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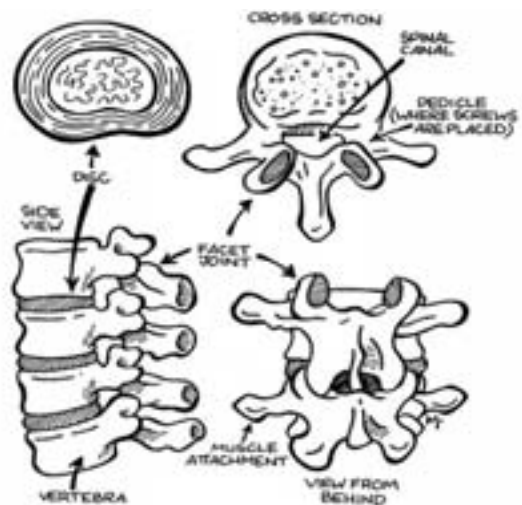
CHAPTER 6

Spinal Stenosis: What Is It and What Can You Do About It?

Spinal stenosis literally means constriction or narrowing of the spinal canal. Most commonly it is the result of the disc going flat from aging. To understand how disc degeneration leads to spinal stenosis, we need to look at how the spinal canal is built.

Attached to the back of your vertebrae are bony arches. These bony arches are comprised of the walls (pedicles) and the roof (lamina) of your spinal canal. Attached to the bony arch are the bones that project to the sides, called the transverse processes, and those that project to the back, called the spinous process. These

What is spinal stenosis? How does it occur? How do I know I have it? If I have it what can I expect? What can I do about it?



This illustration of the anatomy of the spine from the side, cross section, and from behind shows the relationship of the disc and facet joints to the spinal canal that contains the nerves.

processes are for attachment of the muscles of your spine. Finally there are bones on either side that project upward toward your head and down toward your feet at each vertebra, the facet processes. The facet processes from one vertebra form a joint, about the size of the joint in your thumb, with the facet processes of an adjacent vertebra. These joints are called facet joints, and they are located just behind and to the side of the spinal canal at the level of the disc space. If you look at the cross section of a spine through the disc space, you will see that the spinal canal is surrounded by the disc in front and the facet joints to the back and sides. There are also ligaments, which are strong attachments between bones, like the ACL (anterior cruciate ligament) in your knee, that keep the vertebrae together. They are located just in front of the spinal canal and behind it as well.

How do changes in these structures cause spinal stenosis? (See illustrations on pages 71, 73). As a degenerated disc becomes flat, it bulges and causes the bony arches of the vertebrae to come together. This in turn causes the facet joints to be pushed out of alignment and then become arthritic and enlarged. As the disc narrows, the ligaments of the spine become shortened and thick. All of these consequences of the disc degeneration, along with the bulge of the disc itself, result in narrowing of the spinal canal and nerve channels that contain the nerves going to your arms and legs.

How constricted does the spinal canal become? The size of the normal spinal canal in your low back can be pictured by making a circle with your thumb and index finger the diameter of a quarter. Now decrease the size of the circle to the diameter of a pencil to illustrate severe spinal stenosis. Picture all of the nerves for the muscles and the sensation in your legs as well as for your bowel, bladder, and sexual function going through the normal quarter-sized-diameter spinal canal, with some room to spare. Then picture these nerves being squeezed into a spinal canal the diameter of a pencil, with no room at all to spare. That is severe spinal stenosis. A combination of bulging of the disc, thickening of the spinal ligaments, and arthritic enlargement of the facet joints and vertebrae (osteophytes, or “bone spurs”) can constrict the spinal canal to the diameter of a pencil, thus preventing oxygen from reaching the spinal nerves.