

Trauma and Orthopaedics

Plantar fasciitis

What is plantar fasciitis?

Plantar fasciitis is a common condition caused by degeneration (wear and tear) and inflammation of the plantar fascia.

The plantar fascia is a fibrous sheet in the sole of the foot. It helps maintain your foot's arch.



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Patient Information

Symptoms

Heel pain is usually worse on your first steps in the morning or after rest. It is often worse towards the end of the day or after long periods spent on your feet.

Causes of plantar fasciitis

- Constant stress - common in people who spend a lot of time on their feet
- Being overweight
- Tightness of Achilles tendon – this causes stress on your heel
- Recent change in activity or change to exercise routine – increasing running distance/change of surface or even just walking on harder floors.
- Unsuitable footwear – poor cushioning or old and worn.
- Rheumatic conditions – people with rheumatoid arthritis or ankylosing spondylitis are prone to inflammation elsewhere.
- High arched or flat feet – high arches mean you are less effective at absorbing the stress of walking.
- Heel spurs **are not** a cause of plantar fasciitis.

Treatment

- Non-steroidal anti-inflammatory medications such as ibuprofen and Nurofen. Seek advice from a doctor or pharmacist before taking these.
- Footwear and orthotics - wear shoes with extra cushioning such as running trainers. Use gel heel pads or medial arch supports if needed. Do not walk barefoot or on hard surfaces.
- Exercises and stretches
- Night splints if you get regular pain on first steps in morning
- Cast application (occasionally)
- Extracorporeal Shockwave therapy (ESWT) can be used to help improve pain in people that have not had improvement with the above measures.
- Steroid injection – useful for short term pain relief in severe cases.

Patient Information

Most people's symptoms will go away with treatment, but this can take up to 18 months. Occasionally symptoms can return.

Surgery

Surgery is rarely required and has risks and complications. These include:

- infection
- ongoing pain
- nerve damage leading to tingling and numbness in your foot

Division of the plantar fascia can result in a flat foot.

Plantar fasciitis exercises

1. Plantar fascia massage



Sit on a chair with a roll under the arch of your foot. Use a rolling pin or cold drinks can if you are at home.

Roll your foot forward and backwards from the heel to the balls of your foot.

Continue for 2 to 5 minutes.

Patient Information

2. Stretching plantar fascia +/- massage

Stretch



Sit with your foot placed across the other knee. Pull your toes and your foot up towards your shin with your hand. Hold for 10 seconds and relax.

Repeat 6 to 10 times. Try to do this 2 to 3 times per day.

Massage



You can add massage to the heel and sole of the foot using thumbs once you are able to tolerate any discomfort or pain. Do this while the foot is in the stretched position.

Try blocking the bottom of your foot against a table leg or wall. This will leave both hands free to massage.

Patient Information

3. Stretching calf

(do either/or with exercise 4)



Lie on your back. Place a belt/towel around your foot and hold it with both hands. Pull the towel up slowly until you feel a stretch in your calf. Keep your foot relaxed.

Maintain the position for 10 seconds then relax. Repeat 6 to 10 times. Try to do this 3 times per day.

4. Calf stretch

(do either/or with exercise 3)



Stand by a wall and place the painful leg behind the unaffected leg. Make sure your heel is on the ground, with your knee straight and feet facing forwards.

Slowly bend your front knee forwards towards the wall whilst keeping your back knee locked straight and your heel touching the floor.

You should feel a stretch on your back calf. Maintain the position for 10 seconds then relax. Repeat 6 to 10 times. Try to do this 3 times per day.

If your foot falls flat/arch drops towards floor when lunging forwards, try placing a small block or book lengthways under the inside half of the foot that is at the back. This is so the ankle rolls out slightly and then stretch in this position.

Patient Information

5. Soleus stretch

(do either/or with exercise 6)



Sit comfortably or lie down flat.

Place a belt/dressing gown cord around the ball of your foot. Hold the cord/belt and pull the foot up towards you as far as you can until you feel a stretch.

Maintain the position for 10 seconds, then relax. Repeat 6 to 10 times. Try to do this 3 times per day.

6. Soleus stretch

(do either/or with exercise 5)



Stand in front of or sideways to a step. Put your affected foot on it and keep the foot facing forwards. Put your bodyweight through your hands and arms using walls or bannisters if you can.

Slowly move the knee forward without lifting the heel off the step. Do this until you feel a stretch in the back of the calf. Maintain the position for 10 seconds, then relax.

Repeat 6 to 10 times. Try to do this 3 times per day.

Patient Information

7. Stretching plantar fascia



Stand in front of a wall or at the bottom of a set of stairs. Extend and block your toes up against the wall/bottom step, keeping your foot flat and your heel on the floor.

Slowly let your front knee bend until you feel a gentle stretch under the foot/at the back of the calf. Make sure your heel stays on the floor.

Maintain the position for 10 seconds, then relax. Repeat 6 to 10 times, try to do this 3 times per day.

8. Seated calf raise



Sit on a chair with your feet flat on the floor. Push through the ball of your big toe and raise your heel(s) off the floor. Make sure you keep your toes relaxed and aim to feel a good contraction in your calf. Hold for 3 seconds, then slowly lower your heels back to the floor.

Build up to 4 sets of 20.

To progress, you can lean your elbows onto knees and push down as you are lifting heels. You could also rest weights on your knees. This will increase the load.

Patient Information

9. Calf raises



Hold on to on a solid surface for support and balance.

Push through the ball of your big toe and raise your heel(s) off the floor.

Keep your knees straight and do not lean forwards. Try to keep your toes as relaxed as possible without gripping the floor.

Hold for 3 seconds at the top and lower slowly back down. You should feel the work in the top of your calf muscle.

Once you can do 2 to 3 sets of 10 repetitions easily with good technique, follow the structure below. Complete in one go with 1 to 2 minutes rest in between.

Repetitions (reps)	Rest
10 reps	1 to 2 minutes
8 reps	1 to 2 minutes
6 reps	1 to 2 minutes
4 reps	1 to 2 minutes

Once you can complete this with bodyweight, try adding more weight for each set so it is progressively harder. Do this once per day.

Alternate days between heavy, light, seated and standing, with rest days included for you to recover.

Patient Information

10. Calf raises toes on a towel



Place a book or thick towel on the floor. Stand with your toes/balls of your feet resting on towel/block so your toes are partly extended up. Lift up your heel by pushing through toes/go on tip toes while on the block.

Take 3 seconds on the way up, hold for 2 seconds at the top, and take 3 seconds to lower down.

Do 3 sets of 12 with 1 minute's rest in between each set. Do this every other day.

Use your bodyweight to start. Once the exercise becomes easier, add weight using weights or a rucksack with books inside.

You may need to reduce the numbers of repetitions from 12 to 10 to 8 as load (weight) increases progressively.

Your physiotherapist may add further exercises to help any proximal ROM (range of movement) and muscle recruitment issues around the hip and pelvis. These will help to address any altered functional movement patterns that may be contributing to your heel pain.

Patient Information

Contact details

If you have any questions or concerns, please contact the following:

Consultants' secretary (Monday – Friday, 8am to 4.30pm)

- Mr Dhukaram – Jas Viridi 024 7696 5095
- Mrs Chapman – Sophie Carvell/Amber Jolliffe 024 7696 7117
- Mr Ali – Claire Merrall 024 7696 5073

For further information on plantar fasciitis, visit

<https://www.nhs.uk/conditions/plantar-fasciitis/>

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