



## YOUR GUIDE TO

# COLLATERAL LIGAMENT SPRAIN OF THE KNEE

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## 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.

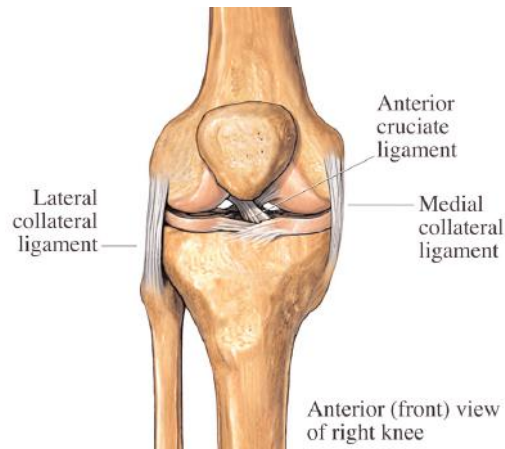
● Many people have found quick and lasting relief from their knee pain by acting upon the information provided, but everyone decides for themselves what to do with this information. Should you doubt a particular exercise in your situation, please consult your health professional.

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

# What is a Collateral ligament sprain of the knee?

A sprain is a joint injury that causes a stretch or tear in a ligament. Ligaments are strong bands of tissue that connect one bone to another and provide stability to the joint. The medial and lateral collateral ligaments

are two of the four ligaments at the knee that are critical to the stability of the joint. The collateral ligaments of the knee sit on the inside (medial) and outside (lateral) of the joint.



## MEDIAL COLLATERAL LIGAMENT

The medial collateral ligament (MCL) is a broad ligament that spans the distance from the end of the femur (thigh bone) to the top of the tibia (shin bone), with a number of attachment sites on the way. The MCL resists widening or opening up of the inside of the knee joint. Due to its

many attachment points, and the nature of injury that results in an MCL strain, injury to the MCL may result in damage to the medial meniscus as well as to the Cruciate ligaments of the knee, and therefore a full examination is crucial to rule out damage to other structures of the knee.

## LATERAL COLLATERAL LIGAMENT

The lateral collateral ligament (LCL) is like a thin cord that runs on the outside of the knee from the femur to the top of the fibular (shin bone). The LCL resists widening or opening of the outside of the knee. Unlike the MCL,

the LCL is not connected to the lateral meniscus and therefore LCL injuries are not commonly associated with meniscus tears. However, again due to the nature of the injury, the cruciate ligaments of the knee may also become damaged.

# What causes a collateral ligament sprain of the knee?

Both the medial and lateral collateral ligaments of the knee are injured from direct impact to the knee, usually during sporting activities. MCL injuries occur from a blow to the outside of the knee which forces the inside of the knee to open out and therefore damage the MCL. LCL injuries occur from a blow to the inside of the knee, forcing the outer surface to open and therefore damage the LCL. LCL injuries are far less common than those affecting the MCL. As with most ligament injuries, the extent of the damage can be classified into three different grades;

**Grade I:** Mild tenderness is felt over the ligament but there is usually no swelling. When the stress tests are performed on the injured ligament (which serve to stress the collateral ligaments) pain is felt by the patient, but no joint laxity will be felt by the therapist

**Grade II:** There is a partial tear of the ligament and significant tenderness is felt over the injured ligament, with some swelling. When the stress tests are performed on the injured ligament, there is pain and laxity in the joint, however the therapist will be able to feel a definite end point (i.e. the ligament is damaged, but not completely torn)

**Grade III:** There is a complete tear of the ligament. Pain can vary in severity, and may actually be less than that of an individual with a grade II sprain. When the stress tests are performed on the injured ligament, there is significant laxity, and no end point will be felt by the therapist. The individual may also complain of having a very unstable knee

## What Treatment can I receive?

Treatment of either of the collateral ligaments of the knee is dependent on the severity (grade) of the injury. Most patients with grade I and II sprains are treated conservatively and can return to activity within 3-8 weeks. Patients with a grade II injury may be given a hinged brace early in the treatment. The recovery time for LCL patients can be from 2-6 weeks longer than that of the MCL. Patients who have had a grade III injury to their MCL or LCL can be treated either conservatively or surgically.

Conservative treatment will involve an initial period (of about 10 days) of wearing a knee immobiliser and the use of crutches. During this time it is important that the brace is removed a few times a day to work on bending the knee. After this period the patient is often given a hinged brace to wear and is encouraged to increase their range of motion and weight bearing as pain allows. Complete rehabilitation from a grade III collateral ligament tear can take 3-4 months. If surgery is required, which is often the case for athletes who want to return to their original level of performance, it is essential that a post-surgery rehabilitation programme is followed according to your surgeons and therapists advice.

- The application of ice in the first 48-72 hours will serve to reduce the bleeding, swelling and pain.

In any case of collateral ligament injury of the knee, it is important to consult with a doctor or allied health professional for a proper assessment of the joint due to the possibility of other structures in and around the knee joint also being damaged. Initial management before you can get to see a doctor or allied health professional will be the same as that for any sprain injury which includes **R.I.C.E.** treatment immediately after the injury for the next 48-72 hours.

**Rest:** Rest and immobilisation are essential following a collateral ligament injury until it has been assessed, as any further movement or stress to the ligament will only aggravate the injury and prolong the recovery. You may not have much of a choice as weight bearing could be extremely painful and feel very unstable.

**Ice:** Ice should be applied for 10-15 minutes every 2 hours and should never be applied directly to the skin (therefore always cover it with a tea towel or thin cloth). If you do not have an ice pack, frozen peas provide a good substitute.

**Compression:** Use a brace or compression bandage to support the knee and prevent further damage until treatment can be received. This will also help to control the inflammatory process and bleeding within the joint

**Elevation:** Try and keep the knee raised to help control the inflammatory process and bleeding within the joint

### PRECAUTIONS WHEN USING ICE THERAPY.

- Ice treatment must be used carefully otherwise it may cause a skin burn.
- Never put an ice pack directly onto the skin, always use a damp towel or cloth to prevent an ice burn.
- Only apply an ice pack to areas of skin with normal sensation i.e. you must be able to feel hot and cold.
- Never put an ice pack over an open wound or graze.
- Do not apply an ice pack to an area with poor circulation.

● Never leave an ice pack on the skin longer than the time stated in this advice sheet.

● Adults should always supervise young children when using ice packs. Application may be reduced and extra care should be taken when checking the skin.

● Remember to check the skin underneath every 5 minutes for:

- Whiteness of the skin
- Blueness of the skin
- Blotchy and painful skin
- Excessive numbness

**If you get any of these symptoms remove the ice pack immediately.**

## What exercises can I do?

It is important that you are aware that this is a general exercise programme for collateral ligament injuries of the knee, which can be adjusted depending on advice that you have been given by your health professional on assessment and the severity of your injury. As already stated, it is essential that you consult with your doctor or allied health

professional for a full assessment to ensure that no other structures are damaged, especially if you are experiencing excessive instability of your knee. It is also important to show this exercise programme to your doctor or allied health professional to determine at what stage it is safe to start depending on your grade of injury.

# 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

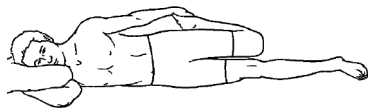
All exercises should be performed with control and in a pain free range of movement

### STRETCHING

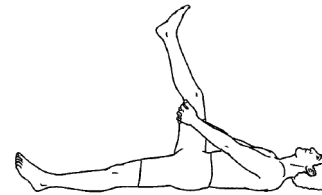
- Repeat each of these stretches 3 times (on both sides if necessary).
- Hold each stretch for at least 30 seconds.
- Hold a steady stretch, do not bounce.

#### QUADRICEPS STRETCH

Lying on your right side, your right arm extended up to cushion your head, use your left hand to grasp your left ankle as you bend your left

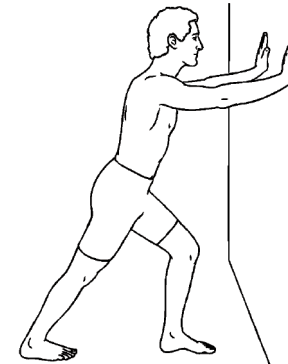


knee backwards. You should feel the stretch along the front of your thigh. It is important to keep the other leg bent at both the hip and the knee, so as not to hyperextend your back. A towel can be used to aid you in this stretch if you are unable to reach your ankle or bend your knee too far.



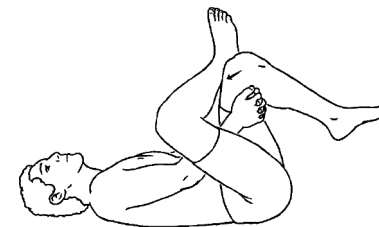
#### HAMSTRING STRETCH

Lying on back with one leg straight, raise the bent knee towards you and hold behind your knee. Now slowly straighten your knee until a stretch is felt in the back of the thigh. A towel can be used to aid you in this stretch if you are unable to reach your leg.



#### CALF STRETCH

Keeping back leg straight, with heel on floor and turned slightly outward, lean into wall until a stretch is felt in calf.



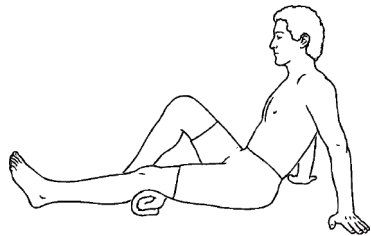
#### BUTTOCKS STRETCH

Lying on your back, rest your right ankle on your left knee. Using your hands lift your left leg into the air, bending the knee at 90°. Pull your left leg gently towards your body. You should feel a stretch in the upper back part of your right leg. A towel can be used to aid you in this stretch if you are unable to reach your leg.

# Exercises phase 1 (continued)

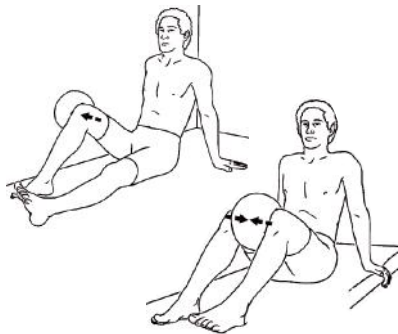
## STRENGTHENING

- Repeat **2 sets of 10-15 repetitions** on each side (unless otherwise stated in the exercise)
- Perform each exercise in a controlled manner and within a pain free range of movement
- If you are experiencing pain with any of these exercises and have already reduced your range of movement, it is important that you consult with a physiotherapist or allied health professional.



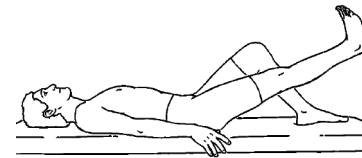
### TERMINAL LEG EXTENSIONS

Sitting on the floor with one leg outstretched in front of you and a pillow/rolled up towel under the knee. Lift the heel off the floor straightening the leg, hold for 5 sec. (contract the VMO muscle group), and then relax.



### BALL SQUEEZING AND PUSHING (A PILLOW CAN BE USED)

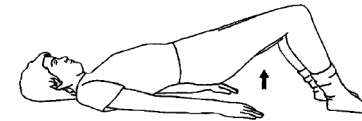
Lying on your back with your knees bent, firstly place the ball between your knees and squeeze. Hold for 10 seconds and repeat 10 times. Now place the ball between your knee and the wall, push out for 10 seconds and repeat 10 times on each leg



### STRAIGHT LEG RAISE 1

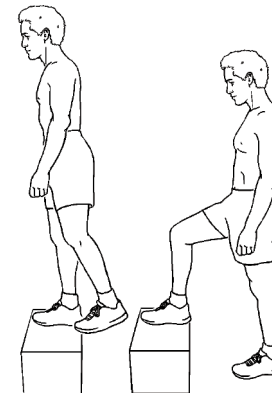
Lying on your back with your arms next to your side and one leg out stretched in front of you. Keep one leg bent, foot flat on the floor, and now raise the other leg to the height of the bent knee, keeping the leg straight. Repeat 10 times on each leg in each foot position

1. Toes pointing straight upwards
2. Toes pointing outwards.



### BRIDGING

With your pelvis in neutral (hip bones facing towards the ceiling) and TA contracted (pull belly button to spine), slowly raise buttocks from floor, keeping your pelvis stable and body in a straight line. Hold for 10 seconds and repeat 10 times



### STEP-UPS

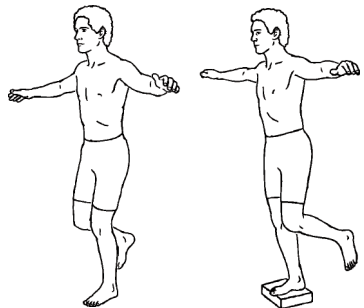
Stand on one leg on a step facing up the stairs. Slowly lower yourself by bending your knee. Return to starting position without pushing off with the opposite leg. Have your weight on your heel more than your toe, but foot flat, and your knee should be in line with your second toe when bending it i.e. be aware that your knee and foot do not roll inwards. Perform 2 sets of 10 reps per leg.

## Exercises phase 1 (continued)



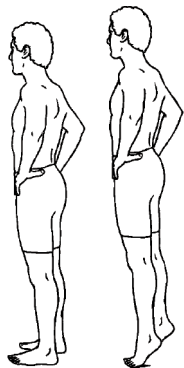
### GLUTES WITH THERABAND

Assume a side lying position with the knees bent and a black theraband tied around both knees. Keeping the feet together, lift the top knee up against the band as high as possible without the hips opening out, i.e. hips stay square and forward. Hold for 10 seconds. Repeat 10 times on each side.



### STORK STANDING

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



### CALF 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. Repeat this sequence 10 times.

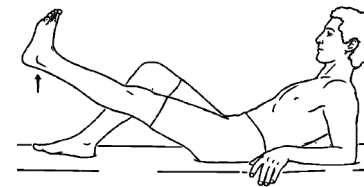
## Exercises phase 2

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

### STRENGTHENING

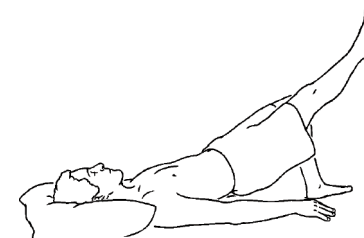
- Repeat 2 sets of 10-15 reps on each side (unless otherwise stated in the exercise)
- Maintain good control and form throughout the exercise i.e. in both directions of movement



### STRAIGHT LEG RAISE 2

Rest on your forearms, and lift your leg to the height of your bent knee. Keep your leg straight and don't let it rest on the floor on the return down. Repeat 10 times on each leg in each foot position

1. Toes pointing straight upwards
2. Toes pointing outwards.



### BRIDGING WITH ONE LEG EXTENDED

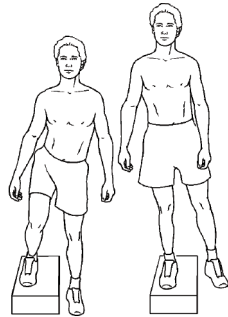
Lying on your back, bend both knees to 90° with your feet flat on the floor. Tighten T.A. and lift your pelvis and lower back off the floor. Now lift one foot off the floor, hold for 10 sec, put it back down, repeat with the other foot, and then relax completely. Begin again. Keep the T.A. and Glutes tight throughout the movement to keep the pelvis stable and without dropping to the one side. Repeat 10 times per leg.

## Exercises phase 2 (continued)



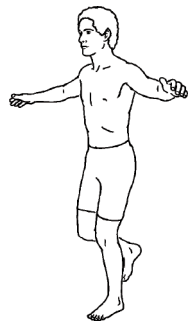
### STEP-DOWNS

Stand on one leg on a step facing down the stairs. Slowly lower yourself by bending your knee. Return to starting position without pushing off with the opposite leg. Be aware that your knee and foot do not roll inwards, that your weight is mostly on your heel with your foot flat, and that your knee goes down in line with your second toe.



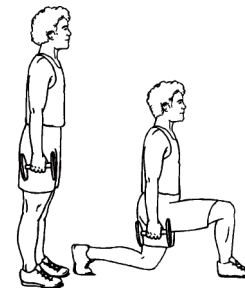
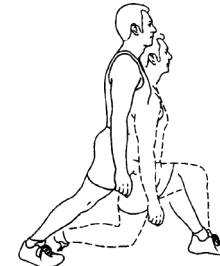
### LATERAL STEP-UPS

Standing side on to a step, step up sideways for 10-15 reps, turn around and repeat with the other leg. Make sure that the movement is controlled and you only use the leading leg to lift you. Keep your knee in line with your second toe as you go down.



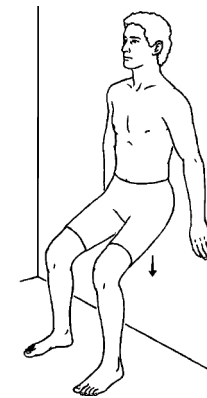
### STORK STAND PICK-UP

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)



### LUNGES

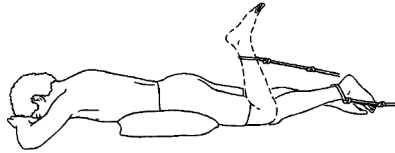
Place one foot in front of the other. Bend both knees together until you have a 90° bend in both. Ensure that your front knee does not go over your front foot when bending to 90°. Return to the starting position. Perform 1 set of 10 reps per leg (complete all 10 reps with the one foot forward before 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



### WALL SLIDES

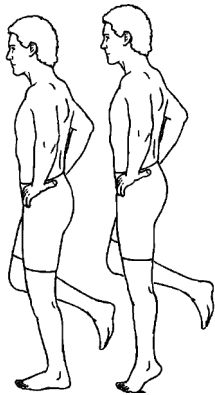
Stand leaning up against a wall, your feet a little away from the wall with your toes pointing forwards. Push your back against the wall. Slowly lower your body into a seated position and hold this position for 10 seconds. Complete 10 repetitions. Make sure that you work in a pain free range of movement, that you don't go down further than 90° in your knees, and that your feet are far enough forwards that your knees do not go over your toes

## Exercises phase 2 (continued)



### PRONE LYING HAMSTRING CURLS

Lying on your stomach with one end of the band tied around your ankle and the other end tied to the top of a table leg. Start with your knee straight and, whilst keeping your hips on the floor and stable, bend your knee pulling against the band. Attempt to bring your foot down towards your buttocks without allowing your knee or hips to lift off the floor. You can get theraband from a local sport store or physiotherapy practice.



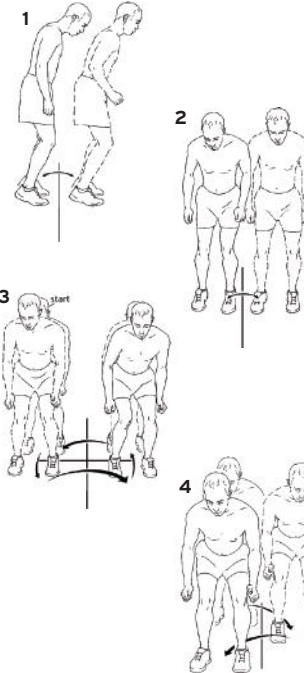
### SINGLE LEG CALF RAISES

Standing on one leg, 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. Repeat this sequence 10 times per leg

## Exercises phase 3

Progress to this phase once you are able to complete the exercises in

phase 2 with control and pain free.



### HOPPING

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

1. Forward and backward
2. Side to side
3. In a square
4. In a zigzag forwards and then backwards

Repeat each sequence 10 times per leg. Progress to hopping on one leg.

### RUNNING DRILLS:

These can be done once the above can be performed without pain and 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, zig-zag running etc. Also try and change the pace as you do them i.e. sudden sprinting, sudden stopping.

## 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)