LOWER BACK PAIN IN ATHLETES

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Lower back pain in athletes covers multiple conditions and can be caused by a variety of injuries, ranging from strained muscles and ligaments to bony abnormalities. Although athletes from multiple sports are affected, a common theme is that it involves those who perform repetitive bending motions. Injuries to the *lumbar* area (lower part of the spine) can be *acute* (occurring suddenly) or *chronic* (occurring gradually over time). Lower back pain can further be categorized as mechanical, discogenic, due to vertebral body fractures, and spondylolytic (please refer to fact sheet on "Spondylosis").

Mechanical injuries are common, and involve strain to the muscles or ligaments of the back from overuse. Typical symptoms are soreness over the injured area that can radiate; for instance, pain due to injury of the sacroiliac joints (the joints between the tailbone and pelvis) can travel into the buttocks. These injuries heal with time and modifying activity.

Discogenic pain refers to injury to the spinal discs, which function as cushions in between the *vertebrae* or spine bones. When the outside of the disc becomes inflamed or torn, the athlete can experience pain. Overtime, the jelly-like substance inside the disc can push through the tears and bulge onto surrounding nerves, causing further pain. In severe cases, this is referred to as a "herniated disc." Symptoms are often described as a burning or electric sensation that travels down one leg, sometimes with tingling in the toes (commonly referred to as "sciatica"). The pain can worsen with bending at the waist or raising the legs. Disc herniation is rare in young athletes.

Vertebral body fractures, specifically involving the cartilage ring at the edge of the vertebrae (referred to as the *ring apophysis*), are much rarer but have been reported in athletes in volleyball, gymnastics, and weightlifting. The pain and abrupt onset often mimics that of a herniated disc but typically lacks the *neurologic* signs (symptoms affecting the nerves). Muscle spasms often accompany this injury. This injury is rare in the spectrum of lower back pain.

If the back pain is accompanied by so-called "red flag" symptoms such as fever, night pain, incontinence (the inability to control the bladder or bowels), weight loss and fatigue, numbness in the groin area, or other neurological abnormalities, urgent medical evaluation should be obtained, as a more serious condition may be responsible for the pain.

The diagnosis should be made after a thorough exam. X-rays are usually not needed, but may be obtained to evaluate the spine's alignment, joint spaces, and movement with bending. Persistent cases may require magnetic resonance imaging (MRI) or bone scans to look for certain conditions, such as *vertebral* (spine bone) stress fractures, or blood work to rule out less common diseases that target the joints and muscles.

Treatment starts with rest, ice, and stretching. Anti-inflammatory medications (e.g., ibuprofen or naproxen) may be prescribed; however, these should be avoided in cases of fracture as they may delay bone healing.

Returning to the activity or sport depends on the nature and severity of injury. Seeking earlier treatment may result in earlier return and avoid the development of a more serious injury. Physical therapy is often necessary to address muscular imbalances or weaknesses of abdominal and posterior spinal muscles. To prevent reinjury, it is important not only to fully warm up and stretch before activity, but to also work on good upright posture while standing, sitting, lifting and performing exercises, to remove additional stress on the spine. Proper technique will also reduce strain over the spinal structures.

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References

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