LOWER BACK PAIN IN ATHLETES

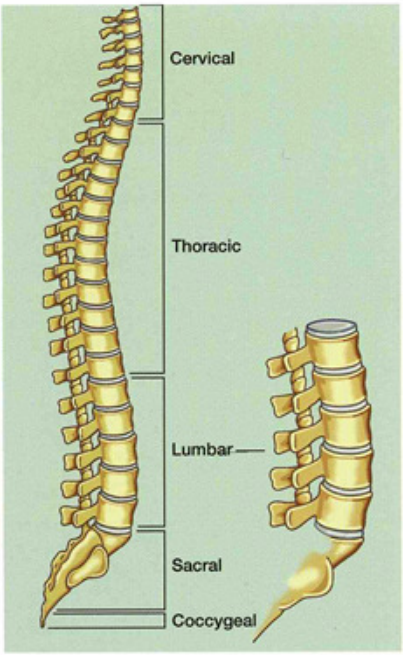
AOSSM SPORTS TIPS

HOW COMMON IS LOW BACK PAIN?

Low back pain is a very common problem in industrialized countries, affecting over 70% of the working population. Back pain is also common in such sports as football, soccer, golf, rowing and gymnastics.

WHAT ARE THE STRUCTURES OF THE BACK?

The spine is composed of three regions from your neck to the lower back. The cervical region corresponds to your neck, the thoracic region is the mid-back (or back of the chest) and the lumbar area is the lower back. The lumbar area provides the most motion and works the hardest in supporting your weight, and enables you to bend, twist and lift.



Each area of the spine is composed of stacked bony vertebral bodies with interposed cushioning pads called discs. The vertebral bodies provide protection for the spinal cord and nerve roots that exit the spinal cord. Between each vertebral body, the disc serves as a shock absorber, giving you the flexibility to move. Each disc consists of a jelly-like fluid filled center or nucleus surrounded by a stiff ligament-like outer ring, called the annulus. This hydraulic type of system enables you to perform heavy lifting and twisting tasks by moving fluid in and out of the discs. However, this hydraulic ability of the disc diminishes with time and can lead to injury.

WHAT STRUCTURES OF THE BACK CAN CAUSE PAIN?

Low back pain can come from all the spinal structures. The bony elements of the spine can develop stress fractures, or in the older athlete, arthritic changes which may pinch the nerve roots. The annulus has a large number of pain fibers, and any injury to this structure, such as a sprain, bulging disc or disc herniation will result in pain. Finally, the surrounding muscles and ligaments may also suffer an injury, leading to pain.

HOW IS THE LOWER BACK INJURED?

Injuries to the lower back can be the result of improper conditioning and warm-up, repetitive loading patterns, excessive sudden loads and twisting activities. Proper body mechanics and flexibility are essential for all activities. To prevent injury, it is important to learn the proper technique in any sporting activity. Improper mechanics lead to increased loads on the lower spine, making it more susceptible to injury.

WHAT TESTS CAN BE DONE TO DIAGNOSE THE CAUSE OF BACK PAIN?

A good history and physical exam by your physician will provide the most information leading to an accurate diagnosis of lower back pain. Several different diagnostic tests are also helpful to aid in this assessment. X-rays reveal any abnormalities of the vertebral bodies, such as arthritis, fractures and slippage. MRIs best identify degeneration, bulging and herniation of the discs. A stress fracture is best seen with a bone scan.

WHAT ARE THE COMMON INJURIES SUFFERED BY THE LOWER BACK?

Mechanical low back pain is the result of an injury to the surrounding muscles of the lower back. It is most likely due to poor conditioning and body mechanics, as well as lack of adequate warm-up.

A small tear or sprain of the annulus is usually caused by a sudden movement or lifting an excessive load. Since this structure contains a large number of pain fibers, this is quite painful. In addition to the back pain, there may also be pain along the sciatic nerve into the buttocks.

A bulging disc occurs as the disc degenerates and begins to wear out and the annulus weakens as the jelly-like fluid begins to push out, causing pain. The pain is similar to a torn annulus, but the degeneration and bulging will appear on a MRI.

With a disc herniation, the nucleus is squeezed through the annulus into the spinal canal. It may press against the nerves causing pain, numbness, tingling and weakness. While an isolated excessive load may cause this complete herniation, it is usually the result of multiple lesser injuries that lead to the disc degeneration and final rupture.

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