

## Pain in the Back

Any movement – or series of movements – which places abnormal stress or abnormal loading on the spine can injure it. This may be a sudden overload while lifting a very heavy weight or it may be a cumulative overload if you repeatedly pull or lift a weight at an awkward angle.

In principle, your back is a very strong structure. It can withstand a great deal of pressure. However, it can become vulnerable to strains in certain situations. Often, the strain is caused by pressure – or loading – that may seem trivial and requires less than your normal back strength.

Back pain, whether sudden or gradual, may be felt in one specific area of your back or it may feel widespread over the whole lower back. If the injury is sudden, it is likely to cause a severe stab of pain, which may subside quickly or may persist. A more gradual pain usually starts mildly, but builds up to the stage of causing increasing discomfort. You may find that certain movements or positions aggravate your pain, while others relieve it. For example, your back may hurt when you are at rest, when you cough and when you turn over in bed at night. However, it may stop hurting when you lay flat, when you are walking around, and when you bend forward, backward or sideways.

You may also feel pain in one or both legs spreading down from your lower back into your groin or down the back of your leg. The pain may spread to your knee or it may go down to your foot. The leg pain may also get worse when your back is moved in various ways. The leg pain is often, but not always, related to back pain.

Because of the complex structure and function of your spine, there are many different tissues that can be damaged in a back injury. A severe compression injury, like a fall from a height, can cause bone to fracture. A repetitive twisting injury can fracture the bony arch at the back of the spine. Abnormal movements can strain any of the ligaments, tendons, and muscles guarding the spinal joints. If a spinal joint is damaged, the muscles over it usually go into spasm, which causes additional pain. The tiny joints in the back of the spine, which are called facet joints, help control rotation of the spine and provide support. Problems with these joints are a frequent cause of back pain. This pain is often felt in the groin and thigh (usually not past the knee).

The discs between the vertebral bodies (in the front) can be damaged and cause pain in a variety of ways. The disc is composed of a strong outer part (the annulus fibrosus) surrounding the soft nucleus pulposus. Degeneration or injury to the outer annulus is thought to be a significant source of pain in the back.

Additionally, a rise in pressure over a degenerated disc can push the disc out from between the vertebrae, or it can create enough pressure to push the nucleus through the annulus, cracking its outer ring (a herniated or "slipped" disc). This usually happens in the back of the disc and often causes irritation or damage of the nerves in that area, which can cause severe pain in your leg.

