Understanding Back Pain

Low Back Pain

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If you have lower back pain, you are not alone. Nearly everyone at some point has back pain that interferes with work, routine daily activities, or recreation. Americans spend at least $50 billion each year on low back pain, the most common cause of job-related disability and a leading contributor to missed work. Back pain is the second most common neurological ailment in the United States â€" only headache is more common. Fortunately, most occurrences of low back pain go away within a few days. Others take much longer to resolve or lead to more serious conditions.

Acute or short-term low back pain generally lasts from a few days to a few weeks. Most acute back pain is mechanical in nature â€" the result of trauma to the lower back or a disorder such as arthritis. Pain from trauma may be caused by a sports injury, work around the house or in the garden, or a sudden jolt such as a car accident or other stress on spinal bones and tissues. Symptoms may range from muscle ache to shooting or stabbing pain, limited flexibility and/or range of motion, or an inability to stand straight. Occasionally, pain felt in one part of the body may â€œradiateâ€? from a disorder or injury elsewhere in the body. Some acute pain syndromes can become more serious if left untreated.

Chronic back pain is measured by duration â€" pain that persists for more than 3 months is considered chronic. It is often progressive and the cause can be difficult to determine.

What structures make up the back?

The back is an intricate structure of bones, muscles, and other tissues that form the posterior part of the bodyâ€™s trunk, from the neck to the pelvis. The centerpiece is the spinal column, which not only supports the upper bodyâ€™s weight but houses and protects the spinal cord â€" the delicate nervous system structure that carries signals that control the bodyâ€™s movements and convey its sensations. Stacked on top of one another are more than 30 bones â€" the vertebrae â€" that form the spinal column, also known as the spine. Each of these bones contains a roundish hole that, when stacked in register with all the others, creates a channel that surrounds the spinal cord. The spinal cord descends from the base of the brain and extends in the adult to just below the rib cage. Small nerves (â€œrootsâ€?) enter and emerge from the spinal cord through spaces between the vertebrae. Because the bones of the spinal column continue growing long after the spinal cord reaches its full length in early childhood, the nerve roots to the lower back and legs extend many inches down the spinal column before exiting. This large bundle of nerve roots was dubbed by early anatomists as the cauda equina, or horseâ€™s tail. The spaces between the vertebrae are maintained by round, spongy pads of cartilage called intervertebral discs that allow for flexibility in the lower back and act much like shock absorbers throughout the spinal column to cushion the bones as the body moves. Bands of tissue known as ligaments and tendons hold the vertebrae in place and attach the muscles to the spinal column.

Starting at the top, the spine has four regions:

- The seven cervical or neck vertebrae (labeled C1â€"C7),
- The 12 thoracic or upper back vertebrae (labeled T1â€"T12),
- The five lumbar vertebrae (labeled L1â€"L5), which we know as the lower back, and
- The sacrum and coccyx, a group of bones fused together at the base of the spine.

The lumbar region of the back, where most back pain is felt, supports the weight of the upper body.

What causes lower back pain?

As people age, bone strength and muscle elasticity and tone tend to decrease. The discs begin to lose fluid and flexibility, which decreases their ability to cushion the vertebrae.

Pain can occur when, for example, someone lifts something too heavy or overstretches, causing a sprain, strain, or spasm in one of the muscles or ligaments in the back. If the spine becomes overly strained or compressed, a disc may rupture or bulge outward. This rupture may put pressure on one of the more than 50 nerves rooted to the spinal cord that control body movements and transmit signals from the body to the brain. When these nerve roots become compressed or irritated, back pain results.

Low back pain may reflect nerve or muscle irritation or bone lesions. Most low back pain follows injury or trauma to the back, but pain may also be caused by degenerative conditions such as arthritis or disc disease, osteoporosis or other bone diseases, viral infections, irritation to joints and discs, or congenital abnormalities in the spine. Obesity, smoking, weight gain during pregnancy, stress, poor physical condition, posture inappropriate for the activity being performed, and poor sleeping position also may contribute to low back pain. Additionally, scar tissue created when the injured back heals itself does not have the strength or flexibility of normal tissue. Buildup of scar tissue from repeated injuries eventually weakens the back and can lead to more serious injury.

Occasionally, low back pain may indicate a more serious medical problem. Pain accompanied by fever or loss of bowel or bladder control, pain when coughing, and progressive weakness in the legs may indicate a pinched nerve or other serious condition. People with diabetes may have severe back pain or pain radiating down the leg related to neuropathy. People with these symptoms should contact a doctor immediately to help prevent permanent damage.