



## YOUR GUIDE TO

# LATERAL LIGAMENT SPRAIN OF THE ANKLE

MUSCULOSKELETAL

## Contents

The ankle joint .....	3
What is a Lateral Ligament Sprain of the ankle? .....	4
What causes Lateral Ligament Sprains? .....	6
What are the symptoms? .....	6
What can I do to manage my injury? .....	7
What exercises should I do? .....	9
Exercises .....	9
Phase 1 .....	9
Phase 2 .....	13
Phase 3 .....	16

## 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 joint is a hinge joint formed between the tibia and fibula (shin bones of the lower leg) and the talus (a bone of the foot). It allows the foot to bend upwards (dorsiflexion) and downwards (plantarflexion). Two bones of the foot, the talus and calcaneus (heel bone) connect to form the subtalar joint which allows the foot to move from side to side (inversion and eversion).

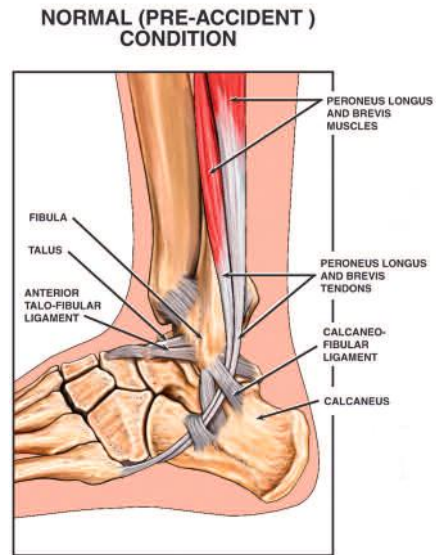
The stability of the foot comes from the structural arrangement of the bones and the surrounding ligaments. Ligaments are bands of tissue that connect one bone to another and are very important in providing stability around a joint. The ligaments allow for motion of the bones at the joint, but only within certain ranges of motion. The outside (lateral aspect) of the ankle is stabilized by three small ligaments while the inside (medial aspect) of the joint is stabilized by one strong ligament which consists of a number of bands and is called the deltoid ligament. The broad fan-shaped bands of the deltoid ligament serve to stabilize the inside of the joint, preventing over-pronation (flattening of the arch of the foot) and excessive eversion (outward turning of the sole of the foot), whilst the outside three ligaments prevent excessive inversion (inward turning of the sole of the foot).



# What is a Lateral Ligament Sprain of Ankle?

A sprain is an injury that occurs to a ligament, and is caused by a sudden over stretching of the ligament. The degree of overstretch will determine the severity of the injury and which ligaments are damaged. Because of the structure of the ankle and the strength of the deltoid ligament, the medial side of the joint is a lot more stable than the lateral side (outside), with injury to the lateral ligaments being the most common type of ankle injury. The lateral ligaments consist of three short bands that run from the

fibula (shin bone) and attach to various bones of the foot. The anterior talofibular ligament (ATFL) runs at the front of the ankle from the fibula to the talus (bone of the foot), the posterior talofibular ligament (PTFL) runs at the back of the ankle from the fibula to the talus and finally the calcaneofibular ligament (CFL) runs from the fibula to the calcaneus (the heel bone) on the outside (lateral aspect) of the ankle. Each of these ligaments limits specific movements of the ankle and foot and the most commonly damaged of these three ligaments is the ATFL. A lateral ligament sprain injury occurs when the foot is suddenly inverted resulting in one or more of these lateral ligaments of the ankle being stretched too far and being either partially or completely torn.



Sprains can be divided into three groups depending on the severity of the injury and damage to the ligament.

#### **GRADE I SPRAIN:**

A Grade I (mild) sprain is the most common and requires the least amount of treatment and recovery. The ligaments connecting the ankle bones are over-stretched and damaged microscopically, but not actually torn. The symptoms tend to be limited to; mild pain and swelling, no instability and minimal loss of function i.e. you may be able to walk without crutches, but may not be able to jump or jog

#### **GRADE II SPRAIN:**

A Grade II (Moderate) sprain is more severe and indicates that the ligament has been more significantly damaged, with partial tearing occurring, but no significant instability. There is usually more significant swelling and bruising around the outside of the ankle due to bleeding that has occurred from the tearing of the ligament, and range of movement in the ankle will be reduced. Patients usually have pain with walking, but can take a few steps.

#### **GRADE III SPRAIN**

A Grade III (Severe) sprain is the most severe and indicates that the ligament has been significantly damaged, with a complete tear occurring. There will be significant swelling, bleeding and tenderness around the outside of the joint, abnormal joint movement and most patients complain of significant instability or a giving way of their ankle joint. You are generally unable to fully weight bear due to pain and instability, and will require the use of crutches.

## What Causes Lateral ligament sprains?

A lateral ligament sprain of the ankle is caused predominantly by "inversion" injuries in which the foot and heel buckle inwards, towards the other foot and usually occurs during activities that require jumping,

running on uneven surfaces, sudden changes of direction to name but a few. They can however also occur with more routine daily activities such as stepping off a curb or slipping on ice.

## What are the symptoms?

Symptoms experienced by patients after a lateral ligament sprain injury will differ according to the grade of injury. Pain, swelling, bruising and tenderness around the outer side of the joint are common symptoms irrespective of the extent of the sprain.

If you have significant symptoms following a sprained ankle, you should consult with your doctor or allied health professional so that the appropriate tests can be performed and the correct treatment prescribed for your level of injury. These more severe symptoms include:

- Inability to walk on the ankle
- Significant swelling
- Symptoms that don't improve quickly or persist beyond a few days
- Pain that is difficult to manage
- Pain in the foot or above the ankle
- Numbness in the toes
- Marked instability and feelings of giving way in your ankle

If you are experiencing any of these symptoms you may also require an MRI scan or x-ray to determine the extent of damage and rule out any bony injury.

# What can I do to manage my injury?

More severe lateral ligament sprain injuries, including complete tears of the ligaments and fractures of the bone may need different treatment and rehabilitation than a simple ankle sprain. If your symptoms are more severe than a simple grade I or II ligament sprain or if your symptoms do not steadily improve over time then it is important that you see your doctor as soon as possible. The treatment for grades I and II sprains is conservative and should start as soon as possible with weight bearing and more functional strengthening being started as pain allows. The treatment for grade III sprains is more controversial and could include both surgical and/or conservative treatment. It is important to discuss your options with your consultant to determine which treatment will be best for you. If surgery is required a full rehabilitation programme will follow, and it is important that you are committed and compliant with the programme to ensure the best possible outcome after your surgery. Initial management of a lateral ligament sprain irrespective of the grade of injury is the same as that for any sprain injury and includes R.I.C.E. treatment immediately after the injury for the next 48-72 hours.

**Rest:** The first 24-48 hours after the injury is considered a critical treatment period and activities need to be reduced. Gradually put as much weight on the involved ankle as tolerated and discontinue crutch use when you can walk with a normal gait (with minimal to no pain or limp).

**Ice:** For the first 48 hours post-injury, ice pack and elevate the ankle sprain 20 minutes at a time every 3-4 hours. Another popular treatment method is to fill paper cups with water then freeze the cup. Use the frozen cube like an ice cream cone, peeling away paper as the ice melts. Do NOT ice an ankle sprain for more than 20 minutes at a time!! You will not be helping heal the ankle sprain any faster, and you can cause damage to the tissues!

**Compression:** Use compression when elevating the ankle sprain in early treatment. Using a bandage, wrap the ankle from the toes all the way up to the top of the calf muscle, overlapping the elastic wrap by one-half of the width of the wrap. The wrap should be snug, but not cutting off circulation to the foot and ankle. So, if your foot becomes cold, blue, or falls asleep, re-wrap!

**Elevate:** Keep your ankle sprain higher than your heart as often as possible. Elevate at night by placing books under the foot of your mattresses--just stand up slowly in the morning.

**Physiotherapy:** A physiotherapist will use treatments such as soft tissue mobilisation, deep friction massage, acupuncture, electrotherapy etc, which will all serve to aid in the recovery process of the ligaments and surrounding soft tissue, helping you get back to full function as soon as possible after your injury. They will also be able to provide you with a rehabilitation programme to strengthen the joint and restore its proprioceptive function (awareness of your ankle joint in space), restore full function and prevent future injury from occurring.

## **Important:**

### **Limit Immobilization -**

Immobilization can cause significant problems after ankle sprains.

- Patients will feel better if placed in cast or a walking boot, but this can lead to a stiff ankle, delay rehab, and make their ankle prone to re-injury, if the immobilization is carried on for too long.

- Injured ankle ligaments will form scar tissue while healing. This scar tissue is tighter, and less organized when patients have their joint completely immobilized. The ligaments heal with tissue that is the appropriate length and of better quality when ankle movement is initiated earlier. When the ligaments scar excessively, normal movements can become painful, and the ankle can be prone to re-injury.

- Even if walking is painful out of a boot, patients should remove the boot several times a day to work on mobility exercises.

# What exercises should I do?

It is important that you are aware that this is a general exercise programme for a lateral ligament sprain, which

can be adjusted depending on advice that you have been given by your health professional on assessment.

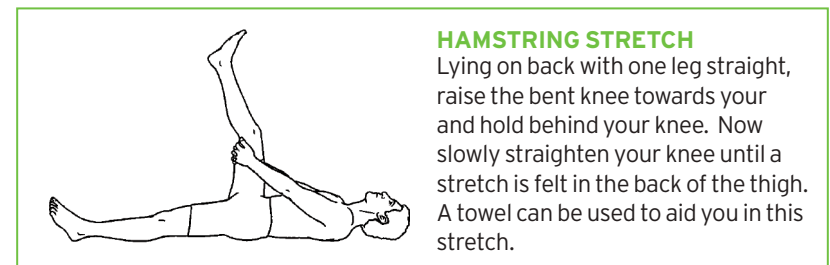
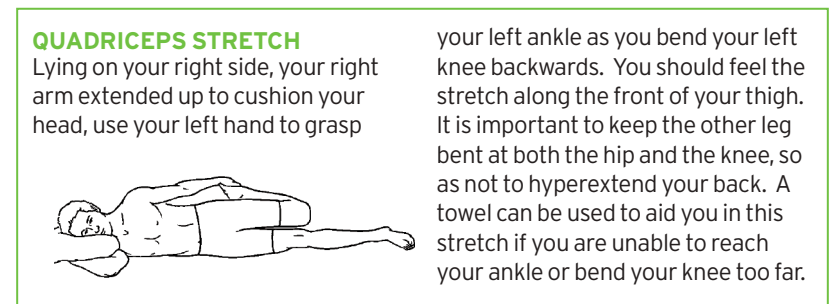
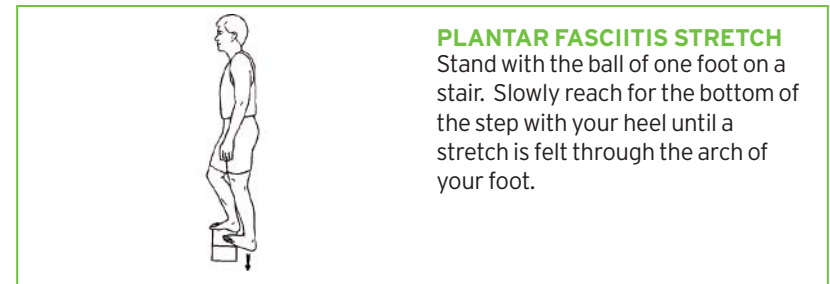
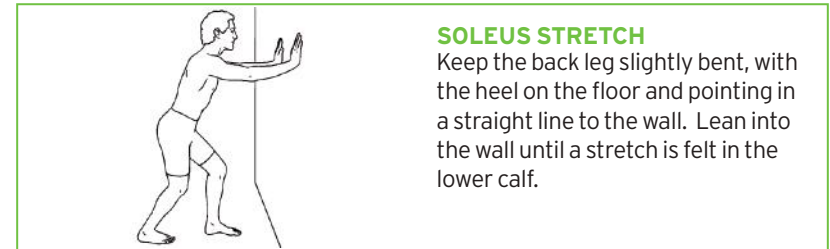
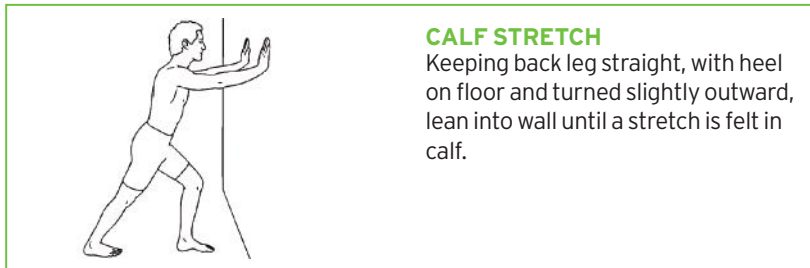
## Exercises

- Keep all exercises in your pain free limits. Trying to work in painful ranges will only prolong your recovery.
- If you experience pain during any of the exercises, decrease the intensity of the exercises by:
  - decreasing the number of sets
  - decreasing the number of repetitions
  - decreasing the range of movement
  - decreasing the resistance
- Do all exercises slowly and breathe normally.
- Progress gradually according to your own level of comfort.
- Following exercise, stiffness or fatigue may result but should not last longer than 24 hrs. The symptoms of your injury should not be aggravated.

## Exercises phase 1

### STRETCHES

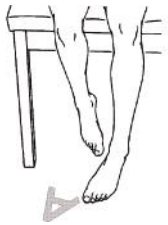
- Repeat each of these stretches **3 times** (on both sides if necessary).
- Hold each stretch for at least **30 seconds**.
- Hold a steady stretch, **do not bounce**.



# Exercises phase 1 (continued)

## STRENGTHENING EXERCISES

- Follow the instructions within each exercise regarding sets and repetitions
- Always work in a pain free range of movement



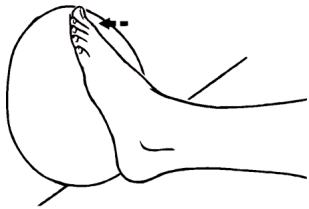
### ANKLE ALPHABET

Using your ankle and foot, trace the letters of the alphabet. Perform the A to Z.



### ISOMETRIC DORSIFLEXION

Place a rolled pillow between the feet, and press the top of your injured foot up against the sole of your uninjured foot. Hold for 5-10 seconds and repeat 10 times



### ISOMETRIC PLANTAR FLEXION

Place a rolled pillow against the wall, and press your foot into the pillow. Hold for 5-10 seconds and repeat 10 times



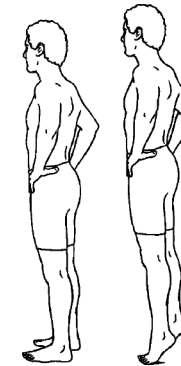
### ISOMETRIC INVERSION

With rolled pillow between feet, press inner border of feet into pillow. Hold for 5-10 seconds and repeat 10 times



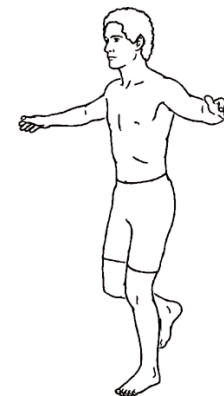
### ISOMETRIC EVERSION

Place a rolled pillow against the wall and press the outer border of foot into pillow. Hold for 5-10 seconds and repeat 10 times.



### CALF RAISES

Supporting yourself against a wall, stand on one leg and raise up onto your toes in the following manner: First onto your big toe, then onto the middle of your foot, and lastly onto your little toe. Repeat this sequence 10 times.



### STORK STANDING

- Balance on one leg for 30 seconds and repeat with the other leg.
- Repeat the above with your eyes closed.

If this is too painful at the start of the programme, start by sitting on a chair with your foot on a cushion and move your foot forwards and backwards, side to side on the cushion. Get your ankle used to the movements and taking pressure

## Exercises phase 2

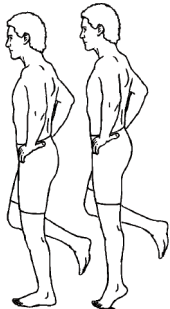
Phase 2 exercises can be started when you are able to do all the Stretching and Strengthening exercises in Phase 1 with no adverse effects and good control. Continue to work in a pain free range of motion, and continue to do the stretching

exercises of phase 1 with each exercise session. Only progress to doing the hopping and running exercise when you are pain free with all the static weight bearing exercises i.e. stork standing, lunging and stork stand pickup

### STRENGTHENING EXERCISES

- Do **2-3 sets** of **10-15 repetitions** (or as directed in the exercise)
- Do each exercise within your **pain free range**.

- An **elastic/theraband** should be used for these exercises as shown in the pictures



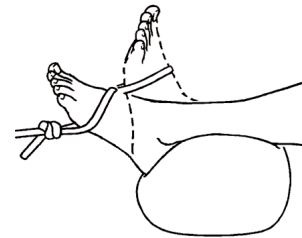
#### SINGLE LEG CALF RAISE

Supporting yourself against a wall, stand on one leg and raise up onto your toes in the following manner: First onto your big toe, then onto the middle of your foot, and lastly onto your little toe. Repeat this sequence 10 times.



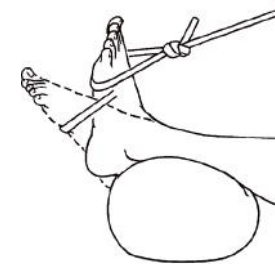
#### TOE RAISE

Standing with your feet shoulder width apart and a wall supporting your back. Now rock back onto your heels, pulling your toes towards your shins.



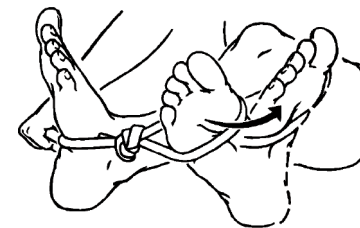
#### RESISTED DORSIFLEXION

With the tubing anchored to a fixed object, pull the foot towards your face. Return slowly to your starting position.



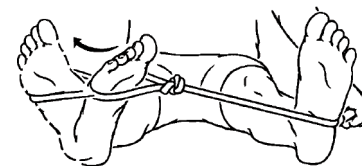
#### RESISTED PLANTAR FLEXION

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



#### RESISTED INVERSION

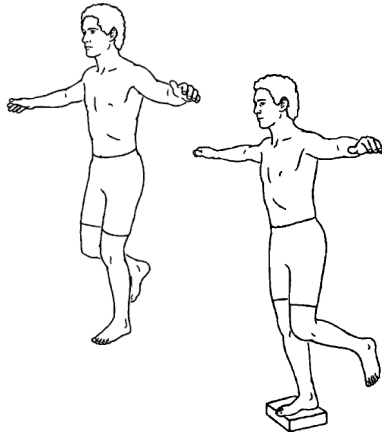
Cross your leg with the ankle you are exercising underneath. Anchor the tubing around the upper foot and slowly turn the lower foot inward.



#### RESISTED EVERSION

With the tubing around one ankle, slowly turn the foot outwards.

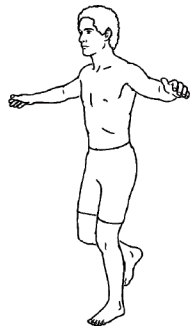
## Exercises phase 2 (continued)



### STORK STANDING

- Balance on one leg for 30 seconds and repeat with the other leg.
- Repeat the above with your eyes closed.

If this is too painful at the start of the programme, start by sitting on a chair with your foot on a cushion and move your foot forwards and backwards, side to side on the cushion. Get your ankle used to the movements and taking pressure. Progress the above to standing on an unsteady surface, e.g. a cushion or a narrow piece of wood.



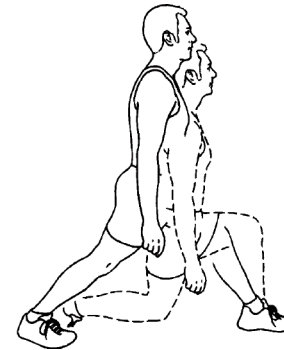
### STORK STAND PICK-UP

Standing on one leg, with your weight on your heel, bend down to pick up a weight with the opposite hand ensuring that your weight stays on your heel, and that your knee goes down in line with your second toe. Also ensure that your knee and not your back does the bending work. Repeat 10 times on each leg (up and down is one repetition)

## Exercises phase 3

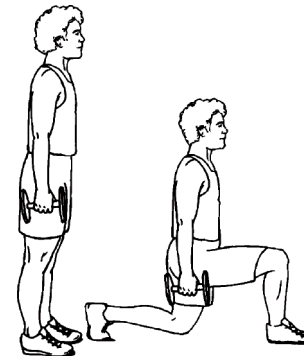
Progress to this phase once you are able to complete the exercises in phase 2 with control and pain free.

### FUNCTIONAL EXERCISES



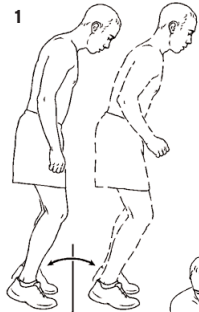
### LUNGES

Place one foot in front of the other. Bend both knees together until you have a 90° bend in both. Ensure that your front knee does not go over your front foot when bending to 90°. Return to the starting position. Perform 1 set of 10 reps per leg (complete all 10 reps with the one foot forward before changing and starting with the other leg in front). Progress this exercise to stepping lunges (i.e. start with feet together and step into a lunge position) once you are pain free with the above. Again when you lunge down, make sure that both knees are at a 90° angle and then return to the starting position





## Exercises phase 3 (continued)

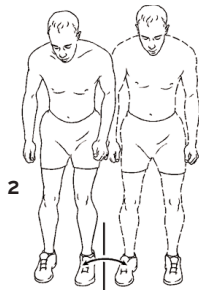


### HOPPING

Standing on two legs hop from one point to another in the following manner

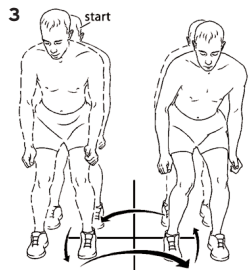
1. Forwards and backwards
2. Side to side
3. In a square (clockwise and anti-clockwise)
4. In a zigzag forwards and then backwards

**Repeat each sequence 10 times per leg.**



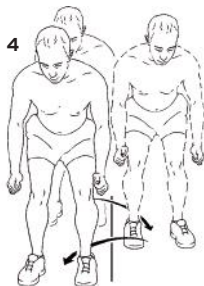
### RUNNING DRILLS

These can be done once the above can be performed without pain and with good control. With the drills try replicating movements that you could do in your sport i.e. running forwards, backwards, side to side, sudden change of direction, zigzag running etc. Also try and change the pace as you do them i.e. sudden sprinting, sudden stopping.



### ACTIVITY SPECIFIC TRAINING

Activity specific exercises may include simply walking or jogging, or may be more intense for athletes who participate in basketball, soccer, or other sports. The key, no matter what level of recreational or competitive athlete you may be, is to progress slowly. Begin at very low intensity, and very low duration of activity, and slowly work up--never suddenly increase either the intensity or duration of your activity.



## What if the pain continues?

The most common cause of persistent pain following an ankle sprain is known as incomplete rehabilitation. This means that patients either don't complete the right type of rehabilitation, or they don't progress properly (i.e. too fast or too slow).

If you feel that your progress is not going along properly, ensure you seek advice. Talk to your doctor, work with a physical therapist, seek proper advice!

## 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:

Phone 017890400999 / 07870166861  
[www.mdphysiotherapy.co.uk](http://www.mdphysiotherapy.co.uk)