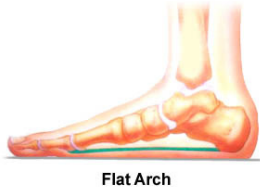


# Physiotherapy Newsletter

## July – Flat Feet; Orthotics Or Not?



People are born with flat feet (pes planus) or it may be caused by injury, muscle weakness, loose ligaments, dropping of the talus (bone in the foot), paralysis, or a side-to-side tilting of the foot with walking. Approximately 20-30 % of the population have this condition where the arches of the foot “flatten” causing a larger surface area of the bottom of the foot to make contact with the ground when the person is walking or standing.

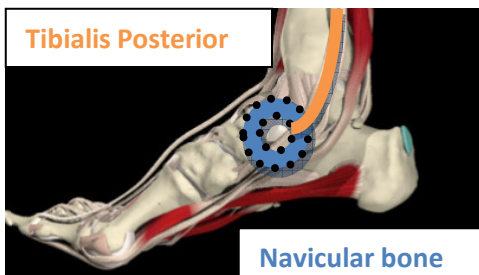


When the foot is “flat” it is weak and vulnerable, exposed to overstrain and injury. When the arch becomes flat, or collapses, often there are associated changes in the surrounding muscles, bones and ligaments. This in turn puts additional strain on the small ligaments that make up the arch of the foot to take on the weight of the body while maintaining a normal foot position. Problems often develop over time from the accumulation of strain from long periods of standing or walking. Therefore, it is important to wear supportive shoes and allow sufficient breaks for the feet to rest so that you do not over-stress the ligaments.

Foot position with excessive pronation



In a flat foot, the navicular (a bone in the foot) is lowered, which most often stretches the tibialis posterior muscle which can irritate the tendon. Tibialis posterior (TP) muscle is a stabilizer of the foot in standing and walking, and provides dynamic support along the arch and sole of the foot. In fact, TP muscle deficiency decreases the longitudinal arch (the arch on the inside of your foot).



Dysfunction of the TP muscle is one of the primary causes of acquired flat foot in adults.



Research found when barefoot, persons with flat feet used other muscles to help move their foot instead of utilizing the TP muscle in comparison to a person with a normal arch. However, when given custom orthotics the same people found they were able to use their TP muscle more like the people with normal arches. In a sense, the orthotics were assisting the participants to use their TP muscles. (1)

### Treatment

There has been much controversy over the need to provide treatment for flat feet. The most common treatment is orthotics or shoe inserts. Orthotics can come in 3 types:

- 1) Rigid - to control function; expensive, prescribed by podiatrist or orthotists
- 2) Soft - to help absorb shock; available at your local pharmacy
- 3) Semi-rigid - to provide dynamic balance of the foot; available at your local pharmacy

Although it has not been proven, it is possible that wearing orthotics for long periods of time can result in weakening of the foot muscles since the muscles of the foot do not have to be actively working to hold the sole of the foot up when an orthotic is worn. This may result in further problems if a person were to walk without their orthotics for a day i.e. wearing slippers or flip flops.

Caution: If you have flat feet and are not experiencing pain orthotics are not necessary.



### Can Physiotherapy help?

As physiotherapists we can treat common problems associated with flat feet, such as tibialis posterior tendon pain, knee pain, and plantar fasciitis using a series of stretches, strengthening exercises, proprioceptive taping, and pain relieving modalities.

If you have any further questions about flat feet, or associated foot or knee pain please feel free to contact a Physiotherapist at Limestone Health Consultants.

(1) Kulig, K., Burnfield, J., Reishcl, S., Requejo, S., Blanco, C., & Thordarson, D. (2005). Effect of foot orthoses on tibialis posterior activation in persons with pes planus. *Medicine & Science in Sports & Exercise*, 37(1), 24.