

Flatfoot

Foot arch is formed by numerous bones and ligaments in the foot. A flat foot occurs when the normal arch is diminished or lost.



Normal arch



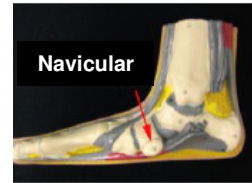
Flatted arch

Causes of flat foot

- Inheritance
- Weakness of muscle that hold the foot arch
- Obese (Over stretch the ligament that hold the foot arch)
- Musculoskeletal abnormality (Muscle weakness, knocked knee, internal rotation of hip joint)
- Trauma (Rupture of tendon that hold the foot arch, this happen in adult patients usually)

Features of flat foot

- Collapse of the medial foot arch, the foot looks " flat"
- Prominent navicular bone
- The heel angulated outward



Symptom of flat foot

- The foot experience fatigue and pain easily. Stiffness can occur over foot, calf, and lower back.
- Walking with both heel angulated outward
- Rapid wearing out of shoes especially the inner side.

Treatment of flat feet

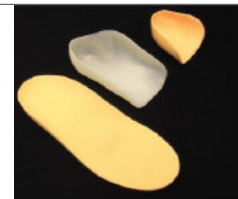
1. Observational period

Flat feet is normal and common in infants around 2 to 3 years old, partly due to "baby fat" and flexible joints in the foot. Flat arches in children usually become proper arches while the child start to walk.

2. Orthosis –

Orthosis is used to support foot arch and redistribute loading in the foot, it also improve gait pattern by biomechanical principle. Orthosis only function fully with proper footwear.

Orthotic insole
Heel cup



3. Exercise

To strength the weak tendon and muscle over the foot by following exercise:

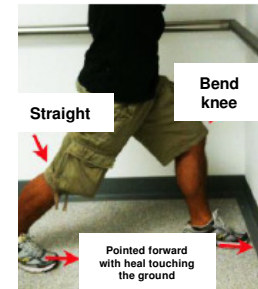
- Standing exercises, heel raises and lift up on the balls of your feet. Stand on the outer edges of the feet during the exercise



- Picking up an object with your toes first then do active foot rolling, draw an imaginary O with your big toe -- clockwise for the right foot, counter-clockwise for the left



- Heel cord stretching exercise: Put on your shoes with insole first, stand two steps from a wall and prop yourself forward. Lean your forehead against your hands. Bend one leg at the knee and step back with the other, stretching it out behind you. You should feel the pull in your heel and calf. Switch feet and repeat the exercise on the



When using orthoses, you must

- Wear proper shoes

- Size of the foot will increase after activities, you should purchase shoes during afternoon and evening
- Toe box of the shoes should be width and depth enough to provide moving spaces for the toes. Pointed shoes is not recommended

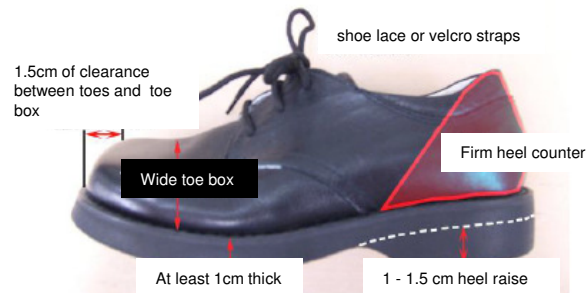
- The interior design of shoes should be spacious and allow application of orthosis
- Fitness of shoes should be adjustable by using shoe laces or velcro straps

•Proper size shoes should be selected, around 1.5cm of clearance should be available between toes and toe box of the shoes. Fitness of shoes should be checked regularly to prevent excessive pressure.



•Should allow 1 - 1.5 cm heel raise, the minimum sole thickness in the forefoot region should be more than 1 cm

•Heel should be well protected, stable and a firm heel counter is necessary to protect the ankle; wider sole to provide stability and support



•Footwear should be changed when it wears out or does not fit. Wearing shoes with a damaged sole can compromise walking pattern

- Sole and heel cup should be firm enough to allow foot orthosis function properly

- **Time for using orthosis**

- Muscle fatigue and soreness could happen because muscles that usually not working were triggered.
- Duration for using orthosis should increase progressively
- Wear socks with orthosis in footwear to prevent rubbing over naked skin .

- **Maintenance of orthosis**

Use soap water or clear water to remove dirt on orthosis. Don't soak in water for cleansing. Lay flat to dry. Don't use hot water to clean the orthosis

- **Renovation of orthosis**

- Please contact your doctor or orthotist immediately if you found redness or blister after using the orthosis.
- Please comply with the instruction given by your orthotist and have regular follow up

Understand Flatfoot



For enquiry, please contact Prosthetic and Orthotic department of different hospitals