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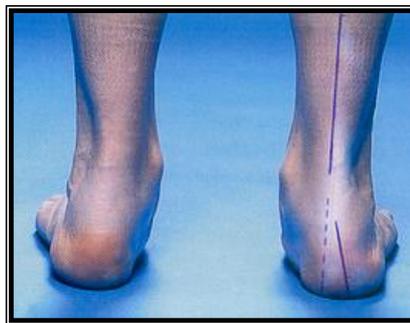
Flat Feet and High Arches

The medical terminology for flat feet is “pes planus”. It refers to a foot type that has lost its arch and as it suggests appears rather flat compared to the average foot.

Some of these feet are simply shaped that way with a particular bone structure and look similar both weight bearing and non weight bearing. Some feet appear relatively normal off the ground but when standing they flatten. This is due to either the foot being flexible or the foot bone structure having a mal alignment causing the flattening. This flattening motion is termed PRONATION.

The influence of the leg can also cause pronation.

Any person involved in athletic activity or spending a large amount of time on there feet may be recurrently suffering from or predisposing themselves to injury and symptoms due to pronation.



Flat Foot (Pes Planus)



High Arched (Pes Cavus)

The opposite of the flat foot is the high arched foot type. This is termed “pes cavus”. This foot type also can be classed as flexible or rigid. A flexible pes cavus is one that when standing the high arch appearance of the foot reduces somewhat but the rigid type tends to maintain its shape. Pes cavus also predisposes to problems of the foot and leg. The arched or inward tilting/motion of the heel with stance is termed SUPINATION.

PRONATION and **SUPINATION**, both of these are normal natural movements that occur during standing, walking and running, however **excessive amounts, excessive duration or abnormal timing** during stance in either direction results in injury and pain.

PRONATION is the inward rolling or flattening out of the foot that helps to absorb shock as the foot hits the ground during the initial phase of gait (walking).

SUPINATION is the outward rolling or arching of the foot that helps to push or propel a person forward as the foot leaves the ground.

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The amount of pronation and supination that occurs during gait is variable and dependent upon a number of factors. Some of these include:

- Skeletal lower leg and foot alignment
- Footwear
- Angle and nature of surface
- Speed of gait
- Muscle, tendon or ligament tightness and weakness
- Neuro-muscular, arthritis or other disease states

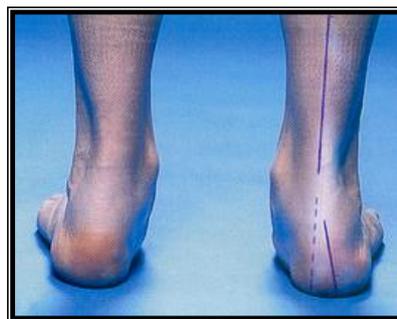
Common conditions include heel pain, shin splints, stress fractures, achilles pain, knee pain, ankle pain and in some cases lower back pain, to name a few. The foot type can also be the cause for bunions, clawed toes and nerve entrapment problems. Injuries and problems of this nature that are left poorly treated are often ongoing and very frustrating to sufferer.

Early detection is essential in reducing the frequency and severity of injury or problems.

At one time flat feet/fallen arches were considered a “deformity” that prevented entry into the armed forces due to the correlation between this foot type and foot/leg problems.

Parents are often concerned with children and this foot type, often being a normal variant or family trait. There may be no associated pain. It will not always cause problems in adulthood but the likelihood is higher depending on the type of flat or high arched foot type. The foot should be assessed to determine this.

Pain related to poor foot position should be addressed. This requires special insoles or orthotics to assist in maintaining the foot in a more neutral or normal position. The appropriate insole or orthotic device for either a pes planus or pes cavus foot type is prescribed following assessment of the foot and lower limb mechanics by the podiatrist. See “Orthotics”.



Pronated Position



Correction of Pronation with Orthotics