

**Cyclo-ssage Pro-Personal Therapy System. [PPTS]
Review article on the treatment of Plantar Fasciitis
and the role of Cyclossage Pro Personal Therapy System.
By Dr. P. Heaton-Ph.D.
Consultant Orthopaedic Surgeon.**

Plantar Fasciitis

Plantar Fasciitis is a debilitating condition affecting as many as 4-6 million people annually worldwide. The sharp mid foot and heel pain described by plantar fasciitis patients is non radiating and thus focal in nature. Most patients experience the classic discomfort of an unprovoked heel and foot pain, while a minority of patients present with bilateral foot pain. Some patients describe a pain that is worse before the very first step in the morning, while others experience a similar pain following prolonged rest during the day. Aggravating factors include walking barefoot, trauma, associated calf and ankle pain. Relieving factors such as the use of NSAIDs, rest and focal pressure massage have been reported to be short term only.

Failure to seek treatment and prolonged inadequate treatment are notably the two commonest reasons for progression of acute plantar fasciitis to the chronic state of the disease. Such patients rapidly develop lower limb mal-alignment syndromes with flat foot, osteoarthritis of the knee, hip and lumbar spine a recognized sequelae.

The population affection demographics is uniquely bimodal, in that thirty percent of the patients presenting to our clinic at Barley Cliff sports with plantar fasciitis are competitive athletes in their mid twenties. The majority of patients presenting with the condition are in the age range 40-60 years. Obesity is a main cofactors in the later group.

It is of note that diagnosis has often been missed in 85% of patients, and worryingly, there are no evidenced based cascade of treatment despite the literature infested " expert" opinions, based on one series case reports.

It is apparent that a clear understanding of the anatomy and viscoelastic property characterisation of the plantar fascia is essential. Functionally, the foot transfers the body weight to the ground surface and resists the ground reaction forces. Therefore, the structures that constitute the foot must be inherently stronger than any traversing forces in order for the integrity of the composing structures to be un-compromised.

Multiple research studies have shown that in humans, with aging, biological tissues increase in strength up until the mid thirties. Beyond that age zone, progressive weakness of all biological tissues is the norm. The processes are thought to be multifactorial with hormonal and vascular relative deficiency predominance.

The Plantar Fascia is a fibroaponeurotic sheet that connects the hind foot to the forefoot through its insertion on the calcaneal bone and the slips on the phalanges of each toe. It is functionally important for the windlass mechanism that is characterized by incremental plantar (sole of the foot) tensions with dorsiflexion (toes pointing upwards to the ceiling when standing upright) of the toes, foot and ankle. This ensures tiptoe running and akin activities are accomplished with optimum body weight load transfer and appropriate protection of the engaged biological tissues from the generated ground reaction forces.

It therefore follows that with aging and weakness of such a vital structure the foot will begin to show signs of failure, pain.

PPTS restores strength and reduces Plantar Fasciitis

Strengthening the Plantar Fascia through regular use of the PPTS is a revolution in combating the debilitating condition. Once the acute episode is overcome with the use of the PPTS, regular Plantar Fascia exercises may be commenced. Continued regular use of the PPTS will reduce the accumulation of free radicals that propagate the chronic condition and therefore reduce recurrence of the condition.

Cycloid vibration studies have confirmed the ability of the PPTS to deliver growth factors to injury sites. Platelet derived growth factor is the most consistent in its healing properties for plantar fasciitis patients. PPTS affords an endogenous increase in the levels of healing factors. This is preferred to exogenous injection sources, which can be unpredictable, and are operator dependent at delivery time.

There are specially designed foot platforms on all models of the PPTS that afford pulsed waves to be delivered directly over the insertion points of the plantar fascia at the hind and forefoot.

In an ongoing study all patients in a regular therapy with the PPTS and muscle strengthening exercises had no recurrence of Plantar Fasciitis.