

## Plantar Fasciopathy Rehab Programme



### 1. Single leg squat

Focus on control. Balance on one leg and bend your knee over your toes. 10-15 reps on each leg. Progress by increasing depth of movement.



### 2. Plantar Fascial stretch

In sitting with the right foot resting on your left knee. Bend the ankle and big toe up (as shown), hold for 10 seconds, repeat 10 times. Repeat on the other foot.



*\*\*Please note this is an example programme **not** a recipe!!\*\**

### 3. Modified calf raise

Barefoot, with a rolled up towel under your toes. Slowly push up into a calf raise, hold at the top then lower. The speed is roughly 3 seconds up, 2 second hold, 3 seconds down. Do 3 sets of 12 reps on each leg.

If too painful or too hard start on 2 legs. If too easy on 1 leg add weight to make 12 reps challenging.

Gradually increase the load under guidance from your health professional



### 4. Ankle strengthening.

Turn the ankle out against the band. 8-12 reps then turn the ankle in against the band 8-12 reps on each leg. Repeat this 2 or 3 times.



### 5. Isometric toe flexion.

Push the big toe down as hard as comfortable against resistance (e.g. A wedge/ your hand) hold for 3 seconds, relax for 3 seconds. Repeat 5-10 times on each foot.

Combine your rehab programme with finding the right level of exercise which causes minimal pain and doesn't aggravate symptoms the following day. Choose comfortable footwear and consider using gel heel cups to help symptoms settle.

# Plantar Fasciopathy Rehab Programme

This is an example of a rehab programme for plantar fasciopathy based on clinical reasoning and recent research. It isn't a recipe for every patient! Here's a quick run through of each exercise;

- 1) Single leg squat - we start with a simple control exercise that has the added benefit of working into ankle dorsiflexion range. It helps proprioception and serves as a useful warm up to prepare the foot and ankle for the more challenging exercises.
- 2) Plantar fascial stretch - research from [DiGiovanni et al. \(2003\)](#) found this stretch to be superior to standard Achilles stretching for plantar fasciopathy (PF). It may help improve ankle dorsiflexion and great toe extension range, both of which have been cited as potential risk factors in PF.
- 3) Modified calf raise - [Rathleff et al. \(2014\)](#) found a progressive heavy loading programme using the modified calf raise (with a towel) effective in treating PF. The addition of load helps to strengthen the foot and calf muscles, hopefully aiding in load tolerance and absorption.
- 4) Strengthening inversion and eversion - tibialis posterior is thought to provide support to the arch of the foot and the evertors have been found to be weak in patients with PF in a [recent study](#). Strengthening both may assist in supporting the plantar fascia and improving load capacity of the foot and ankle.
- 5) Toe flexor strength has also been found to be reduced in patients with PF. [Recent research](#) has found that heavy isometric toe flexion exercises can improve strength and jump performance. We place them at the end as the modified calf raise is also challenging for these muscles.

Typically a programme like this would be done 3 or 4 times per week with a rest day in between. Please note though that any exercise programme needs to be designed to suit the individual and this may not be appropriate for those with more irritable symptoms or different rehab needs.

Early rehab where pain is the main issue may require a focus more on isometric exercise and activity modification. Later stage rehab may require heavier load and exercises to develop maximal strength and power (depending on the goals of the patient).

# How to treat plantar fasciopathy in runners

- Created as a free resource by Clinical Edge
- [Based on Physio Edge podcast 062 with @tomgoom](#)
- Get your free trial of online Physio education at [clinicaledge.co](https://clinicaledge.co)

## Pain dominant phase

Pain levels may be influenced by local tissue irritation alongside patient beliefs and perceived level of threat. Treatment of plantar fasciopathy (PF) can commence with patient education on the pathology and prognosis to reduce the threat level. The patients expectations about prognosis and recovery should be managed at the start to avoid problems later in the rehabilitation process.

### Load management

In a runner with an irritable plantar fasciopathy, running should be reduced or avoided to allow the symptoms to settle. In highly irritable patients aggravating factors such as walking and time spent on feet may also need to be reduced.

### Exercise

Isometric toe flexion and isometric mid range calf raises may help to reduce pain. Ask the patient to score pain during a load test, perform isometric exercise and then reassess the load test. An immediate improvement in pain is a positive indication for the use of isometric exercises.

### Stretching

Digiovanni et al. (2003) compared a plantar fascia stretching programme to a calf stretching programme, identifying superior outcomes with plantar fascia stretching. Plantar fascia stretching can be performed in a non-weight bearing position with ankle dorsiflexion and great toe extension. The use of stretching will depend on the irritability of the patients symptoms.

## **Taping**

Taping techniques may assist in moderating plantar fascia pain and load. Immediate symptom improvement may indicate the inclusion of taping as a short term intervention to reduce pain. Taping should not be relied on as the sole treatment intervention.

## **Orthotics**

Footwear modification can be used before considering the addition of orthotics. Footwear with a firm arch support may aggravate symptoms, whereas shoes with a cushioned arch may be more comfortable. Patients can trial different shoes to identify the most comfortable. If a change in footwear does not settle symptoms, a gel heel cup can also be used. At this point if the symptoms have not settled, off the shelf orthotics or referral to a podiatrist should be considered.

## **Load dominant phase**

Rathleff et al. (2014) studied the use of a heavy slow resistance program (HSRP) in the treatment of plantar fasciopathy. The HSRP included calf raises performed barefoot with a towel under the toes to increase plantar fascia loading. The program increased load from 12 repetition max to 8 repetition max over a period of 12 weeks.

Plantar fascia loading should be started when tolerated in the initial stages of rehabilitation. Patients may not be able to tolerate the Rathleff et al. programme initially so the plantar fascia should be loaded progressing from double leg to single leg calf raises. Once the patient can comfortably perform single leg calf raises then the Rathleff et al. programme should be started.

## **Impairments**

Sullivan et al. (2015) compared 200 people with plantar fasciopathy to a control group, identifying reduced ankle dorsiflexion, reduced ankle eversion and toe flexor strength in the plantar fasciopathy group. During rehabilitation these impairments need to be addressed through a variety of treatment interventions. Treatment planning should be guided by the specific impairments identified during the objective assessment. Treatment may consist of manual therapy to improve ankle dorsiflexion range of movement and specific strengthening exercises to address any deficits.

## **When to start running?**

There is no recipe for the return to running, however task-based criteria can be used to help in your decision making. Consider reintroducing running when the patient is getting less early morning stiffness, can tolerate walking, able to single leg calf raise and able to tolerate impact testing (hopping, jumping etc). Rathleff et al. (2015) recommends that the patient should be able to walk 10km and be pain free for 4 weeks before starting running.

## **Run tolerance test**

A run tolerance test on the clinic treadmill can be used to identify patient readiness for return to running. A maximum of 5-10 minutes running is performed, with patient feedback, distance completed and 24 hour pain response measured and recorded. If there is no reaction or increase in pain within the subsequent 24 hours, this distance is used as the starting point for a return to running programme.

## Links associated with this episode:

[Digiovanni et al. 2003. Tissue-specific plantar fascia-stretching exercise enhances outcomes in patients with chronic heel pain. A prospective, randomized study.](#)

[Rathleff et al. 2014. High-load strength training improves outcome in patients with plantar fasciitis: A randomized controlled trial with 12-month follow-up.](#)

[Rathleff MS, Thorborg K. 2016 'Load me up, Scotty': mechanotherapy for plantar fasciopathy \(formerly known as plantar fasciitis\)](#)

[Sullivan et al. 2015. Musculoskeletal and Activity-Related Factors Associated With Plantar Heel Pain](#)

## Previous episodes of interest:

[PE #038 Plantar fasciopathy loading programs with Michael Rathleff](#)