



PLANTAR FASCIITIS AND HEEL PAIN

Plantar Fasciitis (PF) means inflammation of the plantar fascia, a thick band of connective tissue that spans the arch of the foot from the calcaneus (heel bone) to the bases of the toes. The function of this tissue is to support the longitudinal and stabilize the foot as the heel comes off the ground during push off. Individuals with true "plantar fasciitis" have pain and tenderness along the entire longitudinal arch and the discomfort is worse at push off.

Heel Pain may be associated with plantar fasciitis but is more frequently seen in isolation. Patients with pain and tenderness localized to just the center or inner aspect of the heel and pain on heel strike are described as having "Heel Pain Syndrome" (HPS). Although in many instances HPS is most likely due to inflammation of the plantar fascia at its attachment to the calcaneus (heel bone), it may also be due to a number of other pain processes. These other possibilities include nerve entrapment, stress fracture, bone inflammation and bursitis.

At the initial assessment an X-ray of the heel is usually taken to rule out the possibility of a bone problem causing the pain. Although a heel spur may be identified on the X-ray it remains unclear whether this spur contributes to the pain or not. The fact that many people with this type of spur have no pain and that removing the spur often does not relieve the pain in patients with HPS, casts doubt on its role as a cause of the discomfort.

As surgery for HPS and plantar fasciitis has, at best, inconsistent results, a detrimental effect on normal foot mechanics and a significant risk of secondary foot pain, non-operative measures are emphasized in the treatment protocol and surgery is considered only as a last resort.

This handout is a guide to the stretching exercises we have found most effective in treatment of HPS. These stretches, together with custom shoe inserts specifically fabricated for this condition, should alleviate or improve symptoms in more than 90% of patients with heel pain.

PLANTAR FASCIITIS PRE-STRETCHING

Many people with HPS and PF have what is referred to as "startup" pain. This means that when they first start to walk after lying in bed or sitting, they experience moderate to severe discomfort with the first few steps. This phenomenon is caused by tension suddenly developing in the inflamed fascia as it is initially stretched with weight bearing and push off. Pre-stretching the fascia prior to standing after prolonged immobility will reduce startup pain.

Pre-stretch #1

Step 1 In the sitting position fully extend your knees (i.e. straight legs) and place both hands on your knees.

Step 2 Point your toes towards your head bending your foot upwards at the ankle (Fig. 1). The more effort you put into this motion the better the stretch.

Step 3 Hold this position as long as possible (Minimum 1-2 minutes).

Hints: Use a towel or belt around your flexed foot. Try doing this stretch before getting out of bed in AM.



Fig. 1

Pre-stretch #2

Step 1 Place the ball of your foot on the edge of a stool while seated with knee flexed (Fig. 2).

Step 2 Exert downward pressure on the knee with your hands. Hold this position for 30 seconds to a minute. Repeat as necessary.

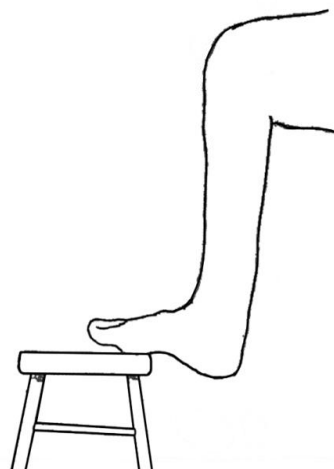
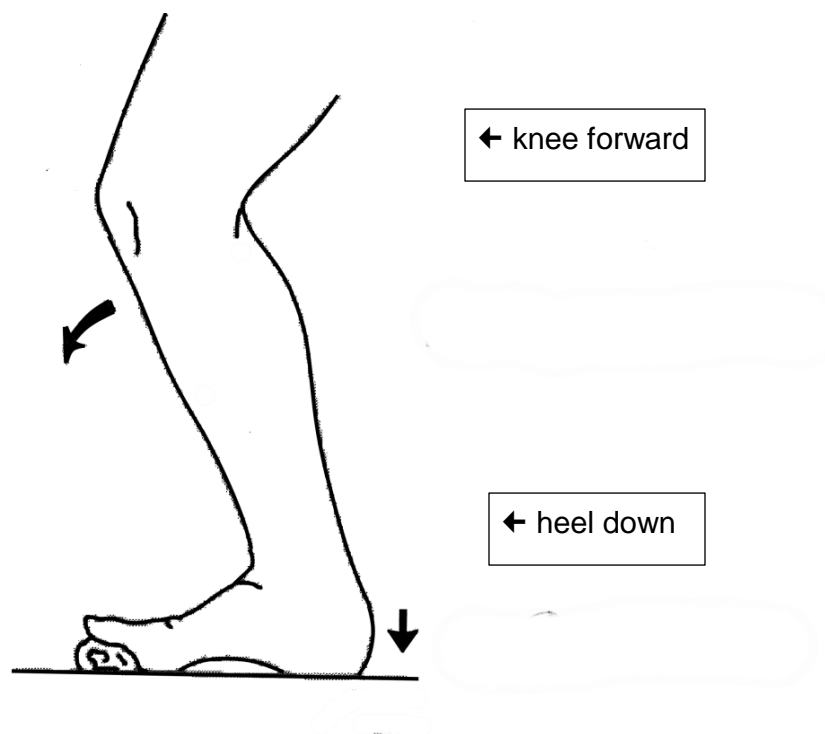


Fig. 2

Pre-stretch #3

- Step 1** Roll a towel tightly so that its diameter is 1 – 1.5 inches.
- Step 2** With your toes of the leg to be stretched approximately 1 – 1.5 feet away from a table or a wall, place the towel under your toes but allow the ball of your foot to rest on the ground (below diagram).
- Step 3** Place your opposite leg straight back for balance.
- Step 4** Keeping your heel on the ground, now force your knee towards the wall.
- Step 5** This position is difficult to maintain for long periods of time, but the longer you can hold it the better. Minimum time for each stretch should be 30 seconds. Total stretching time of 2-3 minutes should suffice.



In addition to stretching, other helpful modalities include:

1. Gel heel cup available at any pharmacy.
2. Shoe with a slight heel (1 to 1.5 inch lift).
3. Massage on the bottom of the foot with a cold tin can.