

# Soft Tissue Injuries

The term 'soft tissue injury' is often used in medicine to describe sporting injuries, but what are the soft tissue injuries that are referred to? Mainly ligaments, tendons and muscles.

Injuries to these structures may be **haematoma** formations (bleeding in or around the structure) or there may be actual tears of the structure. Ligament and muscle tears are generally described in terms of grades:

**Grade 1:** Usually mild, and involve up to 10 percent of the muscle or ligament

**Grade 2:** Tears are moderate tears, involving 10-90 percent of the structure

**Grade 3:** Tears are severe and indicate complete rupture of that muscle or ligament.

Tendon tears are usually described as partial or complete.

It seems extraordinary that we can completely rupture muscles, tendons and ligaments but we are constantly surrounded by instances of such injuries.

These can even be common injuries – such as *Anterior Cruciate Ligament* rupture. Less commonly highlighted but just as problematic is the complete rupture of the Achilles tendon – usually in the more middle-aged athlete, and especially tennis players.

Probably the most common soft tissue injury is the 'sprained ankle'. As above, these may be grade 1,2 or 3 tears of the ligaments about the ankle. Fortunately, most ankle injuries are grade 1 or grade 2. Usually, it is the ligaments on the outer (lateral) side of the ankle that are damaged.

There are three main ligaments about the ankle, but there is a weak ligamentous structure that defines the joint, known as the *capsule*. The capsule is often torn in moderate to severe injuries and this damage contributes to the pain and swelling.

Tears may be associated with bleeding. Bleeding (haematoma formation) may also occur after a direct blow. The most common example is the '*corked thigh*' when the thigh is hit focally by an object like an opponent's knee. It has been suggested that the more relaxed the muscle at the time of impact, the more severe the injury. There is a spectrum of injury ranging from mild bruising to severe tearing of the muscle with significant localized haematoma (bleeding).



The normal treatment of corks thighs is **R.I.C.E.** – Rest, Ice, Compression & Elevation but it is often useful to contain the bleeding by strapping the knee in the flexed position. This is also more conducive to maintaining a good range of flexion.

The severity of injuries to the quadriceps (Anterior thigh) is often underestimated and frequently undertreated. Bleeding may occur within the muscle or around the muscle tissue and blood may collect as a large mass. Bleeding within the muscle tends to cause more severe and prolonged symptoms. Attempts have been made to drain the pool of blood but even with ultrasound control this is difficult and often not possible when the blood has coagulated.

Sportspeople often assume that a 'corky' will get better after a week or two and there will be no further problems. Some corkies can be extremely debilitating, however, and may swell enormously soon after the initial injury. They can cause extreme pain, have virtually no muscle power and take months to rehabilitate.

Sometimes the initial injury is not too bad, but then there is a second event, such as another blow, bending the knee too vigorously, or deep massage, which can cause a secondary bleed which can be far worse than the original, setting the recovery process back weeks or even months.

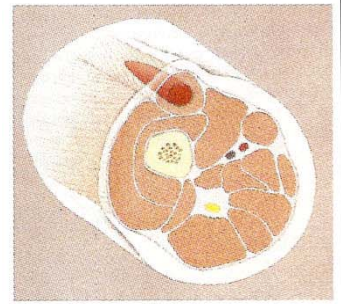
One of the worst things that can happen to haematoma is for *calcification* to occur in the mass of blood. This is called **Myositis Ossificans** and may develop in up to 15 percent of severe quadriceps tears. The early signs are an increase in pain and a decrease in range of movement in the early treatment sessions. There may be an increase in temperature over the area, and there may be an increase in hardness of the haematoma. In suspicious cases and x-ray or ultrasound may show calcification occurring.

All resisted exercise and stretching programs should cease. Progress needs to be slow as the calcification can cause severe pain and sever contractions of the muscle. Attempts to return to activity too soon just cause further activation of the bone cells with the consequent pain and restricted movement.

There are medications that help, but the most important factor to a full recovery is REST.

Thus, soft tissue injuries can be quite serious if not treated quickly and appropriately.

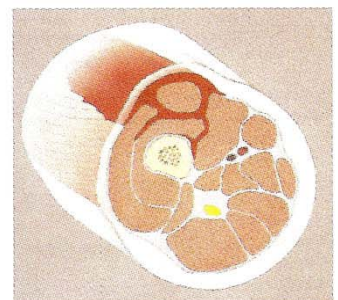
For more injury-related articles visit [www.wakefieldsports.com.au](http://www.wakefieldsports.com.au)



**Above** Example of a superficial intramuscular haematoma



**Above** Example of a deep intramuscular haematoma



**Above** Example of an intermuscular haematoma

