



## Spinal Stenosis

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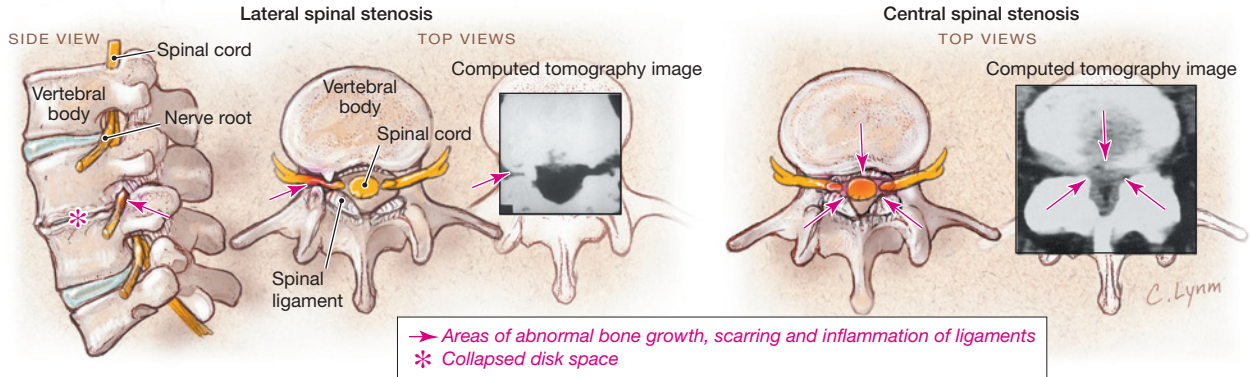
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# Spinal Stenosis

**S**pinal stenosis is a term used to describe a narrowing of the spinal canal, which contains the spinal cord and emerging nerve roots. It can occur in any portion of the spine. Because of limited space, changes in the bone (**vertebral bodies**) or soft tissues (**spinal ligaments**) can result in compression of the affected spinal cord and blood vessels. This narrowing can be **congenital** (genetic) or **acquired** (arthritis, trauma, bone disease, tumor) or a combination of both. Stenosis can be classified by location: **central** (involving the spinal cord) or **lateral** (affecting the nerve roots). Cord compression can also occur in patients with advanced cancer. The February 27, 2008, issue of JAMA includes an article about treatment options for cord compression due to metastatic cancer.



## CONDITIONS THAT RESULT IN SPINAL STENOSIS

- **Osteophytes**—formation of bony spurs associated with osteoarthritis
- **Herniated disk**—protrusion of a cartilage disk between vertebrae
- **Malignancy**—cancer
- Scarring and inflammation of supporting spinal ligaments
- **Abscess**—localized infection
- **Spondylolisthesis**—a shift or abnormal stacking of 2 vertebral bodies
- **Congenital**—genetic predisposition, which results in a developmentally small spinal canal
- Systemic bone diseases (such as Paget disease of bone)

## SYMPTOMS OF SPINAL STENOSIS

- **Pseudoclaudication**—difficulty in walking
- **Paresthesia**—abnormal skin sensations such as numbness and tingling
- Muscle weakness
- Localized or radiating pain
- Loss of bladder or bowel control

## FOR MORE INFORMATION

- American Association of Neurological Surgeons (AANS) [www.neurosurgery.org](http://www.neurosurgery.org)
- American Association of Orthopaedic Surgeons (AAOS) [www.aaos.org](http://www.aaos.org)
- North American Spine Society (NASS) [www.spine.org](http://www.spine.org)

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## DIAGNOSIS AND TREATMENT

Spinal stenosis can be diagnosed based on the history of symptoms, a physical examination, and imaging tests. Once the diagnosis is confirmed, treatment may be conservative (rest, steroid injections, medications, and exercise) or surgical. As symptoms become debilitating, surgery may be considered a treatment option. The main goal of any surgical procedure is to remove pressure from the spinal cord or nerve roots. This means that the tube of the spinal canal must be made larger by removing excess bone, ligaments, and abnormal tissues that are compressing the nerve roots. This type of surgical procedure is termed a **decompressive laminectomy** (removing a portion of the vertebral body and surrounding soft tissue). If individuals have both spinal stenosis and instability of the spine, the surgical procedure should include a decompression coupled with a **spinal fusion** (use of instrumentation supplemented with bone graft to maintain the structural support of the spinal column).

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Sources: American Association of Neurological Surgeons, American Association of Orthopaedic Surgeons, North American Spine Association

Computed tomography images: John L. Zeller, MD, PhD

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