



## YOUR GUIDE TO

# ILIOTIBIAL BAND (ITB) SYNDROME

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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.

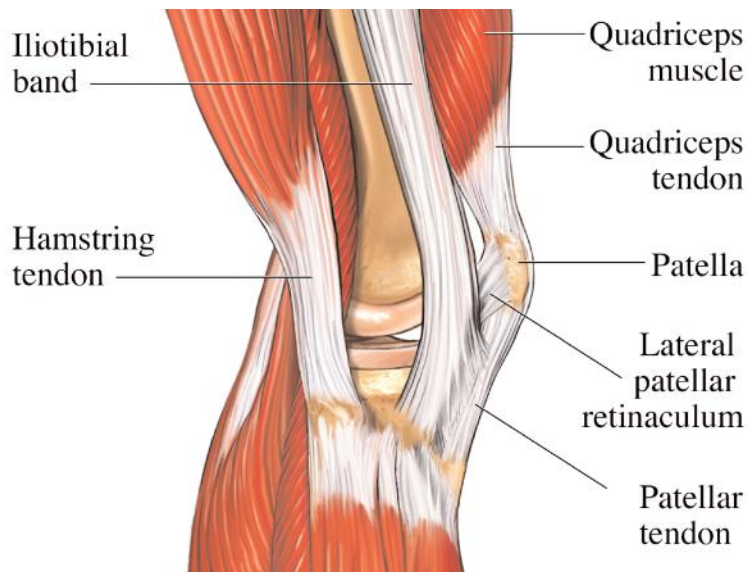
● Many people have found quick and lasting relief from their knee pain by acting upon the information provided, but everyone decides for themselves what to do with this information. Should you doubt a particular exercise in your situation, please consult your health professional.

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

## What is Iliotibial band Syndrome?

Iliotibial band syndrome is a common knee injury that results in pain on the outside of the knee joint caused by inflammation to the lower portion of the iliotibial band. The iliotibial band is a thick tendon-like portion of a muscle called the tensor fascia latae. This band passes from the muscle, which attaches to the pelvis and upper thigh bone, and travels down the outside of the thigh inserting on the shin bone (tibia) just below the knee joint. The main problem occurs when the tensor fascia latae muscle and iliotibial band become tight. This is said to occur due to a combination

of overuse and biomechanical factors. Excessive bending and straightening of the knee as well as poor biomechanics can cause irritation of the band and subsequent inflammation as it crosses over the outer surface of the knee joint (lateral femoral condyle) and less commonly the greater tuberosity (at the hip joint). Iliotibial band syndrome rarely gets so bad that it requires surgery, but can be extremely painful and may keep athletes and other active people from participating in activities because of pain.



## What Causes Iliotibial band syndrome?

**ITB syndrome** occurs commonly in runners, cyclists and long distance walkers and the two main causes are said to be overuse and biomechanical factors. Overuse is common in sports that require a lot of running or weight bearing. When the tensor fascia latae muscle and iliotibial band become fatigued and overloaded, they lose their ability to adequately stabilise the leg. This in turn places stress on the knee joint, resulting in pain and inflammation. The following are common causes of ITB syndrome:

### OVERUSE

- **Exercising on hard surfaces**
- **Exercising on uneven ground** e.g. running on a banked surface such as the shoulder of a road or an indoor track
- **Beginning an exercise programme too quickly, or increasing the intensity or duration of the programme too quickly**
- **In cycling, having the feet 'toed in' to an excessive angle**
- **Excessive uphill or downhill running**
- **Inadequate warm-up or cool down**

### BIOMECHANICAL FACTORS

- **Leg length differences**
- **Poor foot biomechanics** - high or low arches as well as over pronation (excessive inward rolling of the arch on running or walking) can all result in irritation to the iliotibial band. Correct foot wear is therefore essential for athletes to ensure that the correct support is given during activity.
- **Muscle imbalances** - weakness or fatigue of the gluteus medius muscles (muscles which provide abduction and outward rotation of the hip) results in an inward rotation of the hip joint and therefore an inwards rotation at the knee (knocked knee position). Since this muscle is also a hip abductor (moves leg away from the midline), weakness in this muscle would result in increased stress being placed on the tensor fascia latae muscle to perform hip abduction. This could result in tightness and over use of this muscle and hence the ITB. Muscle imbalances between the quadriceps and hamstring muscles as well as weakness in the VMO muscle (the inner quadriceps muscle) can also lead to tightness of the ITB due to the resultant compensations that occur.
- **Bowlegs or knocked knees** - both of these leg positions place an increased stress on the iliotibial band and can therefore result in its irritation and subsequent inflammation.

## What does ITB syndrome feel like?

The main symptom of **ITB syndrome** is pain over the outside of the knee joint. Patients are often unable to locate the exact site of the tenderness. With time and continued activity, the initial pain on the outside of the knee progresses to a more painful, sharp and localised discomfort over the bony prominences of the thigh and shin bones. The pain normally begins

after activity or at a specific time into the run. However, as the Iliotibial band becomes increasingly irritated, the symptoms typically begin earlier in an exercise session and can even occur at rest, especially if the person is sitting with their knees bent. Patients also sometimes report a snapping sensation over the outside of the knee joint.

## How will my Doctor or allied health professional know if it is ITB syndrome?

The diagnosis of ITB syndrome can usually be made without any complicated tests. Your Doctor or allied health professional will take a history of the problem and ask about any other injuries that may have occurred in the past. X-rays may be taken to make sure that there are no other injuries that could be adding to the problem. Generally, no swelling is visible. The snapping sensation usually cannot be heard.

Pain on the outside of the knee can be caused from conditions other than ITB syndrome. Your Doctor or allied health professional will therefore perform an examination of the knee and will look at your entire leg to

ensure an accurate diagnosis is given. You may want to take the shoes that you use to run or walk with you to your appointment.

If there is doubt about the diagnosis, or you are still having problems after reasonable attempts have been made to decrease the symptoms, a magnetic resonance imaging (MRI) scan may be suggested by your Doctor. An MRI scan is a special test that uses magnetic waves to create images of the soft tissues inside and around the knee. Regular X-rays only show the bones around the knee. The MRI can show if there are problems with the soft tissues such as the cartilage and ligaments.

## What treatment can I receive?

### A) NON-SURGICAL TREATMENT

Most cases of ITB syndrome can be treated with conservative measures. The goal of treatment is to reduce pain by reducing the inflammation, and to return the patient to full function. Measures that can be taken to achieve this include:

- **Ice:** Ice serves to reduce pain and inflammation and should be applied to the painful/inflamed area for 10-15 minutes at a time. This can be repeated every two hours if necessary. Ice should not be applied directly to the skin as this could result in an ice burn, and it is important to check the sensation to the area before applying (see notes on ice below).

### 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.**

- **Anti-inflammatory medication:**

This can be taken to control inflammation. It is important to get advice from your doctor or pharmacist before starting a course of anti-inflammatories.

- **Corticosteroid injection:** If pain and inflammation persists, your doctor may recommend a cortisone injection into the iliotibial band.

- **Physiotherapy:** This would include soft tissue techniques, education and a full rehabilitation programme to ensure return to full function. They may also refer you to a podiatrist for a biomechanical assessment and advice regarding footwear.

- **Activity Modification:** This is essential for effective recovery. Continued aggravation of the iliotibial band during treatment will

result in continued pain and limit return to full function. During treatment the patient may swim to maintain cardiovascular fitness but should avoid aggravating activities e.g running/cycling.

● **Exercise:** A full stretching and strengthening rehabilitation programme will be provided by your physiotherapist and is an essential part of the treatment for iliotibial band syndrome. The main focus of this programme will be on the stretching of the iliotibial band/tensor fascia latae muscle and strengthening of the muscles stabilising the knee and hip, especially hip abductors and knee flexors/extensors.

● **Education:** This is an essential part of the treatment protocol in the prevention of future episodes of ITB syndrome. Your physiotherapist can provide you with advice and information regarding your training regime, footwear, terrain of training, a continued home strengthening programme etc to try and prevent future episodes of pain

### **B) SURGERY**

Surgery is rarely needed to correct ITB problems, but may be considered for patients who do not respond to conservative treatment. The most common approach is to release the iliotibial band as it passes over the epicondyle of the femur (thigh bone) to prevent continued friction.

## What exercise can I do?

Rehabilitative exercises for ITB syndrome can be started immediately, but it is important that they are performed in a pain free range of motion, and that pain and inflammation have been addressed. A general exercise programme for iliotibial band syndrome has been included in this pack, which can be adjusted depending on advice that you have been given by your health care professional on assessment. The goal of rehabilitation is to return you to your sport or activity as soon as is

safely possible. If you return too soon, you may worsen your injury which will delay your recovery and may result in further damage. The exercises in this pack concentrate on increasing the overall strength and flexibility of the leg muscles, especially around the knee and hip joints. It is important with all the exercises that you progress from phase one only when you are able to complete the exercises in this phase pain free and with good control.

## Exercises phase 1

- 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.

### STRETCHES

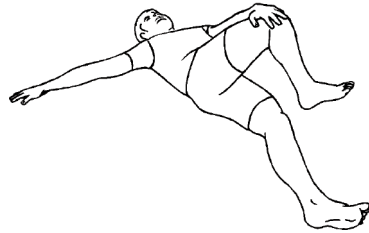
- Hold each stretch for **30 seconds** and repeat **2-3 sets** on each leg
- **Do not bounce** the stretch
- **Do not work into pain.** You should only be feeling a good pull in the muscles, not pain.



#### **ITB STRETCH 1**

Cross involved leg behind uninvolved leg in standing position, with a stretched leg behind, and lean to the uninvolved side until a stretch is felt over outside of involved hip.

## Exercises phase 1 (continued)



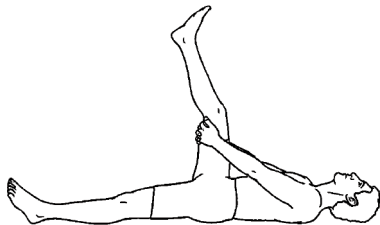
### ITB STRETCH 2

Lying on your back with arms to the sides. Lift your involved leg over the other leg placing your opposite hand on the back of the stretched thigh. Keep your arm on the involved side extended out to the side and both shoulders flat. If possible, try to straighten the knee of your stretched leg to accentuate the stretch.



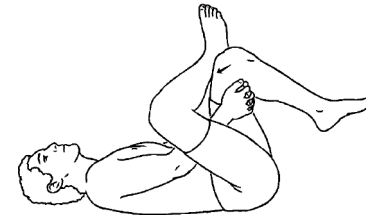
### PIRIFORMIS STRETCH

Cross leg over thigh and place elbow over outside of knee. Gently stretch buttock muscles by pushing bent knee across body.



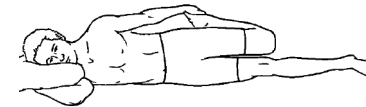
### HAMSTRING STRETCH

Lying on your back, one leg straight and one knee bent. Raise the bent leg up towards your chest until your knee is in line with your hip. Now straighten the knee. You should feel a stretch at the back of your leg. You can use a towel if necessary to aid you in lifting your leg for the stretch.



### 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 lifting your leg for this stretch.



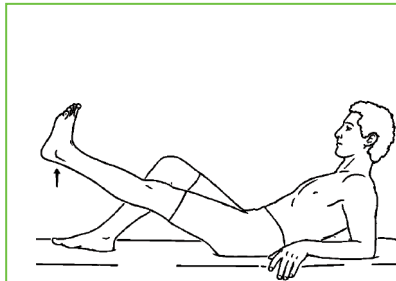
### QUADRICEPS STRETCH

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. Repeat this twice on your right before rolling over to stretch your left leg. 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.

# Exercises phase 1 (continued)

## STRENGTHENING

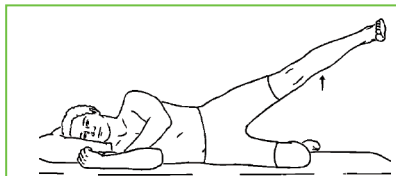
- Complete **2 sets** of **10-12 repetitions** on each leg (unless otherwise stated within the exercise)
- Always work in a pain free range of movement



### STRAIGHT LEG RAISES

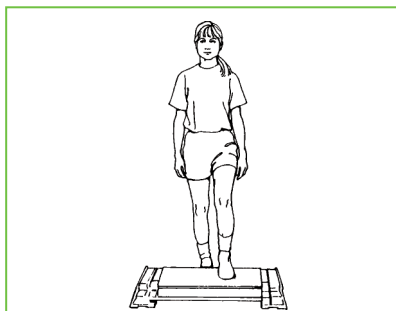
Sitting on the floor with one leg outstretched in front of you and your arms supporting your back by bringing them close to your body. Keep one leg bent, foot flat on the floor, and now raise the other leg 20cm off the floor, keeping the knee straight. Repeat 10 times on each leg with your foot in each position described below.

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



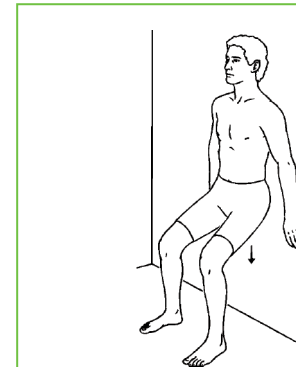
### SIDE-LYING HIP ABDUCTION

Lying on side, with both legs straight. Raise the top leg 8-10 inches away from the opposite leg towards the ceiling keeping your leg straight.



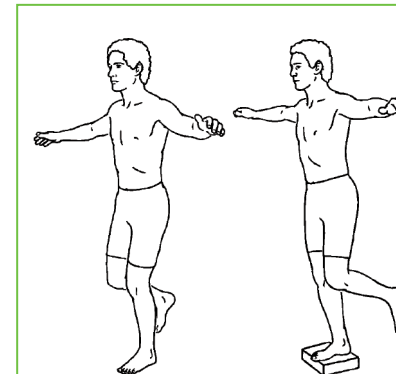
### STEP-UPS

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. Be aware that your knee and foot do not roll inwards.



### WALL SLIDES

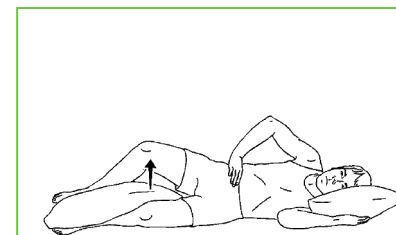
Stand leaning up against a wall, your feet a little away from the wall and pointing slightly outwards. Push your back against the wall. Slowly lower your body into a seated position and hold this position for 10 seconds. Complete 10 repetitions.



### 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. Make sure that your pelvis stays even throughout the exercise i.e. doesn't drop one side



### OYSTER EXERCISE

Lying on your side with your knees bent and feet in line with your buttocks, contract your TA. Now allow the top leg to rise into the air as far as you can without moving your pelvis, and hold for 10 seconds. Make sure you control the entire motion (up and down).

## Exercises phase 2

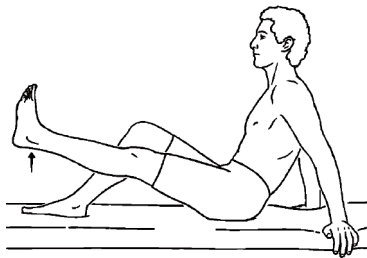
**Phase 2 exercises** can be started when you are able to do all the Stretching and Strengthening exercises in Phase 1 with no adverse effects and good control. Continue to

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)

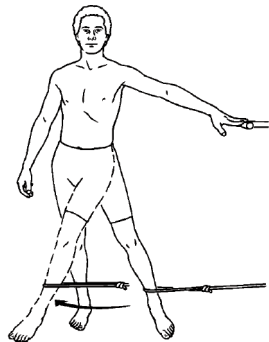
● Maintain good control and form throughout the exercise i.e. in both directions of movement



#### STRAIGHT LEG RAISE

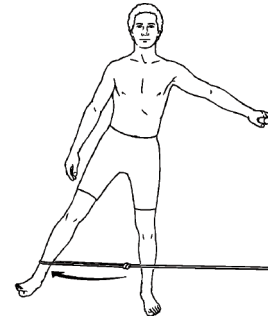
In an upright sitting position, rest back on hands, tighten muscle on front of thigh, then lift leg 8 - 10 inches from floor, keeping the leg straight throughout the movement. Repeat 10 times on each leg with your foot in each position described below.

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



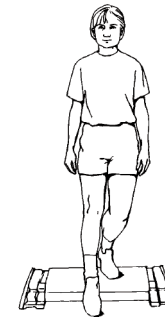
#### RESISTED HIP ADDUCTION

Attach one end of a band to the base of a door or table leg, and the other around the ankle of your involved leg. Standing side on to the table/door with involved leg next to the table/door, bring your leg across your body and slowly return to starting position.



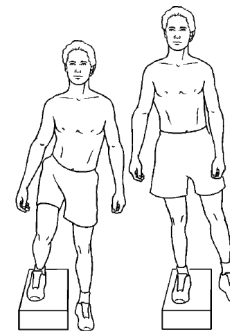
#### RESISTED HIP ABDUCTION

In the above position, with the involved leg furthest from the table/door, pull the involved leg away from the other leg. Ensure that you maintain your balance and do not lean to the side as you move your leg.



#### STEP-DOWNS

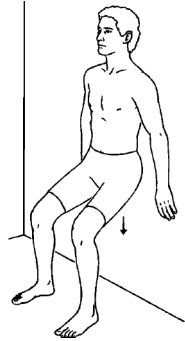
Stand on one leg on a step facing down the stairs. Slowly lower yourself by bending your knee. Return to starting position without pushing off with the opposite leg. Be aware that your knee and foot do not roll inwards. Perform 2 sets of 10 reps per leg.



#### LATERAL STEP-UPS

Stand side on to the edge of the step, with your foot parallel to the edge. Slowly lower yourself off the step, controlling the movement of your knee, bending as far as you can pain free and with control. Control on the way up as well ensuring that you don't push off with the opposite foot.

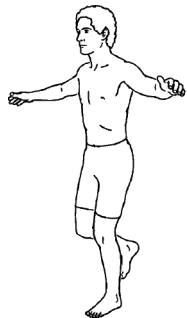
## Exercises phase 2 (continued)



### WALL SLIDES

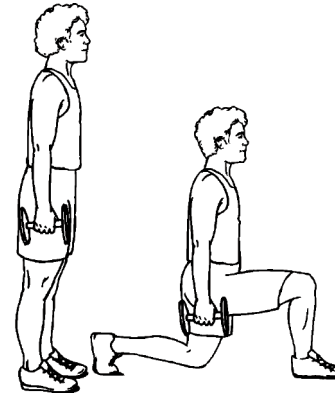
(can also be done using a fitball)

Stand leaning up against a wall, your feet a little away from the wall and pointing slightly outwards. Push your back against the wall. Place a small ball between your knee and squeeze. Slowly lower your body into a seated position for 5-10 seconds. Complete 10 repetitions. Removing the ball from between your legs and raising one leg off the ground would be another progression of this exercise.



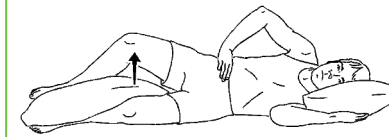
### STORK STAND PICK-UP

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

Lunge with one foot forward keeping the knees 90° (or at least attempt to reach 90°). Ensure that your front knee does not go over your front foot when bending to 90°. Return to the starting position. Now lunge to the left side in the above technique and then to the right (i.e. change the direction of movement). Try to be as stable as possible during the exercise, and perform it as a complete movement. A set of ten in each direction is counted as one set. Start with this and progress to two if you are able.



### OYSTER EXERCISE 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.

## 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)