



# Patient Information

## Narrowing in on Spinal Stenosis

**T**he spinal cord is a bundled collection of nerves that extend from the base of the skull to the lower back. This cord is encased within a narrow space—known as the spinal canal—that is surrounded by a series of bones called *vertebrae* (**vuhr**-uh-bray). *Spinal stenosis* (**stuh-no**-sus) is a condition in which there is abnormal narrowing of an area around the spinal cord, usually the spinal canal. The narrowing also can occur in the openings between the vertebrae through which nerves pass from the spinal canal to other parts of the body or the canals that encase the nerves as they branch out from the spinal cord. The result of this narrowing is extra pressure on the spinal cord or nerve roots, which in turn causes pain in various parts of the body.

Why does this narrowing occur? Often, it is the result of age-related changes in the spinal column. These include the enlarging and hardening of vertebrae, the growth of bony projections (called bone spurs), the thickening and hardening of ligaments (bands of fibrous tissue that connect the vertebrae), and the “slipping” out of place of *intervertebral* (**int-uhr-vuhr**-uh-bruhl) disks (the pads that act as shock absorbers between the vertebrae). Sometimes, another medical condition is behind the changes that result in narrowing—such as arthritis, in which either age-related breakdown or an infection causes joint swelling and pain; Paget disease of bone, which causes lengthening and weakening of the bones; or skeletal *fluorosis* (**flur-oh**-sus), a bone disease caused by excessive fluoride in the body.

Spinal stenosis also may result from a disorder that was present at birth. Examples of such disorders include *scoliosis* (**sko-lee-oh**-suhs), in which the spine is curved abnormally to the side, and *achondroplasia* (**a-kahn-druh-play**-zhee-uh), in which the spinal canal is narrower than normal.

### How do I know if I'm at risk?

Age is the main risk factor for spinal stenosis. In general, the condition is most common in men and women over age 50. Your risk also is greater if you have one of the conditions that can cause spinal stenosis—or if an immediate family member, such as a parent or sibling, has one.

### What are the warning signs?

Spinal stenosis can cause pain, cramping, numbness, or weakness in many areas of your body, including your legs, arms, neck, shoulders, back, hands, hips, and buttocks. These symptoms may be made worse by walking, standing, sitting, or exercising. The condition also can cause you to lose your balance.

A severe, but rare, type of spinal stenosis results from the compression of nerve roots in the lower end of the spinal canal and can lead to a loss of bladder or bowel control or a loss of feeling in one or both legs. If you experience these symptoms, seek medical attention immediately.

### What tests do I need?

After asking you about your medical history and performing a physical exam, your doctor may take an x-ray of your

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spine to make sure your symptoms are not being caused by a fracture, tumor, or another abnormality. To detect damage to your intervertebral disks and ligaments and to see the shape and size of your spinal canal, your doctor may want you to have magnetic resonance imaging, better known as MRI, or a computed tomography scan, referred to as a CAT scan.

Your doctor also may order a test called a *myelogram* (**mie**-uh-luh-gram), which involves the injection of a contrast dye into your spinal column, to find out if you have a bone spur, tumor, or disk that is out of place. A bone scan, which involves the injection of a radioactive material into a vein in your arm, is used to detect various bone disorders, including spinal stenosis.

### How can I avoid the problem?

If you are born with a narrowed spinal canal, there may not be a way to avoid spinal stenosis. Engaging in regular stretching and exercise, however, may decrease your risk of developing osteoarthritis and other age-related conditions that can lead to the problem. These activities can help maintain the strength of your spine, joints, and ligaments. You can reduce the load on your spine further by maintaining a healthy weight. Also, limiting stress to your back, through steps such as using a support pillow when you sit and bending at the knees when you lift heavy objects, can prevent injury. If you smoke, ask your doctor to help you quit, as smoking can speed up the problems caused by spinal stenosis.

### How is it treated?

The symptoms of spinal stenosis may be treated initially with medications in pill

form that help reduce swelling and pain. *Corticosteroid* (**kort**-ih-koh-**stir**-oyd) injections are another way to treat swelling and acute pain caused by the condition. In addition, your doctor may prescribe exercise or physical therapy to improve the stability of your spine. You might be advised to get plenty of rest, to avoid certain physical activities, or to wear a back brace or a corset for extra support.

For more serious cases, one or more surgical procedures may be required. The most common of these is decompressive *laminectomy* (**lam**-uh-**nek**-tuh-mee), in which a surgeon creates more space for the spinal cord by removing the *lamina* (**lam**-uh-nuh), or roof, of one or more vertebrae. A similar procedure involves the removal of only a small portion of the lamina. *Fusion* (**fyoo**-zhuhn), a procedure in which a surgeon fuses together two or more vertebrae to keep the spinal column more stable, is another option.

Keep in mind that surgical treatments may not repair badly damaged nerves or stop further spinal problems. Talk with your doctor about the risks and benefits of surgery.

For more information on spinal stenosis, visit the "Health Topics" section of the National Institute of Arthritis and Musculoskeletal and Skin Diseases' web page ([www.niams.nih.gov/hi/index.htm](http://www.niams.nih.gov/hi/index.htm)) and click on one of the spinal stenosis topics. ●

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