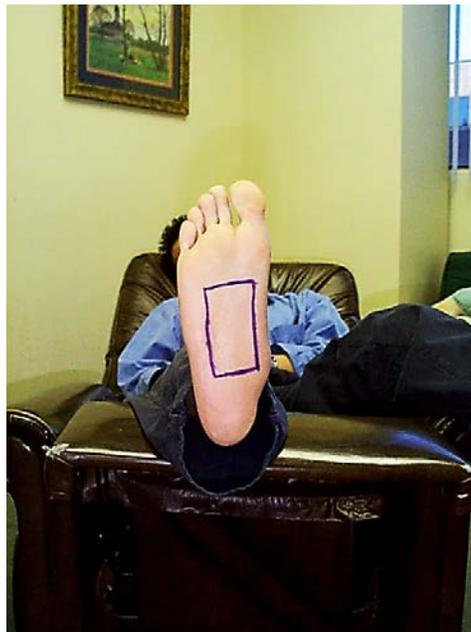


## PLANTAR FASCIITIS SYNDROME

The *Plantar Fasciitis Syndrome* is simply defined as inflammation of the plantar tissues of the foot. Although it often seems to accompany or result from the *heel spur*, *Morten's neuroma*, or *metatarsalgia*, it may appear as a "stand alone" syndrome. In the "stand alone" syndrome, DSR survey demonstrates an inflamed zone over the planter surface of the foot, from the proximal base of the distal metatarsal heads, to just distal to the medial and lateral processes of the calcaneus, as illustrated below.

Most commonly, patients suffering from *Plantar Fasciitis Syndrome* are recreational runners, though it may also occur from jumping (as performed in basketball). Symptomatically, the patient will complain of pain on the bottom of the feet when walking (or running), especially when beginning to walk in the morning after sleep. Patients will often complain that when arising, after sleep, the bottom of the feet feel "like walking on pillows" from the swelling that has accumulated over night. During initial evaluation, moderate swelling is often present on the bottom of the feet. In extreme, chronic cases (sometimes years old), the plantar surface of the foot or feet will appear to be atrophied from the loss of cushioning tissues, apparently consumed by prolonged exposure of inflammatory chemicals.



**The high skin resistance pattern commonly associated with the Plantar Fasciitis Syndrome**

## Treatment

Treat the *Plantar Fasciitis Syndrome* by eliminating any inflammation and adhesions that may be present in the inflamed zone, as well as increasing capillary circulation and desensitizing the sensitized inflamed tissues.

### Application:

- Preset an electrical stimulation unit to deliver a medium frequency current, with a duty cycle of 10-seconds on and 10-seconds off, and an amplitude sufficient to produce near tetanic contraction of the muscles stimulated. Place a negative electrode over the inflamed zone area and a positive electrode over the long toe extensor muscles. Stimulate for 15 minutes
- Manipulate the soft tissues in and around the inflamed zone to eliminate any adhesions that may be present.
- Preset the ultrasound unit to deliver a 3 (or 3.3) MHz, pulsed waveform, at 1.5 W/cm<sup>2</sup>. Ultrasound the inflamed zone, utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for six minutes.
- Preset the electrical stimulation unit to deliver a visible rhythmic contraction at 7 Hz. Place a negative electrode over the plantar inflamed zone and a positive electrode over the gastrocnemius muscle. Stimulate for 20 minutes;
- Mechanically vibrate the plantar surface of the foot, for two minutes (preferably with a foot vibrator), to further increase capillary circulation and to desensitize the involved tissues.

*The following treatment forms have also been effective.*

### Variation:

- Preset the ultrasound unit a 3 (or 3.3) MHz pulsed waveform, at 1.8 W/cm<sup>2</sup>. Ultrasound the inflamed zone, utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for six minutes. This procedure is designed to soften the adhesions that may be present.
- Manipulate the tissues in and around the inflamed zone to eliminate any adhesions that may be present.
- Twenty minutes after the first ultrasound, preset the ultrasound unit to deliver a 1 MHz pulsed waveform, at 1.5 W/cm<sup>2</sup>. Ultrasound the inflamed zone, utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for six minutes. This is performed to “cool off” the manipulated zone by effectively halting the production of prostaglandins by the stressed tissues.
- Mechanically vibrate the plantar surface of the foot, for two minutes (preferably with a foot vibrator), to further increase capillary circulation and to desensitize the involved tissues.

### Variation:

- Preset the ultrasound unit a 3 (or 3.3) MHz pulsed waveform, at 1.8 W/cm<sup>2</sup>. Ultrasound the inflamed zone, utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for six minutes. This procedure is designed to soften the adhesions that may be present.
- Manipulate the tissues in and around the inflamed zone to eliminate any adhesions that may be present.

- Apply cold laser (with or without simultaneous electrical stimulation provided by the laser applicator) to the inflamed zone for approximately six minutes. This is performed to “cool off” the manipulated zone by effectively halting the production of prostaglandins (or facilitating enzyme destruction of **all** inflammatories being produced) by the stressed tissues.
- Mechanically vibrate the plantar surface of the foot, for two minutes (preferably with a foot vibrator), to further increase capillary circulation and to desensitize the involved tissues.

Successful treatment may take from six to 12 sessions for complete resolution of symptoms.

#### **Post Treatment Suggestions:**

Continued relief will depend on the patient avoiding further trauma to the bottom of the feet. Running should be avoided for at least two weeks after all the pain is gone, and then should only be performed on relatively soft surfaces (dirt, grass or sand, not cement or asphalt). Barefooted walking on hard surfaces (household floors) should be avoided; soft soled slippers or “floppies” should be worn in the house or around the pool.

In general, the patient should only walk on soft surfaces, or in shoes with soft insoles and soft soles, for the near and distant future.

Additionally, encourage the patient to acquire a mechanical foot vibrator or a hand-held vibrator and vibrate the bottom of the feet for two minutes, twice a day, for the duration of the treatment course.

Vibrating the bottom of the feet should be avoided for the two-hour period before going to bed, because of the possibility that it might interfere with deep sleep patterns. However, vibration upon rising seems to invigorate and make sensory awareness more acute (i.e., to help one to wake up).

#### **Trigger Points**

The following trigger point formations may, singly or in combination, imitate or contribute to the pain accompanying the *Plantar Fasciitis Syndrome*: Gastrocnemius and Abductor hallucis.