



That Aching Back

**IDENTIFYING POSSIBLE CULPRITS
OF LOWER BACK PAIN**

By Dan Kahsar, MS, PT

Eighty percent of the United States population will experience lower back pain at some point in their lives. Fifty percent will experience a recurrence of pain within three years. Only the common cold results in more work absences. These are real and astonishing statistics. Chances are high that we all will experience lower back pain at some point in our lives.

Although there is an assortment of etiologies for lower back pain, most practitioners point to the intervertebral discs as the source. Some emphasize the lumbar paraspinal

musculature and diagnose a lumbosacral strain. Others will use the blanket term lumbago, which describes the symptoms but does not identify the underlying pathology. Osteoarthritis (OA) of the spine, or spondylosis, is frequently identified as the cause of pain. Due to an aging population, lower back pain from spondylosis is becoming more prevalent.

Osteoarthritis

OA is most often seen in older individuals, but it can occur in

younger people following injury or repetitive stress leading to degeneration. Like the other joints of the body, the joints of the lumbosacral spine consist of bone, cartilage, and connective tissue.

Subchondral bone is covered by hyaline or articular cartilage consisting of both cellular and extracellular components. The cellular components are the chondrocytes that make up just 5 percent of the articular cartilage. The extracellular components make up the remaining 95 percent and consist of collagen and proteins, including chondroitin. ➤

TIPS TO AVOID BACK INJURY

Workplace lifting and bending, sports, household tasks, inactivity, obesity, smoking, and aging all have negative effects on the back. Anyone can initiate a program to promote back health and decrease chance of injury. Changing habits, protecting the back, and improving overall health will minimize the risk. Here are a few suggestions to get started:

Exercise

- Exercising regularly is vital to maintaining strong back muscles. A physician or physical therapist can develop a routine that will stretch and strengthen back muscles.
- Aerobic workouts can help maintain a healthy weight and may be as important to back health as exercises targeting specific abdominal and back muscles.
- Always stretch and warm up before beginning a workout.

Lifting

- When something heavy or awkward needs moving, plan ahead and ask for help or use a lifting device.
- Never hurry when lifting. Position feet about shoulder-width apart to provide a solid base of support. When lifting, tighten the stomach muscles, keep the object close to the body, bend the knees, and push up with the leg muscles. Pointing toes in the direction the object needs to be moved and then pivoting in that

direction will help avoid twisting. Keep knees slightly bent to help maintain balance.

- If traveling with heavy bags, stand next to the bag to start, bend the knees, take hold of the bag handle, and then straighten up using the legs, not the back.

Posture

- Maintain the body's natural arch when standing and sitting to prevent back problems. Slouching and bending forward can put stress on the back.
- When sitting, select a chair that supports the lower back. Lumbar pillows can help maintain the lumbar curve and make sitting more comfortable.
- Inactivity increases muscle tension and weakness, so take breaks and avoid sitting for long periods. Get up, stand, and stretch at least hourly.
- Adjust work surfaces to avoid leaning forward.
- In a car, maintain the natural alignment of the lower back with a lumbar-support pillow and position the seat so the knees are slightly bent.
- Sleeping in a poor position can also increase back problems. Place a pillow or wedge under the knees when sleeping in a supine position. When lying on the side, place a pillow between the knees. Use a small pillow to help maintain a natural neck curve.

Chondroitin is an important structural component of cartilage and provides much of its resistance to compression. Deleterious changes in cartilage metabolism eventually result in the “bone-on-bone” phenomenon so commonly seen in advanced arthritis.

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Overlooked Conditions

Facet joints, which connect the vertebrae, are also susceptible to degenerative disease. Excessive force-bearing leads to cartilaginous degeneration. When an intervertebral disc degenerates, the forces once supported by the discs are displaced onto other structures. Those structures are typically the lumbosacral facet joints.

The intervertebral discs in the lumbar region are most commonly involved in OA of the spine and those most prone to degeneration because of their increased force-bearing responsibilities. When disc degeneration occurs at these levels, these facet joints begin to assume some of the force-bearing burden and begin to degenerate.

Early facet joint degeneration can cause lower back pain. This pain is usually localized to the lower back or top of the buttock and is described as dull, achy pain. If there is significant muscular spasm accompanying deeper joint pathology, the pain is described as stabbing or more intense.

Causes of Pain

Frequently, there will be a clear cause or event responsible for the onset of the pain. The mechanism is frequently an activity that utilizes repetitive extension

(bending backward) and/or rotation of the lumbosacral spine.

Degenerative changes can lead to facet joint overgrowth, or hypertrophy, which can result in narrowing of the nerve canals (spinal stenosis). The diagnosis of lumbosacral stenosis can be reached by patient history alone and confirmed by advanced imaging studies, such as computed tomography (CT) or magnetic resonance imaging (MRI) scans.

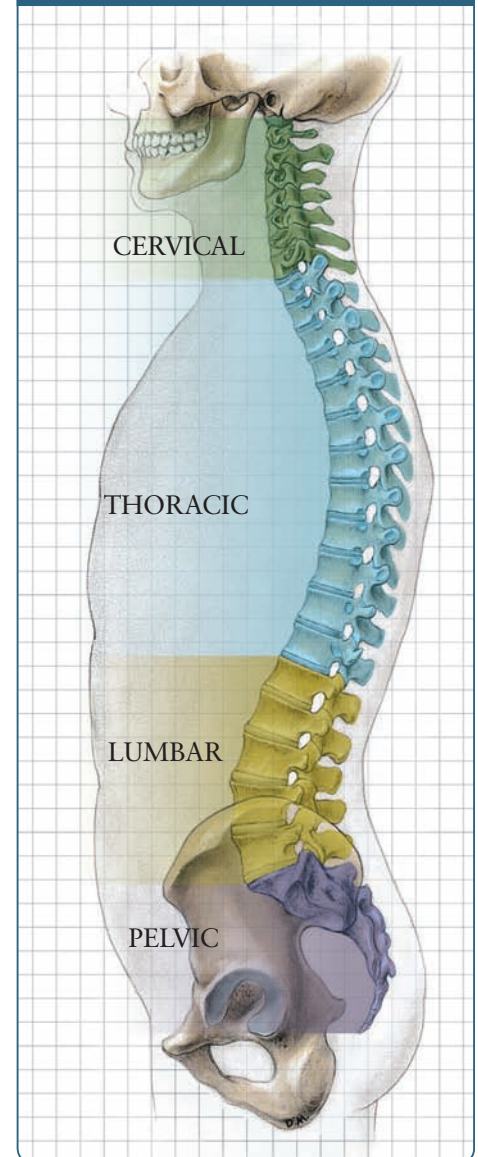
A patient with classic central canal stenosis will usually report low back pain greater than leg pain. The pain is on either side of the spine, and symptoms are exacerbated with descending a flight of stairs. An individual descending a flight of stairs would typically bend slightly backward or extend the lumbar spine and thus minimize the likelihood of falling forward. Conversely, symptoms are typically alleviated with ascending steps or other activities that result in a slight flexed forward posture, such as pushing a shopping cart.

Course of Treatment

Medical care for spondylosis includes nonsteroidal anti-inflammatory medications, muscle relaxants, and physical therapy. Physical therapy consists of specific stretching/range-of-motion exercises, as well as strengthening exercises aimed at the superficial and deep paraspinal musculature, plus the pelvic and gluteal muscles. Manual therapy is also frequently utilized. Manual therapy is a hands-on mobilization technique that “moves” the facet joints gently and is performed by trained spine therapists.

If these treatments are not effective, interventional spine injections are considered. Typically, interarticular facet joint injections are the first-line treatment. Under fluoroscopic guidance, a physician trained in interventional spine procedures guides a spinal needle directly into the arthritic lumbosacral facet joint. This injection usually consists of an anesthetic-steroid mixture. Within three to five days, the typical onset of action for corticosteroids, the patient experiences significant relief of symptoms. 🧠

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