

# Ankle Sprain

The type of treatment required will vary. This is dependent on factors including the severity of the injury, presence of associated injuries, the routine stresses that are placed on the ankle and the general medical condition of the injured athlete.

## Rehabilitation

Most ankle sprains heal within 2 to 6 weeks, however severe sprains may take as long as 12 weeks. Most athletes can recover quickly from ankle sprains however, failure to rehabilitate appropriately may increase the risk of re-injury. An inadequate rehabilitation program may result in long term weakness or injury recurrence.

A rehabilitation program might involve range of motion exercises, strengthening exercises and exercises which develop and restore balance and agility. During this time taping or bracing the ankle may be prescribed to provide support until full function is regained.

## Prevention

Preventative measures to reduce the risk of injury include:

- A warm up and stretch before and after all activity
- Ankle taping or bracing especially for previously injured ankles
- Shoes that are appropriate to the sport that provide stability and support.
- Stopping activity and implementing RICER in the event of ankle pain
- Seeking appropriate medical attention upon recurrence of injury
- Maintaining muscle strength and flexibility

## References

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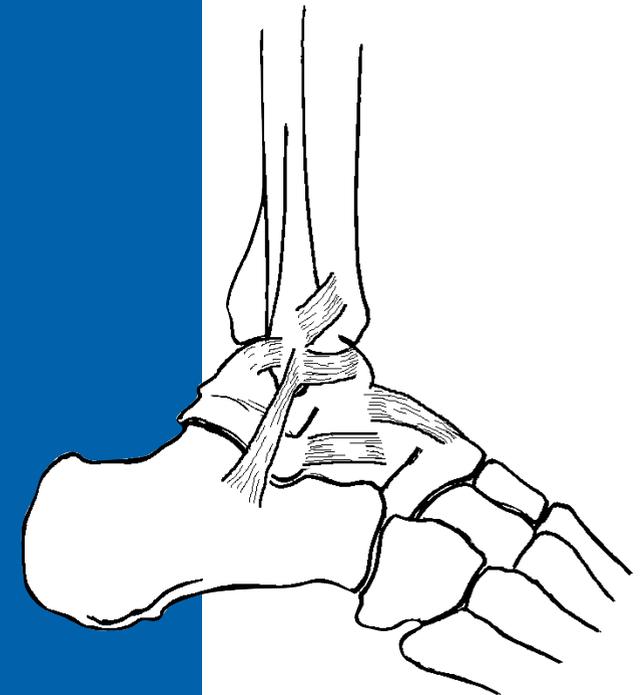
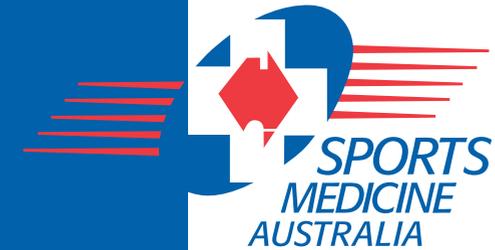
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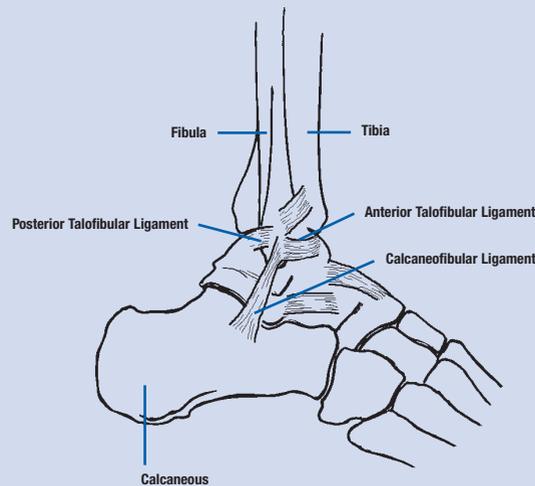


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# Introduction

Ankle injuries are the most common type of injury experienced by athletes. Sports requiring jumping, turning and twisting movements such as basketball, volleyball, netball and football are particularly vulnerable to ankle sprains.

LATERAL LIGAMENTS OF THE ANKLE



## Anatomy

The ankle joint is a hinge joint formed between the tibia and fibula (bones of the lower leg) and the talus (a bone of the foot) and allows the foot to bend upwards (dorsiflexion) and downwards (plantarflexion). The joint also allows a small amount of rotation. Two bones of the foot, the talus and calcaneus (heel bone) connect to form the subtalar joint which allows the foot to rock side to side (inversion/eversion).

The joint's stability comes from the structural arrangement of the bones and the surrounding ligaments. The outside of the ankle joint is stabilised by three small ligaments, the anterior talofibular ligament, the calcaneofibular ligament and the posterior talofibular ligament (see Diagram). The medial side of the ankle joint is stabilised by a strong ligament called the medial or deltoid ligament.

## Causes of Injury

The ligaments of the ankle joint provide stability by limiting the amount of side to side movement. Ankle sprains occur when one or more of the ligaments become over stretched or tears. This usually involves an unexpected or sudden loss of balance, which results in a twist of the ankle. Sports requiring jumping, turning and twisting movements such as basketball, volleyball, netball and football are particularly vulnerable to such injuries.

Most ankle sprains are inversion injuries in which the foot twists inwards damaging the lateral ligaments on the outside of the foot. Eversion injuries involving the foot twisting outwards, damaging the medial ligaments on the inside of the foot are less common.

## Lateral Ligament Injuries

Inversion injuries normally occur due to rapid changes in direction (especially on uneven surfaces) or when there is close body contact between athletes which can cause imbalances in jumping and landing or as a result of landing on an uneven surface such as a hole in the ground.

The most commonly injured ligament is the anterior talofibular ligament. Injury to this ligament results in swelling and pain on the outside of the ankle. If the force is more severe, the calcaneofibular ligament is also damaged. The posterior talofibular ligament is less likely to be damaged. A complete tear of all ligaments may result in a dislocation of the ankle joint and an accompanying fracture.

Depending on the severity of injury, the athlete may have been able to continue activity immediately or may be forced to rest. Swelling usually appears soon after the injury, although occasionally it may be delayed some hours.

## Medial Ligament Injuries

Eversion injuries are less common as the medial ligament is very strong and requires considerable force to be damaged. Occasionally medial ligament injuries may be seen in conjunction with a lateral ligament injury.

## Signs and Symptoms

### Injury severity

Sprains are graded on a scale of 1 to 3 based on the amount of tearing to the ligaments.

Grade	Description
Grade 1 (Mild)	Minor tear Minimal pain Little or no joint instability Mild pain with weight bearing activities Slight loss of balance
Grade 2 (Moderate)	Some tearing of the ligament fibres Moderate to severe pain Moderate instability of the joint Swelling and stiffness Pain with weight bearing activities Poor balance
Grade 3 (Severe)	Complete tear of the ligament Severe pain followed by minimal pain Gross instability of the joint Severe swelling Possible pain with weight bearing Poor balance

## Initial Treatment

The immediate treatment of any soft tissue injury consists of the RICER protocol - rest, ice, compression, elevation and referral. The RICER protocol should be followed for 48 - 72 hours. The aim is to reduce the bleeding and damage within the joint. The ankle should be rested in an elevated position with an ice pack applied for 20 minutes every two hours (never apply ice directly to the skin). A compression bandage should be applied to limit bleeding and swelling in the joint.

The No HARM protocol should also be applied - no heat, no alcohol, no running or activity, and no massage. All these will lead to increased swelling and bleeding in the injured area.

See a sports medicine professional as soon as possible after the injury to determine the extent of injury and to advise on treatment and rehabilitation. In evaluating the injury the sports medicine professional may order an x-ray or other testing to determine the extent of the injury. The sports medicine professional may also prescribe an anti inflammatory medication to reduce pain, swelling and inflammation, and refer to a physiotherapist.