



YOUR GUIDE TO

ANKLE FRACTURES

MUSCULOSKELETAL

Contents

The Ankle Joint	3
What is a fractured ankle?	4
What treatment can I receive?	5
Exercises	7
Phase 1	7
Phase 2	11

Introduction

Please take note of the following before starting any of the exercises in this guide:

- The information contained in this guide is intended to assist in managing your recovery.
- This guide is based on the latest medical research in the field and contains the best advice available to the best of our knowledge.
- This guide is complimentary to other medical services and is not intended as a substitute for a health care provider's consultation. Never disregard medical advice or delay in seeking advice because of something you have read in this guide.

● Many people have found quick and lasting relief from their pain by acting upon the information provided, but everyone decides for themselves what to do with this information. Should you doubt a particular exercise in your situation, please consult your health professional.

When consulting your health professional, it is wise to take this guide with you to show them.

The ankle joint

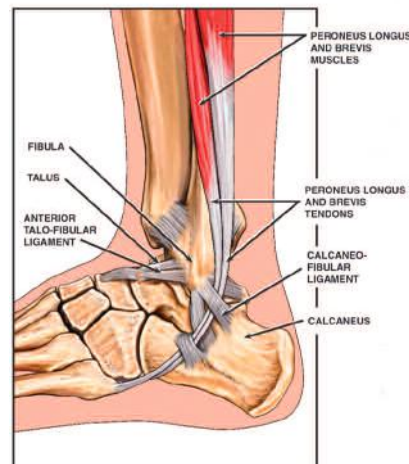
The ankle is a joint that is formed by the **tibia** and **fibula** (shin bones) and the **talus** (bone of the foot). The stability of the joint comes from several factors:

1. The unique structural arrangement of the bones forming the joint
2. The ligaments surrounding the joint

Joint instability can therefore develop after one of these structures has been damaged; either when one of the bones is broken or there is damage to the surrounding ligaments of the joint. On the lateral (outside) aspect of the ankle there is a complex of three ligaments. Damage to any of these ligaments will impact on the stability of the joint. How many are damaged and the extent of the damage will determine the grade of the injury and the amount of instability at the joint. It will also determine the course of treatment necessary. On the medial (inside) aspect of the joint is the deltoid ligament complex. Injury to this ligament complex is far more unlikely, and if damage does occur, it usually only results in a partial tear of the ligaments. Complete rupture of these ligaments generally only occurs in combination with ankle fractures.



NORMAL (PRE-ACCIDENT) CONDITION



What is a fracture?

A fracture is a partial or complete break in a bone. Ankle fractures can range from the less serious avulsion injuries (small pieces of bone that have been pulled off) to severe shattering-type breaks of the tibia, or fibula. Ankle fractures are common injuries that are most often caused by the ankle rolling inward or outward. Many people mistake an ankle fracture for an ankle sprain, but they are quite different and therefore require an accurate and early diagnosis. Usually when you break your ankle many of the soft tissues around the bone will be injured as well.

A broken ankle may occur as a result of a direct impact, such as a road traffic accident or a sports opponent, but sprained ankles are usually the result of an injury where the ankle twists under the weight of the body.

A fracture can be considered quite a complex injury since not only is the bone injured but also the soft tissue in the immediate surrounding area. The tendons, ligaments, muscles, nerves, blood vessels and skin can all be affected.

Fractures may be closed or open/compound. When the bone pierces the skin the injury is known as an open or compound fracture. When

the skin remains undamaged it is a simple or closed fracture. With a compound fracture there is a risk of infection in the bone and special treatment is needed.

There are many types of fractures, however the two most common fractures found in the ankle are:

Avulsion fracture: Bone fragment is pulled off by an attached tendon or ligament.

Hairline fracture: Is an incomplete fracture, like a thin crack that does not break all the way through the bone. It is usually the result of a relatively minor injury, or repetitive strain. Hairline fractures usually occur at the bottom end of the lower leg bones, in an ankle injury.

There are various types of ankle fractures that can occur, depending on how and where the bone has broken. Your GP or Consultant would be able to tell you what type of fracture you have. The management, treatment and exercises for ankle fractures are the same for the various types of fractures that can occur.

Signs and Symptoms

An ankle fracture is accompanied by one or more of these signs and symptoms:

- **Pain at the site of the fracture**, which in some cases can extend from the foot to the knee.
- **Significant swelling**, which may occur along the length of the leg or may be more localized.
- **Blisters** may occur over the fracture site. These should be promptly treated by your Consultant.
- **Bruising**, this would have developed soon after the injury.

- **Inability to walk**. However, it is possible to walk with less severe breaks, so never rely on walking as a test of whether a bone has been fractured.

- **Change in the appearance of the ankle** so that it differs from the other ankle.

- **Bone protruding through the skin**. Fractures that pierce the skin require urgent attention because they can lead to infection and prolonged recovery.

What treatment can I receive?

If an ankle fracture is suspected you should see your GP or go to A&E. If your GP is unsure regarding whether or not the bone is in fact broken, or to determine the extent of the injury, X-rays may be taken to confirm this. Other injuries can also occur around the ankle joint, including ankle sprains, Achilles tendon ruptures; and these injuries can be confused with a broken ankle. It is important for the ankle to be properly evaluated so that a treatment plan can be developed. However, until you are able to be examined by your GP, and for the initial stages of your injury, the

“R.I.C.E.” method should be followed. This involves:

REST

Allow your injured ankle to rest for approximately 24 hours after the injury. Caution should be taken against vigorous exercise; however exercises for the uninjured leg can be performed. Isometric (static) exercises can be performed from an early stage to increase muscle strength. Exercises must be done in a pain free range of motion to prevent further damage.

ICE

During the first 48-72 hours, apply ice to the ankle every two hours for 15- 20 minutes to decrease pain and swelling. Do not place ice directly on to the skin and do not use for over 30 minutes at a time.

COMPRESSION

Use an ankle brace, strapping or a bandage to provide both support and pressure to the area to help reduce swelling.

ELEVATION

Elevate as much as possible with ice and compression. Elevate the foot higher than the waist to reduce swelling and pain.

Your GP or Consultant will assess how the injury occurred and, combined with the x-ray results, will formulate a plan to restore normal ankle alignment and function.

Treatment of ankle fractures depends upon the type and severity of the injury. Options include:

- **Immobilisation**. Certain fractures are treated by protecting and restricting the ankle and foot in a cast or splint, or what is commonly known as a ‘moon-boot’. These allow for the bone to heal.

- **Prescription medications**. To help relieve the pain a medical professional may prescribe pain medication or anti-inflammatory drugs.

- **Surgery**. For some injuries, surgery is needed to repair the fracture and other related injuries, if present. Your consultant will select the procedure that is most appropriate for your injury.

- **Crutches**. For the period of time that the ankle is in a cast, crutches will be issued by your GP or Consultant to minimise weight bearing on the injured leg. Your doctor will be able to explain the use of the crutches to you in more detail.

It is important to follow your GP or Consultant’s instructions after treatment. Failure to do so can lead to long term unsatisfactory result. Complete healing can take anything from 4-6 weeks to 3 months.

Exercises

When your GP or Specialist decides you are ready, start range-of-motion and flexibility exercises. This will usually be shortly after your cast has been removed. You may be referred to a physical therapist to assist you with these exercises, however many are very simple and easy to do on your own. Remember that your balance will also be affected after an injury such as a fracture. Try to incorporate some simple, safe balance exercises into

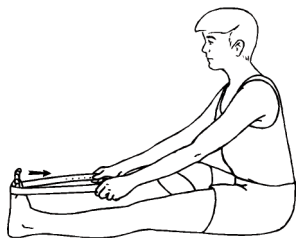
your daily routine such as standing on one leg, or weight shifting. Make sure that your ankle is fully healed before returning to sport or strenuous activity. It takes at least six to eight weeks for even a simple ankle fracture to heal, and may take several months before you can return to intense physical activity. Remember to use the RICE principle should you have some slight swelling following any of the exercises.

Exercises phase 1

STRETCHING EXERCISES

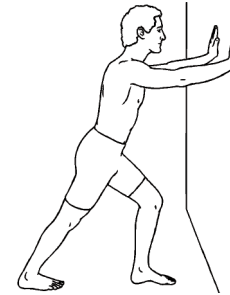
You can start with Phase one exercises when the swelling and the pain starts to decrease. Pain is your guide as to when you can start, and how much activity is enough. The goal of this phase is to increase the range of motion and flexibility, which will aid in circulation and help eliminate swelling.

- **Hold each stretch for 30 seconds and repeat 3 times each**
- **Repeat the stretches 2-3 times a day. Perform them in a slow and controlled manner, pull the leg until you feel the stretch but do not pull it into the pain threshold.**
- **If you do not have tubing you can make use of an old stocking**

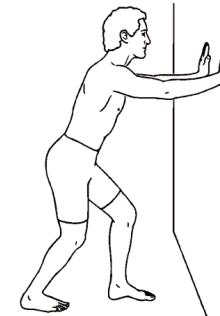


PLANTAR FASCITIS STRETCH
Sit with your leg straight. Using a towel or old stocking place it over the ball of your foot and pull it towards you until a stretch is felt through the arch of your foot. (You may feel the stretch in the back of the thigh and the calf)

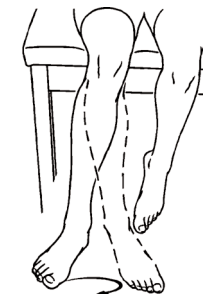
Exercises phase 1



GASTROCNEMIUS STRETCH
Stand about a meter away from a wall. Place both hands against the wall with one foot further back than the other. Now lean in towards the wall, bending the front knee and keeping the back knee straight and the heel on the floor.

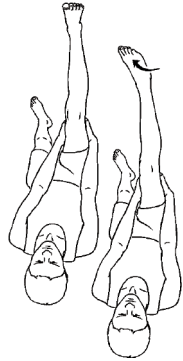


SOLEUS STRETCH
In the above position, now keep the back leg slightly bent, with the heel on the floor and toes pointing in a straight line to the wall. Lean into the wall until a stretch is felt in the lower calf.



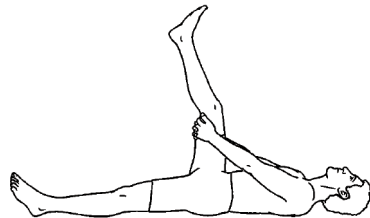
ANKLE CIRCLES
Slowly rotate foot/ankle clockwise and counter clock-wise. Gradually increase range of motion. Avoid pain.

Exercises phase 1 (continued)



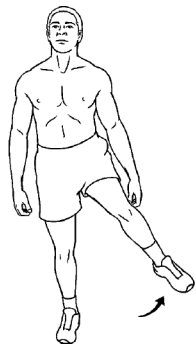
TIBIALIS ANTERIOR STRETCH

Lay on your back with one knee bent and the other straight. Raise the straight leg up holding behind your knee. Now point your toes forwards and inwards, and you should feel a stretch along the front of your leg. Only rotate to a pain free position.



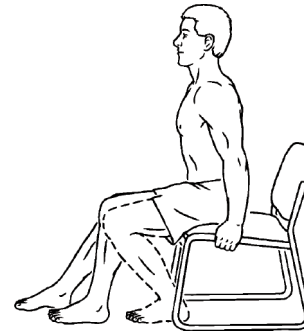
HAMSTRING STRETCH

Lie on your back and support your thigh behind the knee. Slowly pull the leg towards your chest and then straighten the knee until a stretch is felt in the back of the thigh.



WEIGHT SHIFTING

Stand up straight and shift your weight from one leg to another in a slow and controlled manner.



BALL ROLL

Use a rolling pin or tennis ball. While seated, roll the rolling pin or ball with the arch of your foot. Progress to doing this exercise while standing as you can tolerate it. Alternatively, use a plastic 1 litre bottle and fill it with water, and freeze it. Roll the planter aspect (bottom) of your foot backwards and forwards over the bottle while applying constant but light pressure on the foot.

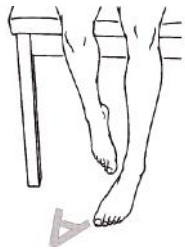
Exercises phase 2

MOBILITY & STRENGTHENING EXERCISES

- Repeat two sets of 10-12 repetitions of each exercise.
- Make sure that you work in a pain free range of movement and gradually
- increase your range as you get stronger.

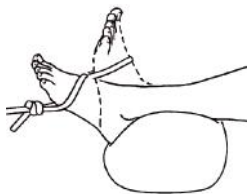
This phase of exercise can be started when you are able to complete phase 1 exercises pain free and with control. You should no longer have swelling or pain and if this is not the case it is important that you consult your GP or

Therapist to ensure that there are no other problems and that you are completing the exercise programme correctly. Do not be afraid to go back to phase 1 if you feel that you are unable to safely continue with the Phase Two exercises. Alternatively, you can overlap the phases if you are not completely confident to do all the exercises in phase 2 yet. Use pain as a marker for doing too much or maybe even doing the exercise incorrectly. Continue with the stretches as in phase 1.



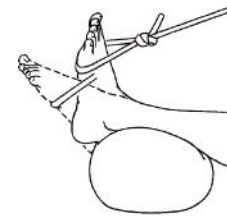
ANKLE ALPHABET

Sitting/lying with your leg outstretched in front. Now raise the leg, keeping knee straight and leg still. Slowly 'paint' the alphabet in the air with ankle to get full range of movement. The movement should not be from your hip, only your ankle, and the range should be pain free.



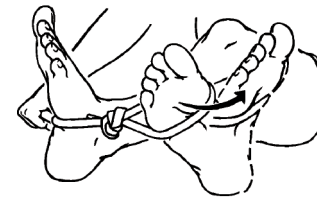
RESISTED DORSIFLEXION

With the tubing (or an old stocking) anchored to a fixed object (table leg), and attached around your foot, pull the foot towards you. Return slowly to your starting position.



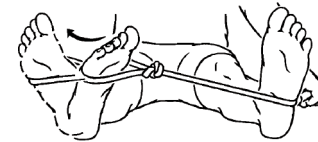
RESISTED PLANTAR FLEXION

Whilst holding one end of the tubing and the other tied around your ankle, press the foot downwards towards the floor. Return slowly to starting position.



RESISTED INVERSION

Tie ends of the band together, and anchor the band around a table. Sitting side on to the table, loop the band around the foot of your injured ankle which should be closest to the table. Move toes up and in toward opposite knee. Be sure to only use your ankle.



RESISTED EVERSION

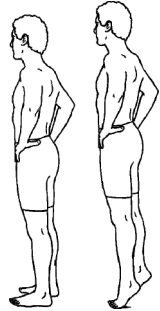
Now turn around so your injured ankle is furthest from the table, with the band attached around the foot. Now move the toes of the foot up and out toward outer shin, pulling the band away from the table.



STEP STRENGTHENING EXERCISES

Stand on a step and tighten the quads (the thigh muscle) as you bend and straighten the knee. Don't let the leg being lowered become weight bearing.

Exercises phase 2 (continued)



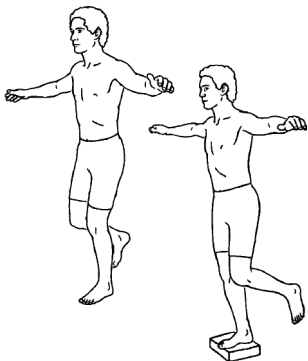
HEEL RAISES

Supporting yourself against a wall, raise up onto your toes in the following manner: First onto your big toe, then onto the middle of your foot and then onto your little toe. This sequence equals one repetition.



STANDING TOE RAISE

Standing with your weight on your heels, raise your toes off the ground in the same sequence as the calf raises, i.e. middle of your heel, outside and inside.



STORK STANDING

Balanced on one leg for 30 seconds and repeat with the other leg. Repeat with your eyes closed. Progress the above standing to an unsteady surface e.g. a cushion or a narrow piece of wood.

Contact us

This guide is designed to assist you in the self-management of your injury/condition.

We are here to assist your recovery in the shortest but safest possible time. If you have any uncertainties or queries regarding the information, please do not hesitate to contact us on:

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