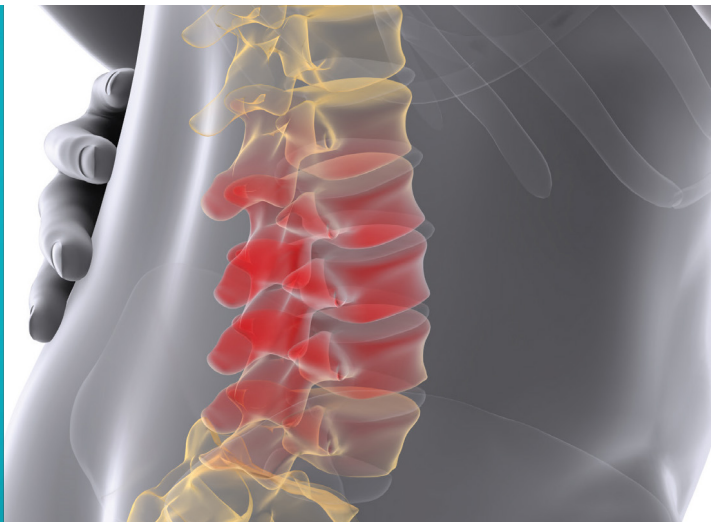
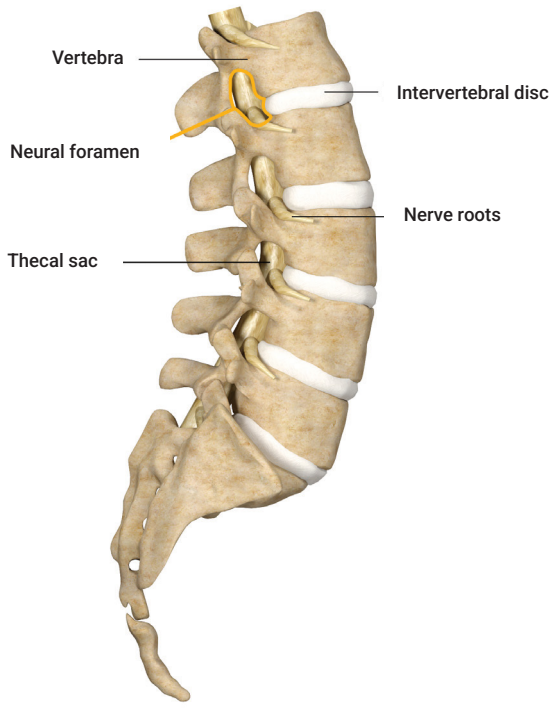
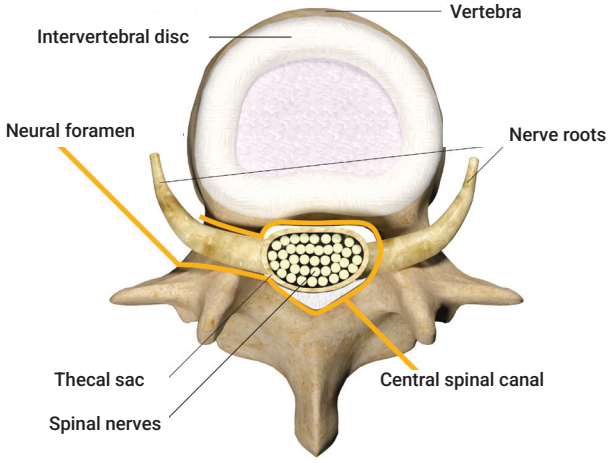
What Is Lumbar Spinal Stenosis?

Spinal stenosis is a narrowing of the space through which the spinal nerves pass. Stenosis can affect either the central spinal canal, the area of the lumbar spine that contains the **thecal sac** (see Glossary), or the **neural foramen** (see Glossary). When either of these spaces is compressed, the nerves may begin to function abnormally.

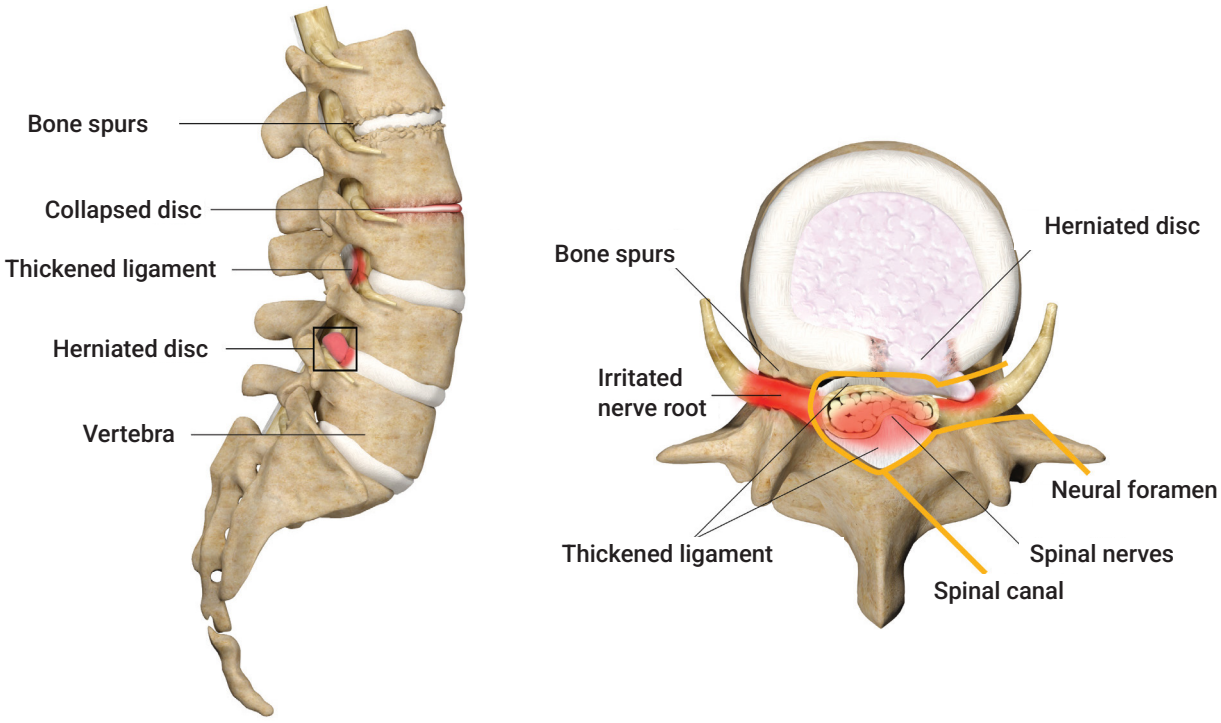






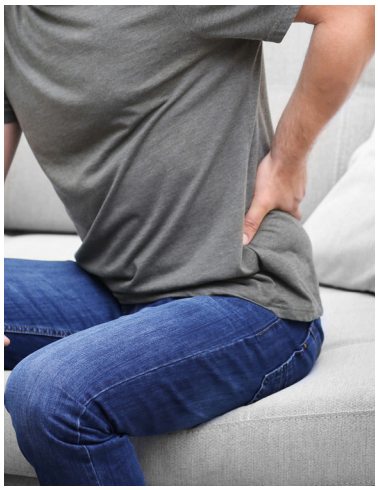
What Are Some of the Possible Risk Factors for Lumbar Spinal Stenosis?

Degenerative changes in the spine are the most common causes of spinal stenosis1. Examples of these changes include collapsed discs, **bone spurs** (see Glossary), or fluidfilled cysts, as well as **herniated discs** (see Glossary) and thickened ligaments. The narrowing caused by these degenerative changes may place pressure on the nerve roots and/or **thecal sac** (see Glossary), which can result in a variety of symptoms (described on following page).



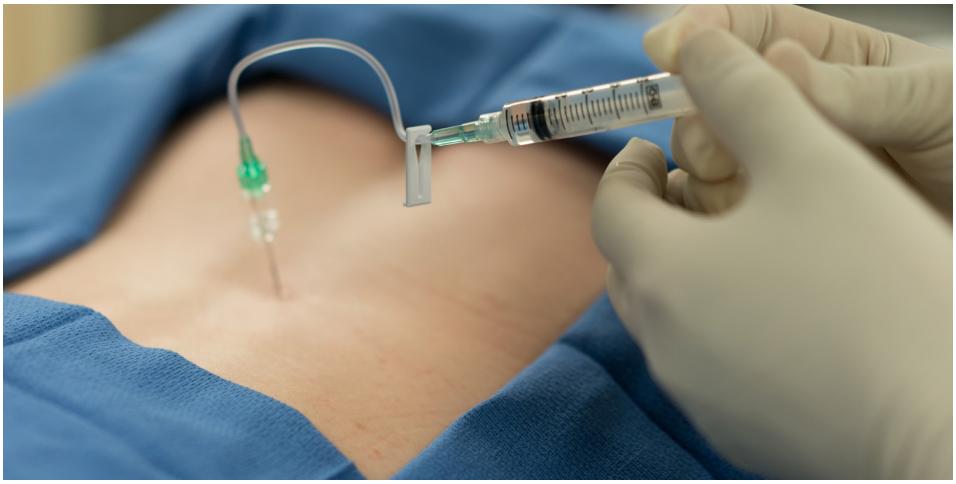
What Are Some Common Symptoms of Lumbar Spinal Stenosis?

- Decreased ability to walk long distances
- Inability to stand for long periods of time
- Numbness, tingling, heaviness, or weakness in the legs and/or buttocks
- Pain, stiffness or cramping in the lower back
- Decreased symptoms when sitting or pushing a shopping cart



What Are Some Non-Surgical Treatment Options?

Anti-inflammatory and/or pain medications, bracing, physical therapy or spinal epidural injections may be used to treat symptoms of stenosis. Surgery may be considered for patients whose symptoms do not improve, but usually only if they have associated neurological symptoms or deformity of the spine.



Surgical Treatment Options for **Lumbar Spinal Stenosis**

In general, surgical treatment options presented by your surgeon are aimed at relieving pressure on nerve roots in an attempt to address pain.

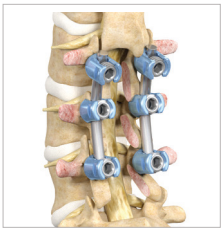
Spinal Decompression (I.e., Laminectomy, Laminotomy, And/Or Foraminotomy)

A spinal decompression involves fully or partially removing the bone and soft tissues that cover and surround the nerves, including **bone spurs** (see Glossary), to enlarge the space for and relieve pressure on (compression of) the nerve roots or **thecal sac** (see Glossary).

Incision: lower back (posterior lumbar)

Decompression and Posterior Spinal Fusion

In addition to a decompression, your surgeon may perform a **spinal fusion** (see Glossary) to stabilize the back (posterior) portion of some of the spinal bones (vertebrae). A fusion procedure usually includes the placement of stabilization devices such as metal screws and rods to help hold the vertebrae together. Your surgeon will also place **natural** or synthetic **bone material** (see Glossary) to assist in the healing process.*



Incision: lower back (posterior lumbar)

Interbody Fusion Procedures

In addition to a decompression and/or posterior **spinal fusion** (see Glossary), your surgeon may choose to perform a fusion in the space at the front of the spinal column in between the spinal bones (vertebrae) called the **interbody space** (see Glossary). In these procedures, which can be done from a front (anterior), side (lateral), or back (posterior) approach to the spine, and as explained in additional detail below, your surgeon will remove the degenerated disc material and replace it with either a piece of **donor bone** (see Glossary) or an implant made of metal or plastic and filled with **natural bone material** (see Glossary).*

- ### Posterior or Transforaminal Lumbar Interbody Fusion (PLIF or TLIF)

  In a PLIF or TLIF, your surgeon will access the disc space using the same incision he/she used for the decompression and/or posterior **spinal fusion** (see Glossary).

Incision: lower back (posterior lumbar)

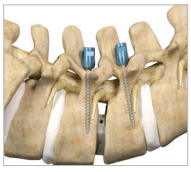
- ### Anterior Lumbar Interbody Fusion (ALIF)

  In an ALIF, your surgeon will make an incision on the front of your abdomen. He/ she will then safely move organs and other necessary tissues out of the way in order to reach the spine. Your surgeon may choose to also perform a decompression and posterior spinal fusion (described above) during the same or during a separate procedure.

Incision: lower abdomen (anterior lumbar)

- ### Lateral Lumbar Interbody Fusion (LLIF)

  In an LLIF, your surgeon will make an incision on the side of your abdomen in order to reach the spine. Your surgeon may choose to also perform a decompression and posterior spinal fusion (described above) during the same or a separate procedure.



Incision: side of abdomen (lateral lumbar)

* The placement of these implants is intended to assist in a healing process called **spinal fusion** (see Glossary). If successful, spinal fusion will typically take place in the weeks and months following surgery, and can be assessed by your surgeon on imaging studies (e.g. x-rays) taken during follow up visits.

Glossary

Bone spurs: bony projections that can develop as a result of the natural aging process

Donor bone: bone graft that comes from a donor and is referred to as allograft bone. Allograft bone usually comes from bone banks that harvest the bone from cadavers

Herniated disc: the shift of an intervertebral disc into an abnormal position

Interbody Space: space between two vertebra where the intervertebral disc is located

Intervertebral disc: soft structure found between each of the spinal bones (vertebrae), that acts as a shock absorber

Laminectomy: surgical removal of the entire lamina, a bone at the back of the spine

Natural bone material: bone material that can come either from a patient's own body (autograft) or be donated (see donor bone) from a bone bank after being harvested from a cadaver (allograft)

Neural foramen: the opening through which the spinal nerves pass on their way from the spinal canal to the arms or legs

Spinal fusion: stabilization or permanent connection of two or more vertebrae by joining them with instrumentation and bone material. Spinal fusion involves techniques that are designed to mimic the normal healing process of broken bones

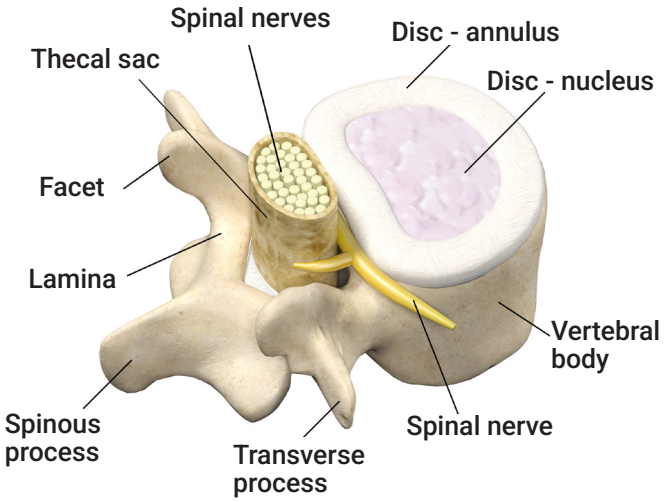
Stenosis: narrowing of the space for the spinal nerves or spinal cord

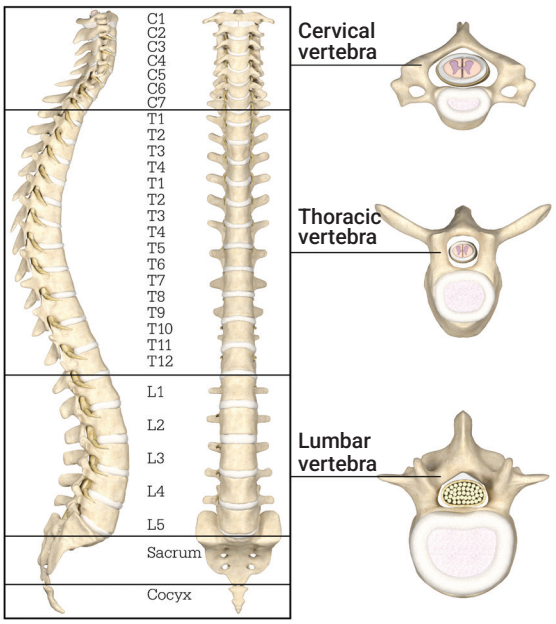
Thecal sac: soft tubular structure that contains the spinal nerves

Transforaminal: through the foramen, or opening through which the spinal nerves pass on their way from the spinal canal to the arms or legs

Vertebra/Vertebral body: spinal bone

Key Spinal Structures to Know





Reference:
1. Genevay S, Atlas SJ. Lumbar spinal stenosis. Best Practice & Research: Clinical Rheumatology. 2010; 24: 253–65.

In general, surgical treatment options presented by your surgeon are aimed at relieving pressure on nerve roots in an attempt to address pain.

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