

HAMSTRING STRAIN



What is it?

An excessive stretch or tearing of muscle fibres and related tissues. This can occur at any one of the attachment sites or at any point along the length of the muscle. There are two general attachments for the three muscles; 1) the bony prominence felt under each “cheek” when sitting, 2) the back of the knee.

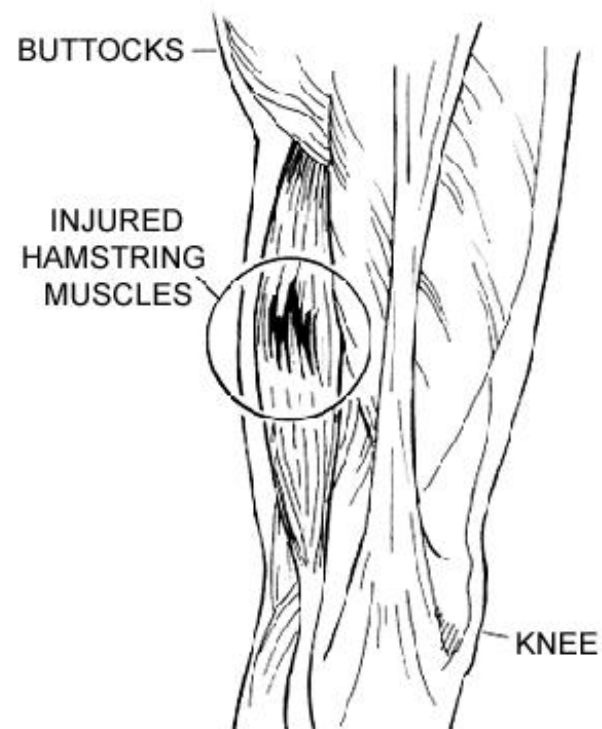
What Causes this?

Hamstring strains are often caused by a sudden stretch or a rapid contraction against resistance. The hamstrings cross over two joints and there is greater potential for overuse and strain. Important precipitating factors include; “tight” hamstrings, an imbalance between the strength of the hamstrings and the stronger quadriceps, altered posture and poor core stability, fatigue and an inadequate warm-up.

What are the signs & symptoms?

Main Symptoms – Pain anywhere along the course of the muscle, but usually located deep within the muscle belly of the posterior thigh. Pain on activity i.e. when stretching or contracting the muscle.

Other possible symptoms – Swelling and Bruising may be present in more severe strains, but this is more likely to occur after direct trauma to the muscle.



What will physiotherapy consist of?

If hamstring strains are left untreated fibrosis may occur with scar tissue replacing normal contractile tissue. This dysfunctional healing mixed with immobilisation can lead to tightness and shortening of the muscle that may predispose to further strains. These changes will impair the ability of the hip and knee during daily activities, such as walking, running and sport. Physiotherapy may include:

Massage encompasses a variety of techniques and is given with sufficient pressure through the superficial tissue to reach the deep lying structures. It is used to increase blood flow, decrease swelling, reduce muscle spasm and promote normal tissue repair.

Deep friction is an aggressive massage technique. It is applied across the tissue fibres. Pressure is given as deeply as possible. This technique is initially painful but can cause a numbing effect. It can be used to break down scar tissue, restore normal movement and prepare the injured structure for mobilisation or manipulation.

Mobilisation is a manual technique where the joint and soft tissues are gently moved by the physiotherapist to restore normal range, lubricate joint surfaces, and relieve pain.

Ultrasonic Therapy transmits sound waves through the tissues stimulating the body's chemical reactions and therefore healing process, just as shaking a test tube in the laboratory speeds up a chemical reaction. It reduces tissue spasm, accelerates the healing process and results in pain relief.

Interferential Therapy introduces a small electrical current into the tissues and can be used at varying frequencies for differing treatment effects. E.g. pain relief, muscle or nerve stimulation, promoting blood flow and reducing swelling/inflammation.

Other treatments that may be used

Laser Therapy emits beams of light into the tissues of the body, stimulating chemical reactions and having a similar effect to ultrasound though using light energy instead of sound energy.

Acupuncture is an oriental technique of introducing needles into the skin to increase or decrease energy flow to promote pain relief and healing.

Injection Therapy is a specialist procedure, which needs the consent of your G.P. A non-harmful steroid and local anaesthetic are injected directly into the injured structure. It has a dramatic effect on removing inflammation and promoting healing.

Podiatry involves an analysis of the foot mechanics and structure during walking or running and correction as appropriate.

What should the patient do to help their condition?

Active Rest – keep active but avoid activities that aggravate your condition i.e. any activity that places repetitive strain on your hamstring, such as running or lifting heavy weights at the gym.

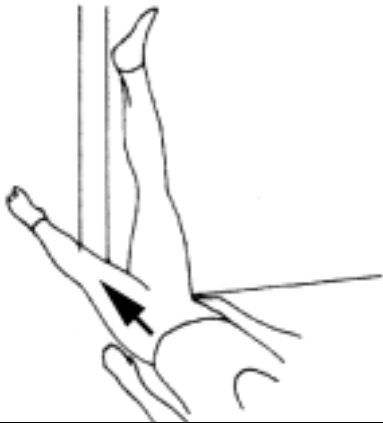
Apply an ice pack – for a maximum of 20 minutes. Do this in acute injuries where there is swelling, inflammation and pain. A bag of frozen peas wrapped in a damp cloth works well because it moulds to the shape of the heel. Ensure that the skin does not change colour (the sign of an ice burn).

Contrast bathing - From 5 days post injury put the foot into a bucket of water as hot as you can withstand for 5 minutes followed by one with water as cold as you can withstand for 5 minutes repeat for approximately 20 – 30 minutes.

Take ibuprofen/ analgesia - according to the directions on the packet, up to the maximum daily dose. It is not suitable for people who have a history of stomach ulcers, or for some people with asthma. If in doubt, ask your pharmacist for advice.

Exercise/Postural programme – comply with the prescribed exercise/postural programme. **Your physio will instruct you as to which of the exercises to begin with, when to add the others, as well as how to progress the exercises.**

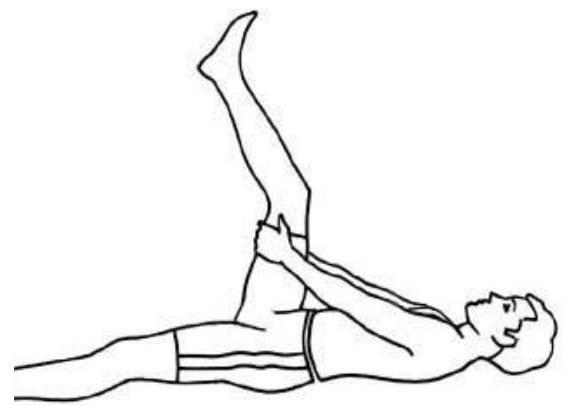
1. Hamstring stretch on a wall



2. Standing stretch



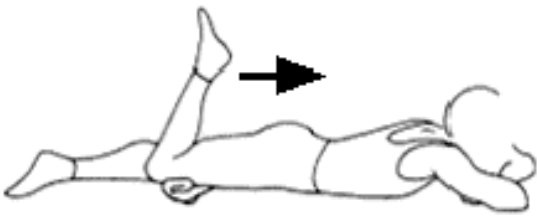
3. Lying stretch



Hamstring stretches 1-2:

1. Lie on your back with your buttocks close to a doorway, and extend your legs straight out in front of you. Raise your injured leg and rest it against the wall next to the door frame. Hold this for 30 seconds, feeling a stretch in the back of your thigh.
2. Stand with the heel of your injured leg resting on a stool. Keep your knee straight. Gently lean forward from your hips, until you feel a stretch in the back of your thigh. Hold this position for 30 seconds. Return to the starting position. Do not round your shoulders or back. Repeat all stretches 3 times.

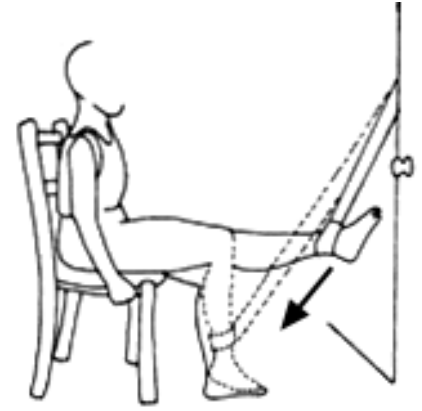
4. Prone knee flexion



5. Static hamstring



6. Theraband hamstring curls



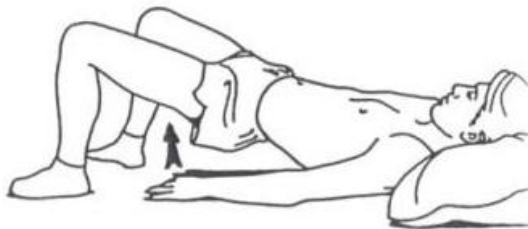
Hamstring strengthening exercise:

4. Lie on your stomach and slowly bend your knee. Repeat 20 times.

5. Sit upright with your injured leg bent to 90 degrees and the other leg straight. Contract your hamstrings by pressing your heel into the floor. Hold for 5 seconds. Repeat 10 times.

6. Sit in a chair facing a door. Loop and tie one end of the tubing around the ankle of your injured leg. Tie a knot in the other end and shut the knot in the door. Bend your knee so that your foot slides along the floor and moves back underneath the chair. Slowly let your foot slide forward again. Repeat 10 times. Perform 3 sets.

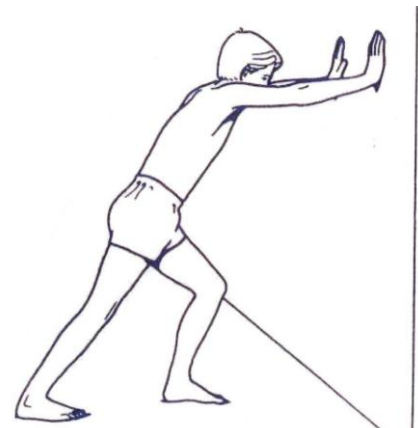
7. Bridging



8. Wall slides



9. Gastrocnemius stretch



7. Lie flat on your back with your knees bent 90 degrees. Lift your bottom of the floor so that your hips and torso are level. Hold for 5 seconds. Repeat 10 times.

8. Stand with your back, shoulders, and head against a wall and look straight ahead. Your feet should be one foot away from the wall and a shoulder's width apart. Slowly squat until you are almost in a sitting position. Hold this position for 10 seconds. Slowly slide back up. Repeat 5 times.

9. Stretch slowly into the desired direction and then hold for approximately 30 seconds, during this period the stretch should ease and you should keep going further into the stretch without jarring or bouncing.

What if physiotherapy does not help or resolve my condition?

It is extremely rare that physiotherapy does not resolve this condition, in these cases a cortisone injection may be appropriate and in very extreme cases surgery is a possible option. These options can be discussed with your therapist if appropriate.