

## Why Does It Hurt?

### Potential causes

"Your back is an intricate structure composed of bones, muscles, ligaments, tendons, and discs – the cartilage-like pads that act as cushions between the segments of your spine. Back pain can arise from problems with any of these component parts. In some people, no specific cause for their back pain can be found."<sup>1</sup>

#### Strains

"Back pain most often occurs from strained muscles and ligaments, from improper or heavy lifting, or after a sudden awkward movement. Sometimes a muscle spasm can cause back pain."<sup>1</sup>



#### Injuries

"Spine injuries, such as sprains and fractures, can cause either short-lived or chronic pain. Sprains are tears in the ligaments that support the spine, and they can occur from twisting or lifting improperly... Less commonly, back pain may be caused by more severe injuries that result from accidents or falls."<sup>2</sup>

#### Structural Problems

In some cases, back pain may be caused by structural problems, such as:

- **Bulging or ruptured/herniated discs.** "Discs act as cushions between the vertebrae in your spine. Sometimes, the soft material inside a disc may bulge out of place or rupture and press on a nerve."<sup>1</sup> "When one or more of the discs that cushion the bones of the spine are damaged, the jelly-like center of the disc leaks, causing pain."<sup>3</sup> "Many people who have bulging or herniated discs experience no pain from the condition."<sup>1</sup>
- **Sciatica.** "If a bulging or herniated disc presses on the main nerve that travels down your leg, it can cause sciatica – sharp, shooting pain through the buttock and back of the leg."<sup>1</sup>
- **Arthritis.** "The joints most commonly affected by osteoarthritis are the hips, hands, knees, and lower back. In some cases, arthritis in the spine can lead to a narrowing of the space around the spinal cord, a condition called *spinal stenosis*."<sup>1</sup> Other various forms of arthritis, including *rheumatoid arthritis* and *ankylosing spondylitis*, can also contribute to back pain.<sup>2</sup>
- **Skeletal irregularities.** "Back pain can occur if your spine curves in an abnormal way. If the natural curves in your spine become exaggerated, your upper back may look abnormally rounded or your lower back may arch excessively."<sup>1</sup> "These irregularities include *scoliosis*, a curving of the spine to the side; *kyphosis*, in which the normal curve of the upper back is severely rounded; *lordosis*, an abnormally accentuated arch in the lower back; *back extension*, a bending backward of the spine; and *back flexion*, in which the spine bends forward."<sup>4</sup>
- **Osteoporosis.** "Compression fractures of your spine's vertebrae can occur if your bones become porous and brittle."<sup>1</sup> "Caucasian women of northern European heritage are at the highest risk of developing the condition."<sup>4</sup>
- **Spondylolisthesis.** "This occurs when one or more bones of the spine slip out of place."<sup>3</sup> African American women are two to three times more likely than white women to develop this condition.<sup>2</sup>
- **Disc degeneration.** "Perhaps the most common mechanical cause of back pain is a condition called intervertebral disc degeneration, which simply

means that the discs located between the vertebrae of the spine are breaking down with age. As they deteriorate, they lose their cushioning ability. This problem can lead to pain if the back is stressed.”<sup>2</sup>

“A person with spinal degeneration may experience stiffness in the back upon awakening or may feel pain after walking or standing for a long time.”<sup>4</sup>

## Other Problems

- **Fibromyalgia.** “Fibromyalgia is a chronic disorder characterized by widespread musculoskeletal pain, fatigue, and multiple ‘tender points,’ particularly in the neck, spine, shoulders, and hips. Additional symptoms may include sleep disturbances, morning stiffness, and anxiety.”<sup>4</sup>
- **Stress.** “Although the causes of back pain are usually physical, emotional stress can play a role in how severe pain is and how long it lasts. Stress can affect the body in many ways, including causing back muscles to become tense and painful.”<sup>2</sup>
- **Other.** Other causes of back pain include pregnancy; kidney stones or infections; and endometriosis, which is the buildup of uterine tissue in places outside the uterus.<sup>2</sup>

## Rare but Serious Conditions

In rare cases, back pain may be related to:

- **Cauda equina syndrome.** “This is a serious neurological problem affecting a bundle of nerve roots that serve your lower back and legs. It can cause weakness in the legs, numbness in the ‘saddle’ or groin area, and loss of bowel or bladder control.”<sup>1</sup>
- **Cancer in the spine.** “A tumor on the spine can press on a nerve, causing back pain.”<sup>1</sup> Tumors are relatively rare causes of back pain. Occasionally,

tumors begin in the back, but more often they appear in the back as a result of cancer that has spread from elsewhere in the body.<sup>2</sup>

- **Infection of the spine.** “If a fever and a tender, warm area accompany back pain, the cause could be an infection.”<sup>1</sup> Although they are not common causes of back pain, infections can cause pain.<sup>2</sup> *Spondylitis* refers to chronic back pain and stiffness caused by a severe infection to or inflammation of the spinal joints. Other painful inflammations in the lower back include *osteomyelitis* (infection in the bones of the spine), *sacroiliitis* (inflammation in the sacroiliac joints<sup>4</sup>), and *discitis* (infection in the intervertebral disc space<sup>2,5</sup>).

## Sources:

1. Mayo Clinic (2008). Back Pain [on-line]. Retrieved April 22, 2009. From <http://www.mayoclinic.com/health/back-pain/DS00171>.
2. National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) (2005). Handout on health: Back pain [on-line]. Retrieved April 22, 2009. From [http://www.niams.nih.gov/Health\\_Info/Back\\_Pain/default.asp](http://www.niams.nih.gov/Health_Info/Back_Pain/default.asp).
3. National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) (2006). What is back pain? Fast facts: An easy-to-read series of publications for the public [on-line]. Retrieved April 22, 2009. From [http://www.niams.nih.gov/Health\\_Info/Back\\_Pain/back\\_pain\\_ff.asp](http://www.niams.nih.gov/Health_Info/Back_Pain/back_pain_ff.asp).
4. National Institute of Neurological Disorders and Stroke (2009). Low back pain fact sheet [on-line]. Retrieved April 22, 2009. From [http://www.ninds.nih.gov/disorders/backpain/detail\\_backpain.htm](http://www.ninds.nih.gov/disorders/backpain/detail_backpain.htm).
5. Wikipedia (2009). Discitis [on-line]. Retrieved June 2, 2009. From <http://en.wikipedia.org/wiki/Discitis>.