



# Plantar Heel Pain

Information for patients  
Podiatry



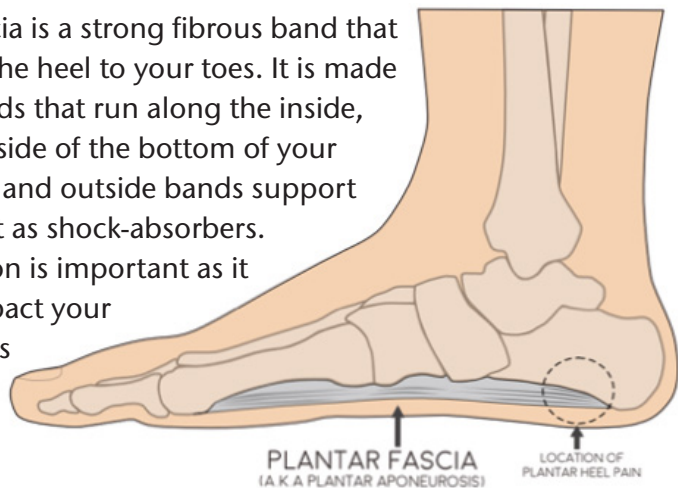
This is by far the most common condition affecting the foot; one in ten people develop it at some time in their life. It is most common in people between the ages of 40 and 60 years; however, it can occur at any age. Women are twice more likely to develop this condition than men. It is also common in athletes. The good news is that with appropriate advice and treatment this will resolve for the vast majority of people.

Treatment protocols for heel pain almost always start with basic principles and we would encourage you to consider trying some self-help treatment before making a referral to your local Podiatry department.

## WHAT IS THE PLANTAR FASCIA?

The plantar fascia is a strong fibrous band that stretches from the heel to your toes. It is made up of three bands that run along the inside, middle and outside of the bottom of your foot. The inside and outside bands support the arch and act as shock-absorbers. Shock absorption is important as it reduces the impact your body weight has on the foot when walking, running and carrying out any weight-bearing exercises. Not only does the plantar fascia support the arch, but it also stabilizes the foot to allow you to push off through your toes.

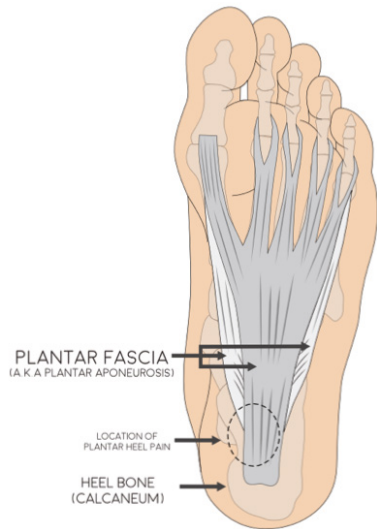
When pain develops in the plantar fascia, it can be very disabling. Every step can become more painful and cause you to change the way that you walk. When this happens it can lead to strains to other parts of your body.



Plantar fascia pain or plantar fasciopathy is the most common condition affecting the foot. The condition is usually diagnosed by clinical findings alone.

### Classic signs and symptoms:

- ❖ A gradual onset of pain affecting the base of the heel
- ❖ Pain in the heel during the first steps when you get out of bed in the morning
- ❖ Pain in the heel when weight bearing after a period of inactivity or rest
- ❖ Pain that eases or lessens with moderate activity
- ❖ Worsening pain later on during the day or after long periods of standing or walking



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## **WHAT CAUSES THE PROBLEM?**

In most cases, plantar fascia pain or plantar fasciopathy develops as a result of changes to the way our foot functions with small tears occurring within the plantar fascia. These injuries happen at a rate faster than the body can heal them and as a result the plantar fascia starts to become thickened and painful. The pain is most commonly felt under the inside of the heel but can be anywhere along the bands of the plantar fascia.

## **Other contributing factors**

- ❖ Being overweight
- ❖ Weakness in the muscles within your feet or leg
- ❖ Tightness in the muscles up the backs of your legs
- ❖ Wearing unsupportive footwear such as shoes or sandals which have a low heel and don't support the feet
- ❖ Spending long periods standing or walking, especially with a sudden increase in these activities
- ❖ Jobs that involve standing or walking on hard surfaces for long periods of time
- ❖ Sudden increase in physical activity levels  
- for example, recently started running

## **WHAT CAN I DO TO HELP?**

Unfortunately there is no quick or easy fix and your symptoms won't improve overnight. Plantar fascia pain is self-limiting and in many cases will improve without any treatment. It is important though that if you have any of the contributing factors you make the necessary changes to help your recovery. The one person who can help you manage your symptoms is you

## WEIGHT MANAGEMENT

Increased weight will place extra stress on your joints and soft tissues in your feet. Losing even a small amount of weight will make a big difference to this especially when walking, running, or going up and downstairs.

If you need help with weight-control, you can find information, advice and groups you can join to help you manage your weight better. To access the NHS BMI Calculator go to: [www.nhs.uk/live-well/healthyweight/bmi-calculator/](http://www.nhs.uk/live-well/healthyweight/bmi-calculator/) or otherwise open your camera on your smartphone or tablet and hold it up to the code and the link should appear on your screen, press this link and you'll be taken to this web address. This guide will help you on whether you should consider weight management.



## FOOTWEAR

Shoes that have flexible soles generally offer the foot less support and can increase the stress in soft tissues such as your plantar fascia. If you have shoelaces make sure they are tied appropriately. Avoid wearing hard, flat or unsupportive shoes.

## PAIN MANAGEMENT

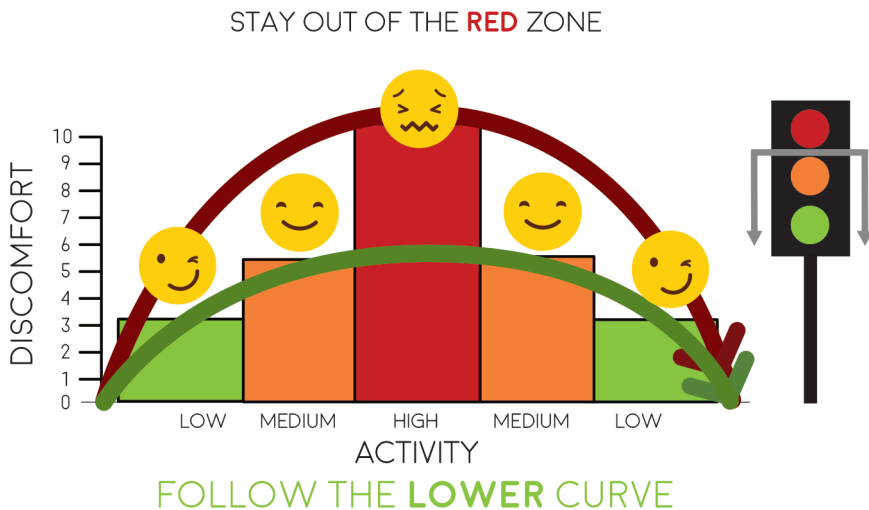
Pain medication can help reduce your symptoms, allow you to move more comfortably which will aid your recovery. Your community Pharmacist can provide guidance on specific medication or other methods of pain relief (always read the label and manufacturer's guidelines).

## INJURY MANAGEMENT

The P.O.L.I.C.E guidelines describe what you should do for the first 24 to 48 hours after suffering a mild sprain, strain or sports injury.

**P**rotection - Protect or support your injured body part for the first 24 to 48 hours after injury. Use a light bandage to support the injury.

**O**ptimal **L**oading - Early activity encourages early recovery. The key of optimal loading is movement of the injured area within a pain-free range to help promote optimal healing.



Prolonged rest could lengthen your recovery period and it may impact on your health and wellbeing.

**I**ce- If you've had an injury or flare-up in the last two days:

- ❖ wrap crushed ice in a damp towel
- ❖ hold it for 20 minutes against the part of your body that hurts. Make sure you use a damp towel between the ice and the skin to avoid the ice burning you.

Alternatively, you could try sports sprays and gel/cool packs, which do a similar job. You can do this every two to three hours.

## **SHOULD I USE A HEAT PAD?**

After two days, you may find that heat is more relaxing. You could use a heat pad or a hot water bottle with an insulated cover on it. Make sure this is not too hot and is not directly touching your skin. You should do this three to four times a day for 10 to 15 minutes.

**C**ompression- Apply compression with a bandage or tubi-grip type of support until the swelling goes down. Wrap the bandage starting from the end furthest from your heart. Loosen the bandage if the pain increases or the area becomes numb.

**Don't make the bandage too tight and do not wear tubigrip or any compression bandage in bed at night.**

**E**levation- Elevate your foot / ankle above the level of your heart as much as possible during the first 24 to 48 hours, especially when sitting or lying down. Make sure you use pillows underneath your foot for support.

After 48 hours:

- ❖ Try to weight-bear more, loading with a limp is generally normal in this phase, exercise can help relieve pain
- ❖ Do whatever you normally would and remain at work, or return to work
- ❖ Avoid sports or heavy lifting until you have less discomfort and improved movement

If you are in pain do not try and do all your normal daily activities such as housework, at once. Break the harder jobs down into smaller time frames and do something gentler in between. Extensive walking or standing should be avoided if it aggravates your pain. It is recommended to modify activities rather than to fully stop all forms of movement or exercise, so try swimming or cycling instead of walking or running.

## **STRENGTHENING AND STRETCHING EXERCISES**

Current evidence based strengthening and stretching exercises for the muscles in and around your foot and ankle can help to improve your heel pain.



## 1. Calf towel stretch

This exercise is designed to stretch the plantar fascia.

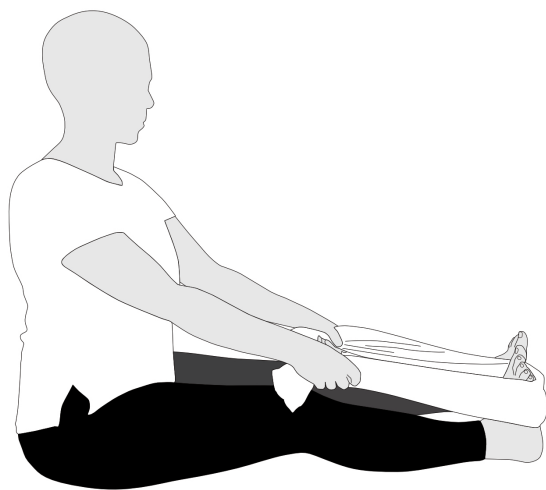
Start by placing a towel around the ball of the painful foot keeping your heel in contact with the ground and avoid bending your knee.

Pull the towel towards you until you feel a stretch along the bottom of your foot and the calf muscles in the back of your leg.

Hold the stretch for 30 seconds and repeat three times with a small period of rest in between stretches.

It is particularly useful to perform this stretch first thing in the morning and after periods of rest.

**If you feel this stretching exercise is making your pain worse then focus on the strengthening exercises.**



## 2. Standing Calf stretch

This exercise is done in two parts.

First support yourself by placing both hands shoulder height and width apart against the wall. Once supported take a step back with your painful foot. Make sure your heels are in contact with the ground and remain like this throughout this exercise with both feet also pointing forwards towards the wall.

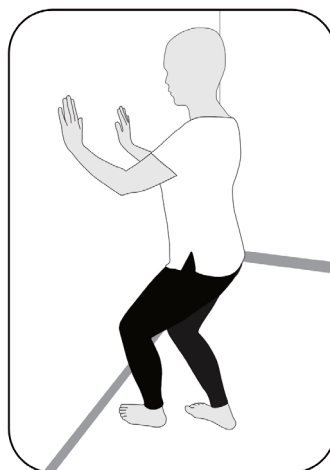
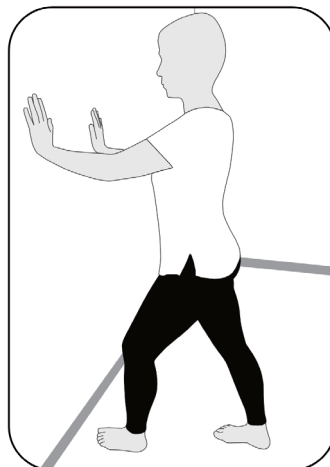
Now slowly begin to bend your front knee whilst moving your upper body towards the wall until you feel a stretch in the calf muscles in the back of your leg.

Hold the stretch for 20 seconds and repeat three times with a small period of rest in between stretches.

The second part of this exercise is designed to stretch the soleus muscle which is one of your calf muscles. Starting in the same position as before slide your painful foot towards the front foot as being demonstrated. Now when bending the front knee also bend the knee of the back leg until you feel a deeper stretch in the calf muscle. Like the other stretches make sure your heel is in contact with the ground throughout the exercise.

Hold this stretch for 20 seconds and repeat three times.

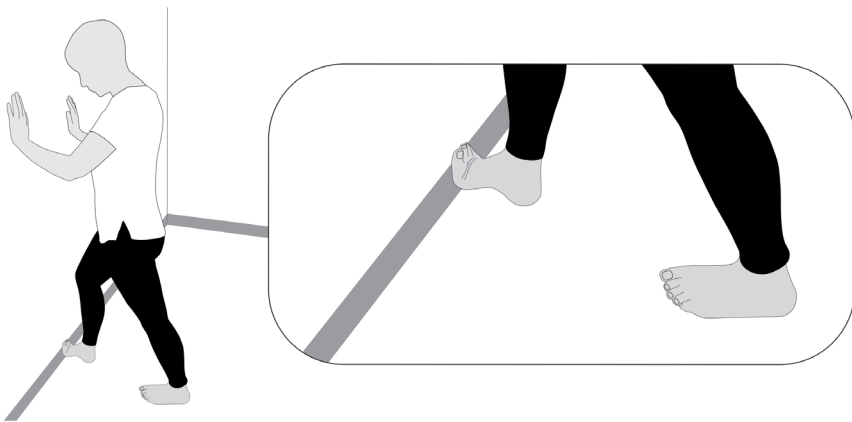
**If you feel this stretching exercise is making your pain worse then please focus on the strengthening exercises.**



### 3. Plantar fascia wall stretch

This exercise is designed to stretch the plantar fascia as well as the calf muscles.

First support yourself by placing both hands shoulder height and width apart against the wall. Place your painful foot in front of you and slowly begin bending your toes against the wall with the foot angled at around 45 degrees. Your heels must be kept on the ground throughout this exercise.



Now, start bending your front knee whilst moving your upper body towards the wall until you feel a stretch in the calf muscles in the back of your leg and the plantar fascia along the bottom of your foot.

Hold the stretch for 20 seconds and repeat three times with a small period of rest in between stretches.

This stretch can be done with or without footwear.

**If you feel this stretching exercise is making your pain worse then please focus on the strengthening exercises.**

#### **4. Standing double heel raises**

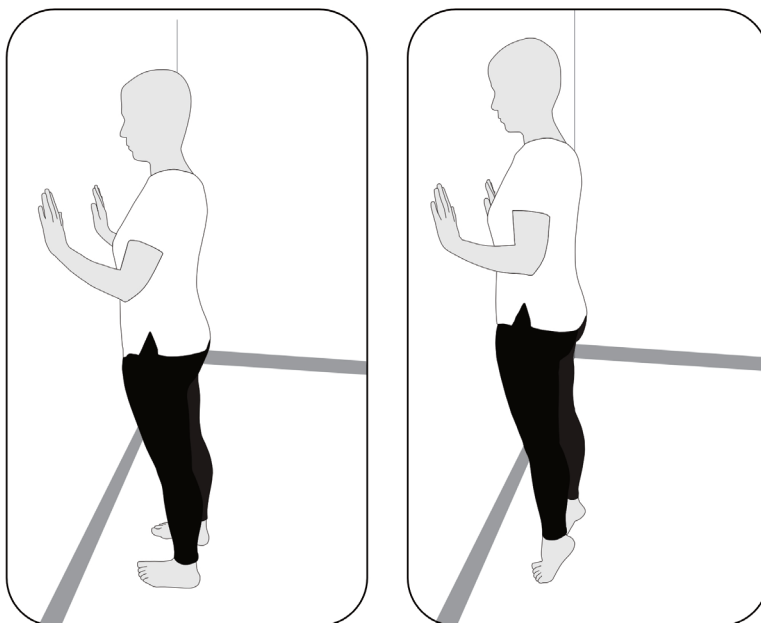
This exercise is designed to strengthen the plantar fascia as well as the calf muscles.

Standing close to the wall place both hands shoulder height and width apart as this will help with support.

Slowly start to raise up onto your tip toes lifting both heels off the ground. When you have raised the heels up as far as you are comfortable, begin to slowly and in a controlled way, lower the heels back down towards the ground.

Strengthening exercises should be built up gradually over a periods of weeks, so to begin with do as many repetitions as you can manage.

The aim is to do three sets of around 10-15 repetitions but remember it may take you several weeks before you are able to reach close to this.

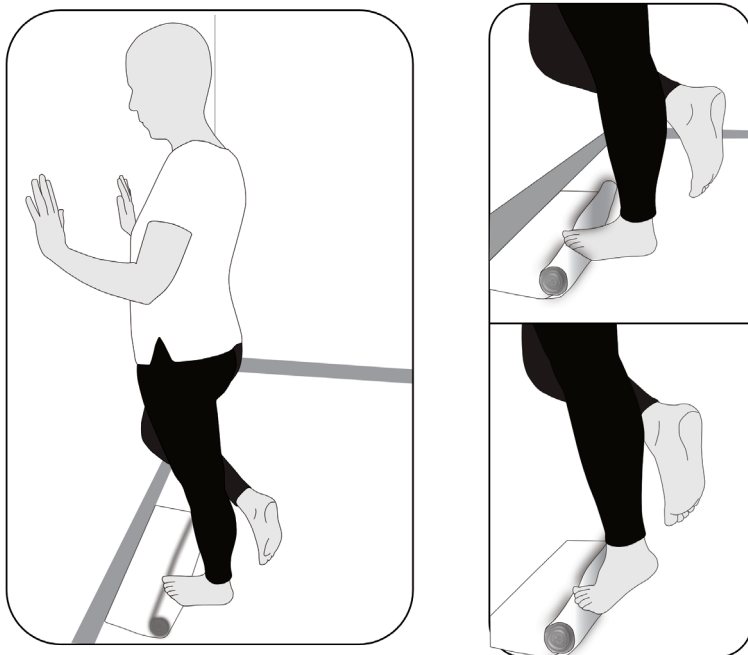


## 5. Plantar Fascia Loading exercise (High Load exercise)

This exercise is designed to strengthen the small muscles in your foot.

Place a rolled up towel on the floor. Place the toes of your painful foot against the rolled edge of the towel in as fully a flexed position as you can comfortably manage.

Now, begin to raise up onto your tiptoes lifting your heel off of the ground for a count of three seconds. Pause at the top for two seconds and then slowly lower your heel back down to the ground for a count of three seconds. One set of 15 is recommended.



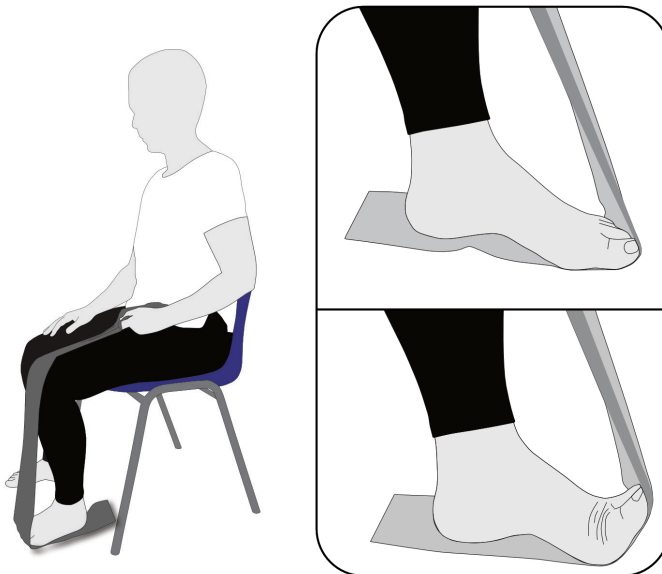
**This exercise should be performed every second day.**

## 6. Intrinsic foot exercises (Theraband)

This exercise is designed to strengthen the small muscles in the foot. This exercise is performed in a seated position making sure your back is straight and leg bent comfortably at 90 degrees with your painful foot placed on a strip of Theraband.

Pull the end of the Theraband over your knee towards you which in turn will pull your toes up into a flexed position. Anchor the band on your thigh maintaining a good level of tension throughout the exercise. Hold the band tight and begin to slowly push your toes down towards the ground against the resistance of the band. When your toes reach the ground allow them to slowly raise back to their starting position.

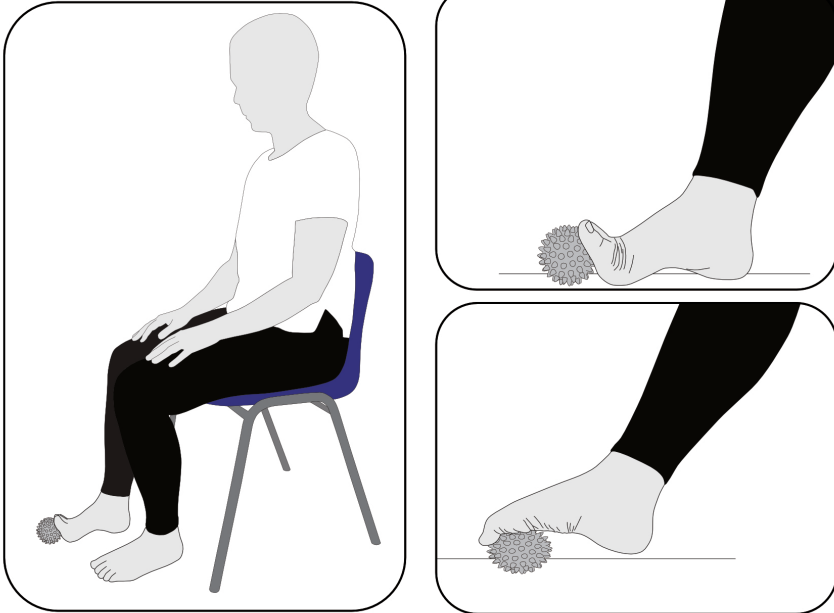
You are aiming to do three sets of around 10-15 repetitions. You can adjust the difficulty of the exercise by creating more or less tension on the Theraband. Make sure your heel stays in contact with the ground throughout the exercise.



## 7. Foot arch exercise

This exercise is designed to strengthen the muscles in the arch of the foot.

Sitting comfortably in a chair, flex your toes against the friction ball with your heel and ball of the foot placed on the ground.



Slowly lift your heel and start to roll the ball under your toes. Your toes must continue to stay in contact with the ball at all times. Hold this position for three seconds and then slowly roll the ball backwards to bring the foot back to its starting position. When rolling the ball back make sure your heel touches the ground first before the ball of the foot.

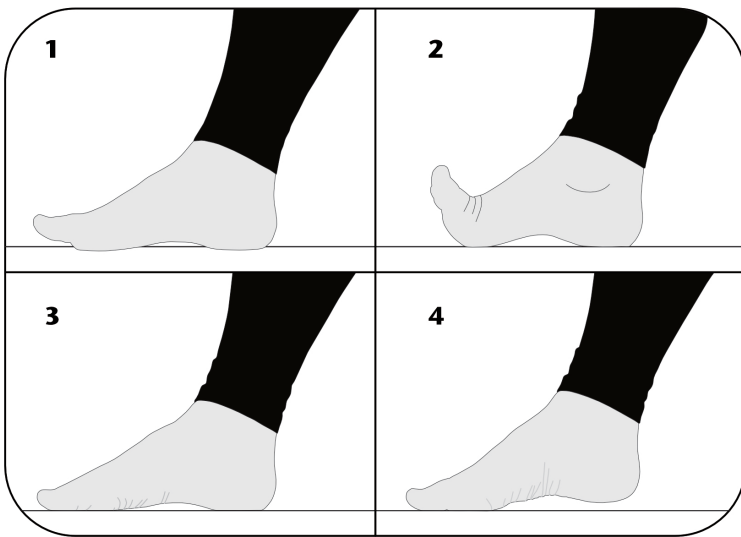
You should be able to feel the effects of this exercise in the arch of your foot and the muscles in the back of your leg.

## 8. Toe motion exercise

This exercise is designed to strengthen the small muscles in your foot and can be done with or without footwear.

In a seated position place your heel and ball of the foot on the ground and lift your toes towards you holding this for five seconds. Slowly bring your toes back down to the ground. Now with the tips of your toes grip the ground and slowly lift your heel up very slightly. Hold this position for five seconds. Relax and bring the toes back towards holding again for five seconds. Continue to work between these two positions for 10 repetitions.

If you experience some cramping in your foot when doing this exercise you should reduce the number of repetitions.

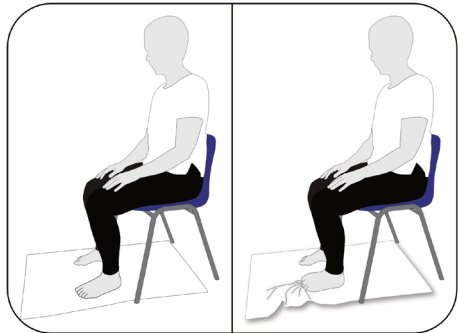




## 9. Intrinsic towel strengthening

This exercise is designed to strengthen the small muscles in your foot.

Start by placing a small towel flat on the ground. This exercise is performed in a seated position making sure your back is straight and legs bent comfortably at 90 degrees.



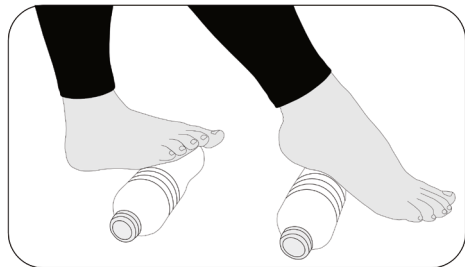
Place your painful foot on top of the towel and using your toes start scrunching the towel so that it is being pulled towards you. Do this in a slow controlled manner, making sure your heel remains in contact with the ground throughout this exercise.

When you have pulled the towel in as far as possible, flatten it back out and repeat the process between three and five times.

## 10. Cold Therapy

This exercise is an effective way of massaging the plantar fascia. Fill a small bottle  $\frac{3}{4}$  full with water and place in the freezer until frozen.

To use place the frozen bottle on the ground placing your painful foot on top and begin slowly rolling your foot back and forwards over the bottle from your heel to your toes. Apply as much pressure as you are comfortable with and continue to do this for around five minutes.



## STRAPPING

Strapping/Taping can be used to help support the arch of your foot and reduce some of the load on the plantar fascia. This can be a useful short term treatment that can help reduce your symptoms.

- ❖ The aim of low dye taping is to help remove some of the load on the plantar fascia and reduce discomfort.
- ❖ The tape used for this is a rigid strapping called zinc oxide tape. It's available in most pharmacies and can also be bought online.
- ❖ Taping is only a short term treatment and we recommend it's used until your pain levels decrease.

We advise that each application of the tape is kept in place for a maximum of 3 to 4 days. You may find that the tape needs to be replaced more frequently in order for it to remain effective.

Before you start it can sometimes be helpful to have your strips of tape pre-cut. For this taping technique you will need 2 different lengths of the zinc oxide tape.

The long strip is measured by starting at the base and side of the big toe take the tape along the inside of your foot, around your heel up to the base of your small toe. You will need 3 of these strips.

The short strip is measured by starting the tape on the outside of your foot and taking it across to the inside. You will need to cut at least 8 strips this size.

## HOW TO APPLY THE TAPE

When applying the tape each strip should overlap the one before, applying enough tension as to avoid any wrinkling of the tape. You might have to get someone to help you with this.

1. First point your big toe downwards as being demonstrated.

2. With your first long strip of tape start at the base and side of the big toe joint and wrap it around your heel and up towards the base of your small toe.

The second long strip will start on the opposite side from the first one, at the base of the small toe and will wrap around the heel and attach to the base of the big toe.

The third strip will be the same as the first and will go from the inside of your foot to the outside.

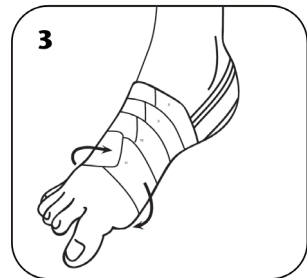
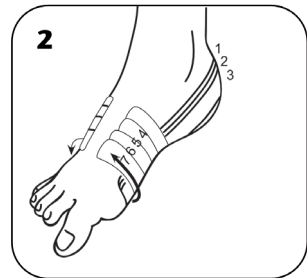
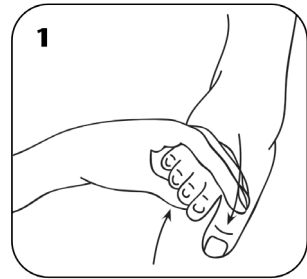
With the first of your shorter strips starting on the outside of your foot, take the tape across to sole of your foot just in front of the heel and attach it to the inside of your foot.

Apply 3 more of the shorter strips in the same way keeping going, overlapping until the tape is just behind the ball of your foot. foot and take the tape across the top of your foot attaching it to the outside of your foot.

Initially the tape might feel slightly tight but this should ease off.

The tape should be removed immediately if you experience any

- ❖ increased discomfort
- ❖ itching
- ❖ Irritation
- ❖ pins and needles.



## **PATIENCE**

Have patience, most people's symptoms should start to improve within three months of following this advice.

## **WHAT ELSE CAN BE DONE?**

The good news is that your pain should start to improve once you start following the above advice. If you have any concerns that you are getting worse or notice any changes in the shape of your foot please contact your local MSK Podiatrist or email [PodiatryMSK@lanarkshire.scot.nhs.uk](mailto:PodiatryMSK@lanarkshire.scot.nhs.uk).

## **FREQUENTLY ASKED QUESTIONS**

The information below will answer many of the questions you may have in the early part of your treatment. We aim to ensure your specific needs are considered throughout. A shared decision making process is used by our teams. This means you will be informed about the treatment options open to you the risks and benefits of each option. You will be supported to make a choice about which treatment best meets your needs.

We hope the following questions that have been developed on the back of MSK focus groups, will provide you with some answers and information around your condition.

### **What is wrong? Why? What is the cause?**

Plantar fascia pain or plantar fasciopathy develops as a result of changes to the way our foot functions. As a result small injuries start occurring within the plantar fascia. These injuries happen at a rate faster than the body can heal them and as a result the plantar fascia starts to become thickened and painful. The pain is most commonly felt under the inside of the heel but can be anywhere along the bands of the plantar fascia..

### **Other contributing factors**

- ❖ Being overweight
- ❖ Weakness in the muscles within your feet or leg

- ❖ Tightness in the muscles up the backs of your legs
- ❖ Wearing unsupportive footwear such as shoes or sandals which have a low heel and don't support the feet
- ❖ Spending long periods standing or walking, especially with a sudden increase in these activities
- ❖ Jobs that involve standing or walking on hard surfaces for long periods of time
- ❖ Sudden increase in physical activity levels - for example, recently started running.

### **What is the possible impact on my health and function?**

It can be very disabling, each step can become painful, which in turn can lead to strains elsewhere in the body.

### **Will I get better or worse?**

The good news is that with appropriate advice and treatment this will resolve in the vast majority of cases.

### **Is it curable?**

Unfortunately, there is no quick or easy fix and your symptoms will not improve overnight. The advice below is focused on reducing your symptoms to help you get back to normal activity. Most peoples' symptoms improve but it may take several months to get better.

### **How long will it take to get better?**

Most people's symptoms should start to improve within three months of following the self-help advice. It can take several months to achieve a significant improvement.

## **What are you (the health professional) able to do about my problem?**

By using our self-help tool, we would like to help you to better understand your condition and provide you with the tools which should help support your recovery.

## **What is the treatment that is most appropriate for me?**

Treatment protocols for heel pain almost always start with basic principles and we would encourage you to consider trying some self-help treatment in the first instance before making a referral to your local Podiatry department.

## **What can I do to help myself to alleviate it?**

We would encourage you to consider trying some selfhelp treatment in the first instance before making a referral to your local Podiatry department. Pain medication can help to reduce your pain and help you move more comfortably and help aid your recovery. Speaking to your community Pharmacist can provide guidance on specific medication or other methods of pain relief.

## **How can I reduce or control my pain?**

Pain medication can help to reduce your pain and help you move more comfortably to help aid your recovery. Speaking to your community Pharmacist can provide guidance on specific medication or other methods of pain relief.

## **How can I maintain my function and do the things I want to and need to do?**

Optimal Loading- Early activity encourages early recovery. The key of optimal loading is movement of the injured area within a pain-free range to help promote optimal healing. Prolonged rest could lengthen your recovery period and it may impact on your health and wellbeing.

## What activities can I do and how should I adapt them

### (e.g. sports, work)?

Avoid high impact activities like running or activities which involve long periods of standing which will significantly increase load through the plantar fascia, we would encourage you to participate in low impact activities like walking, swimming, cycling etc.

## Have I made an improvement?

Most people's symptoms should start to improve within three months of following the self-help advice, you should notice that although you may still have episodes of pain they will be becoming less frequent and severe.

## Why am I not improving? Where have I gone wrong?

### Am I doing the right things?

There could be a number of reasons why your symptoms may not be improving. If you have followed the self-help advice for three months and your pain has not started to improve please contact your local MSK Podiatrist or email **[PodiatryMSK@lanarkshire.scot.nhs.uk](mailto:PodiatryMSK@lanarkshire.scot.nhs.uk)**.

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NHS Lanarkshire General  
Enquiry Line: 0300 30 30 243

**NHS inform** - The national health information service for Scotland.

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