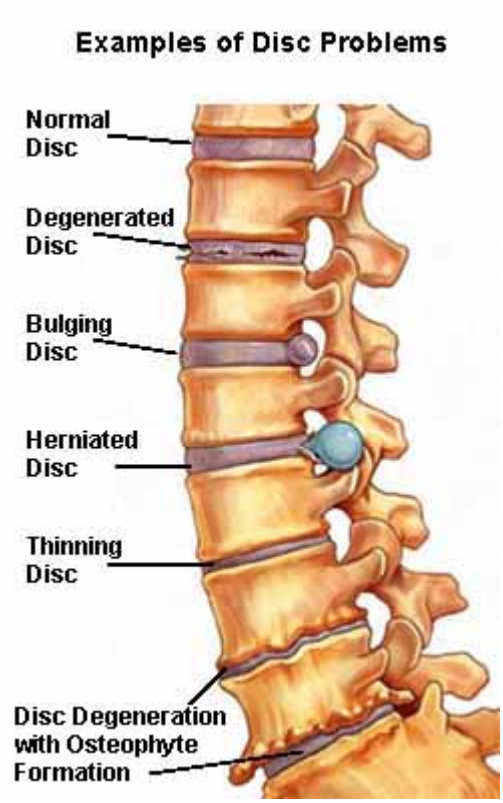
Lumbar Laminectomy for spinal stenosis

Lumbar laminectomy is a surgical procedure used to treat spinal stenosis, a degenerative condition in which the spinal canal becomes narrowed and creates pressure on the spinal cord. Stenosis occurs as people age and the ligaments of the spine thicken and harden (this is called calcification). Bones and joints may also enlarge, and bone spurs (called osteophytes) may form. Bulging or herniated discs are also common. Spondylolisthesis (the slipping of one vertebra onto another) can also lead to compression.



The goal of a laminectomy is to relieve pressure on the spinal cord or spinal nerve by widening the spinal canal. This is done by removing or trimming the lamina (roof) of the vertebra to create more space for the nerves. A surgeon may perform a laminectomy with or without fusing vertebrae or removing part of a disc. Various devices (like screws or rods) may be used to enhance fusion and support unstable areas of the spine.

Quick Anatomy Lesson

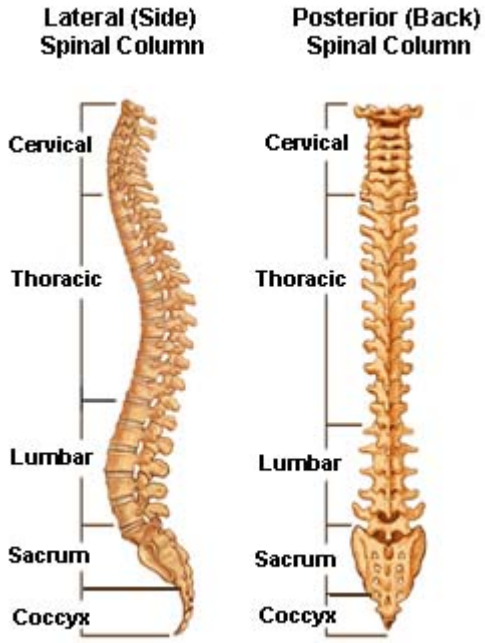
The human spine extends from the skull to the pelvis and is made up of individual bones called vertebrae. The vertebrae, which are stacked on top of each other, are grouped into four regions:
1) the cervical spine or neck (which is made up of 7 vertebrae)

2) the thoracic spine or chest area (which is made up of 12 vertebrae)

3) the lumbar spine or low back (which is made up of 5 vertebrae)

4) the sacrum or pelvis area (which has 5 vertebrae)

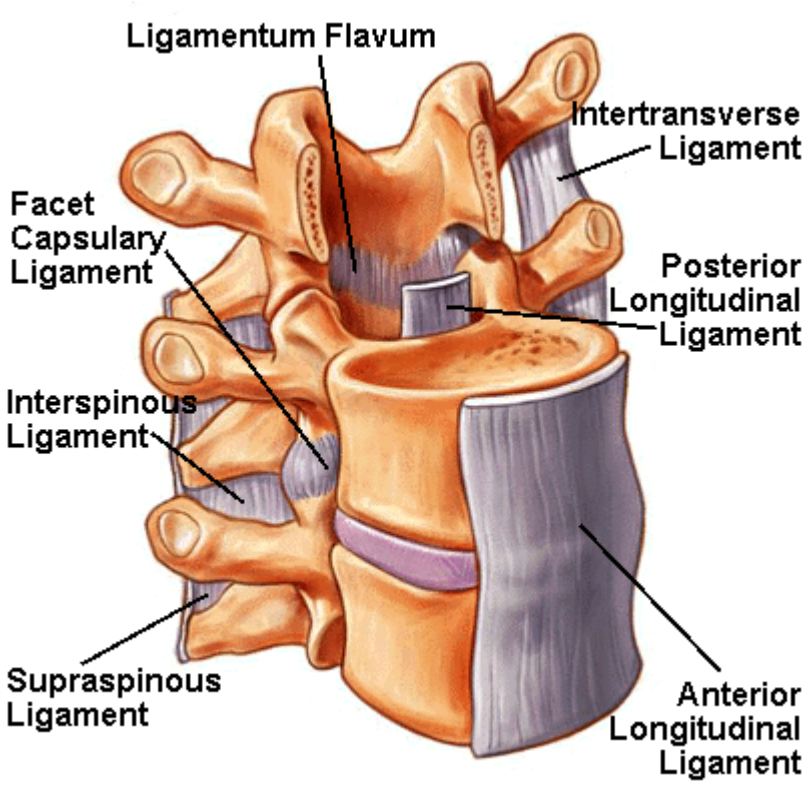
The base of the spine (called the coccyx) includes naturally fused vertebrae and is often called the tailbone.



The vertebrae are separated from one another by soft pads, called intervertebral discs, which allow the spine to bend and flex and act as shock absorbers during regular activity. These discs also prevent the vertebrae from rubbing up against each other. Each disc is made up of two parts, a soft center called the nucleus and a tough outer band called the annulus.
Throughout the length of the spine is an arch of bone called the spinal canal. Inside the spinal canal are the spinal cord and spinal nerves. The spinal cord begins at the base of the brain and ends in the lumbar spine area in a bundle of nerves known as the cauda equina. A pair of spinal nerves branch out (one to the left and one to the right) at each vertebral level. These provide sensation and movement to all parts of the body.
A lumbar laminectomy may be necessary to relieve pressure on the spinal canal.

How the Procedure is Done

The patient lies down on his or her stomach. A small incision (usually about 5-7 cm, though it may be longer depending on how many levels of the spine are affected) is made in the lower back.
The surgeon uses a retractor to expose the lamina by spreading apart the muscles and fatty tissue of the spine. A portion of the lamina is removed to uncover the ligamentum flavum - a ligament that supports the spinal column.



Next an opening is cut in the ligamentum flavum in order to reach the spinal canal. Once the compressed nerve can be seen, the cause of compression can be identified. Most cases of spinal compression are caused by a herniated disc.

However, other sources of pressure that can cause compression may include:

1 - A disc fragment (this will often cause more severe symptoms)

2 - An osteophyte or bone spurs (a rough protrusion of bone)

The surgeon retracts the compressed nerve and the source of the compression (such as the herniated disc) is removed and pressure on the spinal canal is relieved.
If necessary, the surgeon will perform a spinal fusion with instrumentation to help stabilize the spine. This occurs when a lot of bone needs to be removed

and/or when multiple levels are operated on. A spinal fusion involves grafting a small piece of bone (usually taken from the patient's own hip) onto the spine and using spinal hardware, such as screws and rods, to support the spine and provide stability.
Then the procedure is finished! The surgeon will close the incision either using absorbable sutures (stitches), which absorb on their own and do not need to be removed, or skin sutures, which will have to be removed by the surgeon after the incision has healed.

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