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## Acquired Flat foot

This is the progressive loss of the arch, with valgus mal-aligned heel and abduction of the forefoot from dysfunction of the Tibialis posterior tendon. Often progresses through 3 phases as described by Johnson & Strom – Initially tendonitis, followed by tendon tears with a flat foot and finally arthritis of the hindfoot. Usually affects middle-aged, over weight women.



### What to ask in the History

- Duration – pain and deformity
- Pain- Medial ankles, but may develop lateral pain from sub-fibular impingement with severe flat foot.
- Swelling – medial
- Treatment – orthotics (arch supports), analgesia

### What to look for on Examination

- Raised BMI
- Lower limb alignment
- Apparent pronation of the foot – actually supinated in relation to the hindfoot!
- Arch- best viewed from the back
- Hindfoot alignment – valgus will be increased compared with contralateral side.
- Too many toes sign- foot abduction revealing more toes laterally when viewed from the back.
- Medial swelling
- Ability to double and single-leg heel raise- lost as tendon fails, suggests stage II of disease
- Windlass effect – this is the varus swing of the heel observed from the back and indicates a functioning Tib post tendon.
- Pain to palpation - usually medial from tip of medial malleolus to where the Tib post tendon inserts in Navicular tuberosity
- Adduction power – weak and painful with Tib post dysfunction
- Mobility of the subtalar, Talonavicular and Calcaneocuboid joints – stiffness suggests development of arthritis and Stage III disease

### What investigations to order

- Standing ankle and foot Xrays- rule out hindfoot arthritis
- Ultrasound- integrity of Tib post tendon

### How to treat

- Weight loss
- Orthotics – medial arch supports
- Cortisone injection – into tendon sheath, only Stage I with no tears in the tendon
- NSAIDs

### When to refer

- Poor response to non-operative measures
- Tendon tear on Ultrasound
- Development of arthritis

### What the surgeon may do

- Tendon debridement – for Stage I tendonitis only
- Tibialis posterior reconstruction – involves FDL transfer, reefing of the Spring ligaments and medial calcaneal sliding osteotomy, for Stage II
- Triple arthrodesis – fusing STJ/TNJ/CCJ, for Stage III when arthritis develops