

Spinal Stenosis (cervical and lumbar)

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Spinal stenosis is a disease that is caused by a gradual narrowing of the spinal canal. This narrowing happens as a result of the degeneration of both the **facet joints and the intervertebral discs**. In this condition, bone spurs, called osteophytes, which develop because of the excessive load on the intervertebral disc, grow into the spinal canal. The facet joints also enlarge as they become arthritic, which contributes to a decrease in the space available for the nerve roots. The ligaments of the spinal column, especially the ligamentum flavum, become stiff, less flexible, and thicker with age, which also contributes to spinal stenosis. These processes narrow the spinal canal and may begin to impinge and put pressure on the nerves roots and spinal cord, creating the symptoms of spinal stenosis.

Spinal stenosis may be caused by a number of processes that decrease the amount of space in the spinal canal available for the neural elements. Degenerative causes are the most common, but there are a few unusual causes of stenosis. These include calcium pyrophosphate crystal deposition, amyloid deposition, and intradural spinal tumors. The reason why stenosis causes **weakness** and **pain** is the subject of a significant amount of debate and medical research.

Some people with degenerative disease of the lumbosacral spine may be totally asymptomatic, some may complain of mild discomfort in the low back, and others may not even be able to walk. In patients who have significant spinal stenosis, they will begin to notice pain in the buttocks, thigh or leg that develops with standing or walking, and improves with rest. In some cases, a patient will complain of leg pain and weakness without having any back pain. More severe symptoms of the disorder include **numbness**, paresthesias and weakness in the lower extremities. Certain positions can alleviate the symptoms of spinal stenosis by increasing the amount of space available for the nerves. These positions usually involve flexion of the lumbar spine and bending forward. "Any positions that flex the lumbar spine are associated with resolution of symptoms."

The diagnosis of spinal stenosis begins with a complete history and physical examination. The doctor will determine what symptoms are present, what makes them better or worse, and how long they have been present for. A physical examination is essential for determining how severe the condition is, and whether or not it is causing weakness or numbness in certain parts of the body. Abnormalities in the strength and sensation of particular parts of the body that are found with a neurological examination provide the most objective evidence of chronic nerve root compression caused by spinal stenosis. There are no laboratory tests that can detect the presence or absence of a stenosis, but they may be helpful in the diagnosis of unusual causes of nerve root and spinal cord dysfunction. Routine radiographs of the lumbar spine are very helpful in determining the amount of degeneration that is present in the spine, which gives an indirect indication of whether or not spinal stenosis is present. These x-rays are also used to determine if

certain parts of the spine are unstable, which may be contributing to the symptoms of stenosis.

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