Physical Therapist's Guide to Spinal Stenosis

It's estimated that as many as 75% of us will have some form of back or neck pain at some point in our lifetime. The good news is that most of us will recover without the need for surgery—and conservative care such as physical therapy usually gets better results than surgery. Spinal stenosis is one cause of back and neck pain. It affects your vertebrae (the bones of your back), narrowing the openings within those bones where the spinal cord and nerves pass through.

What Is Spinal Stenosis?

Spinal stenosis is a narrowing within the vertebrae of the spinal column that results in too much pressure on the spinal cord (central stenosis) or nerves (lateral stenosis). Spinal stenosis may occur in the neck or in the low back.

The most common causes of spinal stenosis are related to the aging process in the spine:

- Osteoarthritis is a deterioration of the cartilage between joints. In response to this damage, the body often forms additional bone (called "bone spurs") to try to support the area. These bone spurs might cause pressure on the nerves as they exit the spinal canal.
- Normal aging and wear and tear can result in a flattening of the disks that provide space between each set of vertebrae. This narrowed space allows less room for the nerve to exit from the spinal cord, and sometimes pieces of disk material cause pressure on the nerves.

Spinal injuries, diseases of the bone (such as Paget disease), spinal tumors, and thickening of certain spinal ligaments also may lead to spinal stenosis.

In most cases, symptoms of spinal stenosis can be effectively managed with physical therapy and other conservative treatments. Only the most severe cases of spinal stenosis need surgery or more aggressive treatments.
Signs and Symptoms

Spinal stenosis may result in such symptoms as:

- Pain, numbness, tingling, or weakness in your arms and shoulders, legs, or trunk
- Occasionally, problems with bowel or bladder function

If you have spinal stenosis in the neck, you may have weakness, numbness, and pain in the arms and often in the legs, depending on which nerves are affected. You might not have any pain in the neck itself.

If you have spinal stenosis in the low back (lumbar spinal stenosis), you might have pain, numbness, and weakness in the low back and legs, but not in the arms. Your symptoms might get worse with walking and improve with sitting.

How Is It Diagnosed?

Because the symptoms of spinal stenosis are often similar to those of other age-related conditions, a careful diagnosis is important. Your physical therapist will conduct a thorough evaluation, including a review of your medical history, and will use screening tools to determine the likelihood of spinal stenosis. The therapist may:

- Ask you very specific questions about the location and nature of your pain, weakness, and other symptoms
- Ask you to fill out a body diagram to indicate specific areas of pain, numbness, and tingling
- Perform tests of muscle strength and sensation to determine the severity of the pressure on your nerves
- Examine your posture and observe how you walk and perform other activities
- Measure the range of motion of your spine and your arms and legs
- Use manual therapy to evaluate the mobility of the joints and muscles in your spine
- Test the strength of important muscle groups

If you have muscle weakness and loss of sensation or very severe pain, special diagnostic tests, such as x-rays, may be needed. Physical therapists work closely with physicians and other health care providers to make certain that an accurate diagnosis is made and the appropriate treatment is provided.

Research shows that in all but the most extreme cases (usually involving muscle weakness or high levels of pain), conservative care, such as physical therapy, has better results than surgery.

How Can a Physical Therapist Help?

Your physical therapist’s overall purpose is to help you continue to participate in your daily activities and life roles. The therapist will design a treatment program based on both the findings of the evaluation and your personal goals. The treatment program likely will be a combination of exercises.

Relieve Pain and Increase Movement

Your therapist will design:

- Special exercises to take pressure off the nerves to relieve pain
- Stretching and flexibility exercises to improve mobility in the joints and muscles of your spine and your extremities—improving motion in a joint is often the key to pain relief
- Strengthening exercises—strong trunk muscles provide support for your spinal joints, and strong arm and leg muscles help take some of the workload off your spinal joints
• Aerobic exercise to increase tolerance for activities such as walking that might have been affected by the spinal stenosis

This might sound like a lot of exercise, but don't worry: research shows that the more exercise you can handle, the quicker you'll get rid of your pain and other symptoms.

Your physical therapist also might decide to use a combination of treatments:

• Manual therapy to improve the mobility of stiff joints that may be contributing to your symptoms
• A special harness-type device attached to a treadmill that helps to reduce pressure on the spinal nerves during walking
• Posture education to help you learn to relieve pressure on the nerves by making simple changes in how you stand, walk, and sit
• Special pain treatments, such as ice or electrical stimulation, for pain that is severe and not relieved by exercise or manual therapy

Can this Injury or Condition be Prevented?

Spinal stenosis usually is a natural result of aging. Research has not yet shown us a way to prevent it. However, we do know that you can make choices that lessen the impact of spinal stenosis on your life and even slow its progression:

• Regular exercise strengthens the muscles that support your back, keeps the spinal joints flexible, and helps maintain a healthy body weight. All of these factors help reduce the wear and tear on the spine.
• Using supportive chairs and mattresses and avoiding activities that can lead to injury—such as heavy lifting—can help protect your back.

Your physical therapist can help you develop a fitness program that takes into account your spinal stenosis. There are some exercises that are better than others for people with spinal stenosis, and your therapist can educate you about what you should avoid. For instance, because walking is usually more painful than sitting, bicycling may be a better way for you to get regular physical activity. Trunk strengthening exercises often need to be modified to avoid movements such as backward bending that might cause extra pressure on the nerves.

Real Life Experiences

Deborah K. is a 67-year-old office worker with a longstanding history of back and leg pain on both sides. She recently had shoulder surgery and wonders if her physical therapist could help her back pain too. After performing an evaluation, her therapist concludes that Deborah most likely has lumbar spinal stenosis. At this time, her therapist recommends treatments to increase her overall strength, including:

• Exercises that involve flexion of the lumbar spine
• Manual physical therapy of the hips, lumbar spine, and upper back (thoracic spine) to improve motion in the joints and relieve pressure on the spine and nerves
• A home program that includes specific exercises; instructions for modifying activities such as sleeping, walking, and housework; and suggestions for pain-relieving treatments

Physical therapists often use a special harness-type device attached to a treadmill that helps to reduce pressure on the spinal nerves during walking. Deborah's therapist decides to add this "unweighting" treatment, which has been shown to improve walking tolerance in people with spinal stenosis.

The physical therapist explains to Deborah the expected course of spinal stenosis. She learns that recovery may be slow and may require patience and hard work on the part of both the patient and the physical therapist. After 6 weeks of treatment, Deborah still has some pain, but she is now able to shop for her groceries, complete all of her daily activities, and walk 20 minutes 2 times per day without any limitations.