



A foot health message from PERTH FOOT CENTRE

## Sprains, strains and fractures



Common causes of simple ankle injuries usually involve sports, biomechanical instability or trauma.

#### **Strains**

A strain is usually attributable to overuse and repetitive damage to the muscle or tendon and are common in athletes and elderly patients — groups at high risk for wear and tear injuries. A patient suffering from a mild strain will complain of the ankle feeling sore and weak, and inflammation of the joint may be apparent. For a severe strain, the patient will complain of significant pain and difficulty walking on the injured foot. This may indicate a full or partial tear of the muscle or tendon.

#### **Sprains**

A sprain is a partial dislocation of the ankle joint with tearing of the ankle ligaments. Most sprains affect the ligaments on the lateral side of the ankle caused by sudden inversion of the ankle below the tibia, causing the lateral ligaments to stretch or tear. Sprains can occur in the opposite direction, with aversion injuries affecting the deltoid ligament, although this is less common and is usually minor. Severity of injury is graded based on the number of ligaments involved and the degree of damage.

Grade 1 sprains: the patient will still be able to walk with minor discomfort and there will be no tearing of the ligaments.

Grade 2 sprains: there will be partial tearing of the ligaments, the patient will find it painful to put weight on the affected foot, and the ankle will be inflamed with bruising.

Grade 3 sprains: the patient may have heard an audible pop at the time of injury, indicating that ligaments will be completely torn. Severe sprains will present with extensive bruising and inflammation. Complete tears can be less painful that partial tears, meaning patients may delay seeking treatment.

#### **Fractures**

A bone fracture can result from either trauma or overuse in the form of a stress fracture and can be accompanied by a strain or a sprain. Symptoms include pain at the site of injury, inflammation of the joint, bruising, blisters and, sometimes, inability to walk. As many patients with a fracture will present with symptoms consistent with a sprain, the seriousness of the injury is sometimes dismissed.

#### SPRAINS, STRAINS AND FRACTURES

Some of the most common injuries to the feet involve the ankle and injuries can be caused by sports, biomechanics, or simply walking on uneven pavement. Ankle sprains are the most popular sporting injury.

#### Is it a sprain, a strain or a fracture?

Of course the only way to get a definitive diagnosis of an ankle injury is to see a medical professional, however it is useful to know the differences between different types of ankle injuries so you know how they are caused and how they need to be treated.

Strains: a strain is an injury to the muscle or tendon. A strain is usually the result of overuse and repetitive damage to the muscle or tendon over time. Strains are often seen in athletes who undergo long training sessions without adequate breaks to allow the muscles and tendons enough time to rest. A mild strain will leave the ankle feeling sore and weak, and the joint may be swollen. Severe strains can result in the muscle or tendon tearing, which can be very painful and require a long recovery.

Sprains: a sprain occurs when ligaments are stretched or torn. Most sprains affect the ligaments on the outside of the ankle and are usually caused by a sudden movement that causes the ankle to roll outwards while the foot rolls inwards, causing the ligaments to stretch. For mild sprains, the ankle will be tender and possibly a bit swollen at the side of the ankle, but you should be able to walk on it without too much discomfort. Major sprains will be very swollen around the ankle and also bruised, and if ligaments have been torn the ankle will most likely be too painful to walk on. Sprains are not the sort of injury that creep up on you, they are sudden and pain will be immediate, so if pain has been creeping up on you for a while then the problem is more likely to be caused by a strain or a stress fracture. Healing time for a sprain can take from a few weeks for a minor sprain to several months for a major injury.

Fractures: fractures affecting the foot most commonly occur in one of the bones of the ankle. Ankle fractures can be caused by an awkward fall or by landing with a lot of force; they can also be caused as a result of overuse in the form of a stress fracture that develops over time; or from trauma. Symptoms of a fracture can be very similar to a sprain, with bruising, swelling and pain and it can be difficult to know that a bone has been fractured without an X-ray — unless the bone has punctured the skin, in which case it's rather obvious! Minor fractures involve small fragments of bone that have come loose. A minor fracture will usually heal well. A severe fracture involves the shattering of the bone and will sometimes require surgery to realign the bone so that it can heal properly.



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