

Disc Related Lower Back Pain.

What is disc pain?

Low back pain is a common and there are many causes. Finding the exact cause of the pain can help guide treatment and management. Muscle strains, joint related problems, bony pathologies, disc problems and other conditions such as infections are all causes of low back pain. However, a common cause of low of back pain can be due to 'degeneration', or wearing out of the lumbar intervertebral discs. The resulting condition is called or lumbar disc pain.

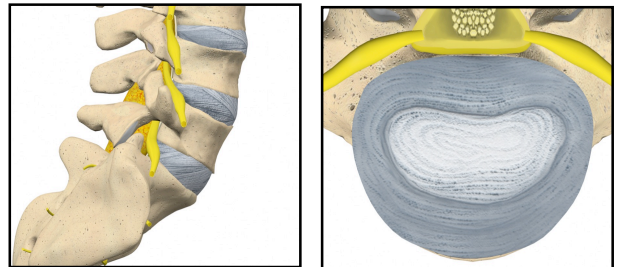


Figure 1: Disc

Between each vertebra (the bones which make up the spinal column), are intervertebral discs (See Figure 1 – Grey Structure). Each disc consists of a tough outer fibrous layer that surrounds a gel-like nucleus.

Figure 1: Lumbar Disc.

Repeated overuse, during bending, lifting and sporting activities such as football can lead to wear and tear or degeneration of the outer layer of the disc. If this degeneration is sufficient, the gel-like nucleus can 'prolapse' outwards from the disc (See Figure 2 & 2A). Occasionally, a single specific incident can cause the disc to prolapse. Often this 'prolapsed' nucleus can impinge, or put pressure on nerves and other structures, which can cause significant pain (See Figure 3).

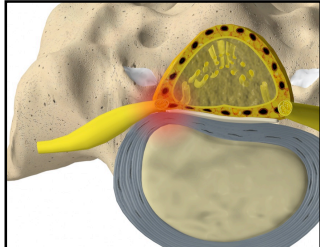


Figure 2: Prolapsed Disc.

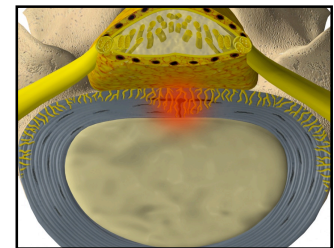


Figure 2A: Lumbar Disc Injury.

Disc injuries occur most commonly in the lumbar spine, at the bottom of the back. The term 'slipped disc', 'popped disc' or 'herniated disc', are often terms used to describe disc related pain. These terms are not precise and the term 'prolapse' or 'protrusion' better describes disc related low back pain.

What causes disc pain?

The exact cause of lumbar disc pain is not well understood. There are differences that can be seen between a normal lumbar disc and a degenerative lumbar disc. Most often these 'differences' are seen on an MRI scan. However, lumbar disc degeneration is part of the normal aging process and most players who have degenerative discs (seen on a scan or x-ray) usually have no symptoms. These are commonly older players – 45 years plus. Younger players rarely have degenerative disc problems. Often a specific incident or accident can cause a disc prolapse. This can be as simple as bending and lifting a heavy object or tackling while playing football.

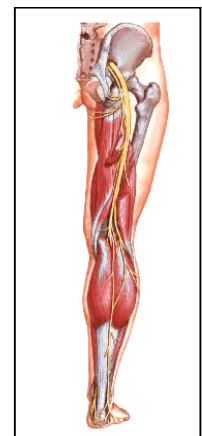


Figure 3: Sciatic Nerve.

What are the signs and symptoms?

The player will often remember a specific incident. Usually a specific movement (most commonly bending, twisting or lifting) will cause a lumbar disc to prolapse. This can be a simple movement that the player has done many times previously with no problems. The degeneration in the disc prior to this injury has weakened the disc and the movement is enough to cause damage into the disc itself. The nucleus material 'leaks out' of the disc and 'impinges' on nerves and other pain sensitive structures (See Figure 2A). Often the onset of pain in the lower back is sudden and severe.

Coughing and sneezing increases the pressure within the disc and makes the pain worse. Frequently changing position relieves the pain, but it can be made worse by sustained flexed postures such as sitting, driving and standing. Often the disc prolapse 'impinges' on the nerve root, causing pain down one of the legs (See Figure 4). The nerve root that is affected (impinged) produces pain in the sciatic nerve distribution, resulting in the condition known as sciatica. This can produce pain in the buttock, the hamstrings, the back of the knee and the calf or the heel.

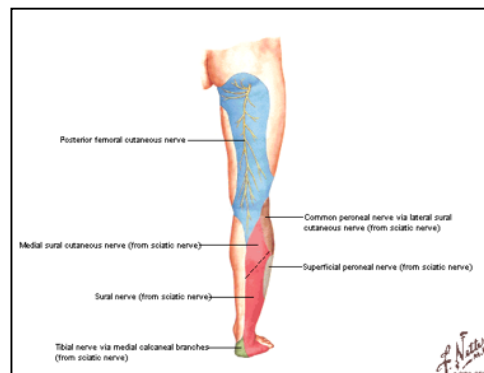


Figure 4: Pain Pattern.

The player will have limited and restricted movement, pain, possibly pins and needles and be unable to train or play if the symptoms are severe.



How is disc related low back pain diagnosed

Diagnosis of disc related low back pain can be difficult. When a sports injury professional (a sports doctor or physiotherapist) examines a player there are a number of specific findings that could potentially indicate a lumbar disc injury. However, these findings can also be seen in players with other types of back pain as well (e.g. muscle strains and joint related problems). An MRI (Magnetic Resonance Imaging) scan could be performed. This scan can show any damage to the disc, the nerves and muscles. Often an MRI scan can help a sports doctor or orthopaedic surgeon make a decision on the best treatment plan for the player and/or how long the injury is likely to take to recover.

What can the player do?

Pain relief and anti-inflammatory medication is often necessary for a prolapsed disc. Initially, ice to the affected area or joint, can help reduce inflammation and pain (See Figure 5). The acute pain normally lasts for a few days and a player should rest from running and training initially and then gradually return to training, increasing the amount of activity over a period of time. The training and playing should be guided by

pain and symptoms. Any player who has suspected disc related low back pain should see a sports injury professional, such as a sports doctor or physiotherapist, who will be able to diagnose the pain and recommended a specific treatment.



Figure 5: Ice.

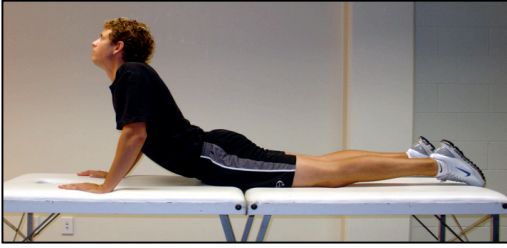


Figure 7: Extension Exercises.

It is also important for the player to take good care of their lower back in future. Good posture and a strong lower back and abdominal muscles are important to prevent further episodes of low back pain occurring.



Figure 8: Lumbar Roll.

What can the sports injury professional do?

Low back pain, as a result of disc related injuries are common. Players should understand that most episodes of back pain resolve, usually within a few weeks.

Understanding the cause of a player's back pain is the key to proper treatment. Because back pain is sometimes difficult to treat, a better understanding of the cause of the problem will assist players in their recovery from muscle strains, joint injuries and pain. A sports injury professional will be able to correctly diagnose the problem and advise them on the correct management plan.

Initially, pain relief and anti-inflammatory medications can be used when the symptoms of pain are strong. These medications can also help increase a player's movement and function. A physiotherapist could use sports massage techniques to help to reduce the muscle spasm associated with a disc injury (See Figure 6).



Figure 6: Sports Massage.

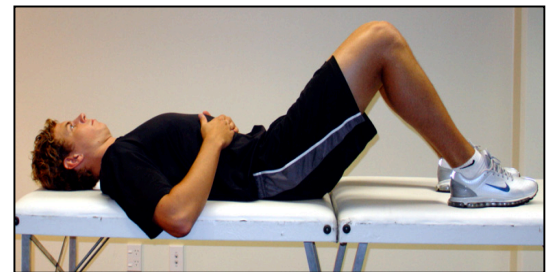


Figure 9: Abdominal Strengthening.

The use of joint mobilisation and manipulation techniques could be used by a physiotherapist. The prescription of a rehabilitation programme (involving stretching and strengthening exercises) will also be discussed. These exercises will help prevent the problem from occurring in the future. The use of extension exercises are often prescribed for a player who has a disc injury (See Figure 7). Postural advice and a lumbar roll may be given (See Figure 8). Emphasis on lower back and abdominal strengthening will also be addressed – specific exercises may be given to the player to help prevent another injury from occurring (See Figure 9). Occasionally, if a player's symptoms are severe and if the pain and neurological symptoms are not improving, a sports doctor will refer a player to an orthopaedic surgeon for an opinion on whether surgery is required. There are many types of surgery – depending on a player's exact symptoms (See Figure 10). Surgery is usually the last option in managing a player's disc pain. The subsequent rehabilitation and recovery will vary depending on the type of surgery. It could mean several months off training and playing football. The orthopaedic surgeon will guide the player on their return to gentle exercise, running, training and ultimately playing. If surgery is not required a sports injury professional will provide similar advice on a return to football.



Figure 10: Spinal surgery.