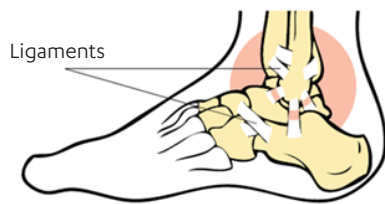


Ankle sprain injury

What is an ankle sprain injury?

The ankle joint is made from three bones, the tibia and fibula (shin bones) and the talus (heel bone). An ankle sprain is a common injury that occurs when the ankle ligaments (strong bands of tissue connecting these bones) get stretched or torn. This can happen when the ankle is twisted or rolled forcefully, such as during a fall or sporting injury.

Figure 1: The ligaments supporting the ankle



What are the symptoms?

Symptoms include localised pain, swelling and bruising, as well as difficulty moving or putting weight on the affected ankle. The ankle joint may also feel weak or unstable when walking. Ankle sprains can range from mild to severe, depending on the extent of ligament damage. Most ankle sprains are diagnosed as mild to moderate and will resolve in time with simple measures such as pain relief, rest, ice, compression bandaging, strapping and elevation.

Severe ankle sprain injuries are less common, and may involve injury to the joint cartilage or syndesmosis ligaments or are due to an 'avulsion' fracture:

1. Severe ankle sprains that primarily involve damage to the bone and soft joint cartilage covering the talus are known as osteochondral injuries or defects (OCDs). Non-surgical or surgical treatment may be recommended, including a period of immobilisation (rest in an orthotic boot or plaster) and restricted weight bearing.
2. A 'high' ankle sprain involves damage to the syndesmosis ligaments that link the tibia and fibula bones, located above the ankle joint. These usually occur from a rotational or 'twisting' injury and are most common in athletes who play contact sports involving fast changes in direction. Recovery from syndesmosis injuries takes more time than mild to moderate (simple) ankle sprains, and may involve either non-surgical or surgical management, and a period of immobilisation and restricted weight bearing.

3. Avulsion fractures occur when the ligaments around the ankle joint pull a small piece of bone away from the area where they attach to the bone. Unlike treatment of an ankle fracture (broken ankle) or severe ankle sprain, avulsion fractures are treated in the same way as mild to moderate ankle sprain injuries, and therefore do not usually require immobilisation, restricted weight bearing, or any other changes to routine management.

How are ankle sprains diagnosed?

Diagnosing an ankle sprain by a health professional involves understanding how the injury occurred, discussing symptoms and examining the ankle and lower leg. This may also involve performing physical tests to assess the stability of the ankle. X-rays are not usually required unless a fracture is suspected.

What imaging options are available and when are they required?

Imaging is generally not necessary to diagnose most mild to moderate ankle sprains, however imaging is recommended if there are signs of a severe injury at the time of initial assessment. If the injury is slow to recover, or has not progressed as expected at the follow up review with a health professional, imaging may also be useful to help diagnose or exclude the presence of less common injuries.

How do you treat an ankle sprain injury?

The recommended treatment/approach for mild to moderate ankle sprains is a trial of non-surgical (conservative) management. This includes following the RICE protocol (below), taking pain relief and anti-inflammatory medication, and undergoing physiotherapy treatment, but no surgery.

The RICE protocol involves treatment using 'Rest, Ice, Compression, and Elevation':

1. **Rest.** Initially, avoid excessive walking and movement at the ankle to help reduce pain and prevent further injury. Ask your health professional for more specific advice relevant to your injury about weight bearing and the time-frame for return to normal walking and ankle movement. Crutches and/or an orthotic boot may be prescribed to help rest, restrict weight bearing and stabilise the ankle. This is not necessary for all patients and will depend on your symptoms and diagnosis.
2. **Ice.** Apply ice packs to help reduce pain. Take care to avoid the ice touching the skin directly – wrap the ice in a towel or pillow slip. Apply for 20 minutes, then remove for a minimum of 40 minutes, whilst symptoms persist.

3. Compression. Use to help support the ankle and minimise swelling. A sleeve of Tubigrip, compression bandage or an ankle brace can be applied to provide compression and ankle support.

4. Elevation. Place the injured ankle above the level of the heart to minimise swelling – this aids the healing process and helps to minimise stiffness. Continue to elevate the ankle when sitting or lying down whilst swelling remains an issue.

Medication for pain relief, such as paracetamol and/or non-steroidal anti-inflammatory drugs (NSAIDs) may be recommended by your health professional to help manage pain and swelling. Discuss medication needs with your treating doctor before going home. The RICE protocol can be followed until symptoms are resolving, with any modifications or additional treatment being guided by your physiotherapist.

Exercises for a mild to moderate ankle sprain injury

It is important to maintain flexibility and strength at the ankle joint whilst recovering from a sprain injury. Physiotherapy treatment can help guide the recovery process. These simple exercises can be started immediately. Do six repetitions of each exercise, twice a day.

Exercise 1: Keeping your foot flat and heel on the ground, slide it gently back under the chair.

Exercise 2: Ankle pumps – move your foot up and down at the ankle joint, within the limits of comfort.

Exercise 3: Ankle circles – move your ankle in a circle clockwise, then reverse direction, within the limits of comfort.

What is the expected recovery time?

The recovery time for an ankle sprain will vary depending on the severity of the injury. Most people fully recover from mild to moderate sprains in one to six weeks. Severe ankle injuries usually involve longer time-frames, with restricted weight bearing on crutches and immobilisation in orthotic boots.

Occasionally, symptoms of pain or joint stability may prove to be severe, persistent, or more obvious after the initial ankle swelling has settled. A follow-up assessment by a health professional within the first two weeks is important to assess progress and exclude a more serious ankle injury that may not have been apparent at the initial assessment.

What if recovery is not proceeding as expected?

If, after following the RICE protocol and recommended treatments your ankle sprain is not healing as expected, or if you are experiencing persistent pain and difficulty walking, it is important to return to the Cabrini Emergency Department for further assessment. We can organise specialist referrals and explore other treatment options and/or further imaging if needed. Our team is here to provide comprehensive care and support for your ankle injury.

How do I prevent ankle sprain injuries in the future?

Here are some simple measures that can help reduce the risk of ankle sprains in the future:

- Warm up before exercise, including stretches and strengthening as recommended by your physiotherapist or trainer
- Wear supportive shoes, suitable for exercise, with orthotics if recommended
- Consider taping or bracing the ankle before playing contact sports
- Consider the terrain e.g. grass on an even ground, asphalt, park trail or synthetic track surfaces are best for jogging
- Follow the advice of your doctor and physiotherapist and listen to your body

A gradual or modified approach to resuming training and competitive sport may be recommended.

Seeking help

Cabrini Emergency Department (ED) is staffed by experienced emergency doctors and nurses 24 hours a day, 7 days per week. If you have any questions about your ED treatment our qualified ED staff can be contacted on **(03) 9508 1500** at any time. If you need to return to Cabrini ED for ongoing care we would be glad to take care of you again and if this occurs within a week of your initial consultation the doctor's fee will be bulk-billed.

You can also expect to receive a phone call or SMS message from one of our emergency nurses the day after you have been discharged. The nurse will be able to clarify any aspect of your diagnosis, treatment, or follow-up.

In a medical emergency return to Cabrini ED if it is safe to do so or go to the nearest hospital emergency department or call an ambulance – dial triple zero (000).

Return to Cabrini ED if you have not improved at all after a week, especially if you are still unable to put weight on your ankle and foot.

Want to know more?

- Contact Cabrini ED on **(03) 9508 1500**
- Contact Cabrini physiotherapy services: Call Access on **(03) 9508 1700** or email access@cabrini.com.au
- Ask your local doctor or healthcare professional
- Visit the Better Health Channel at www.betterhealth.vic.gov.au