

Flat feet

What is the normal foot arch?



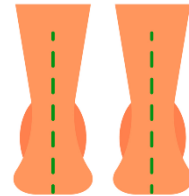
Clear medial foot arch seen



Foot-print of the medial foot arch is not colored



Midline of the calf and midline of the back heel are on the same line



What is the function of foot arch?

Foot arch supports our body weight during standing and walking. The three elements : tendons, muscles and bones, act together to reduce shock and maintain balance.

What is flat feet?

Flat feet are the collapse of medial arch of the feet, with the entire sole of foot coming into complete or near-complete contact with ground. Flat feet can be either physiological or pathological.

- Physiological flat feet are very common among children. The elastic arch disappears during weight-bearing such as standing and walking. The foot arch reappears when sitting or lying down. As the foot arch develops, the condition usually improves significantly after the age of ten.

- Pathological flat feet are fixed. The arch of the foot does not reappear when sitting or lying down.



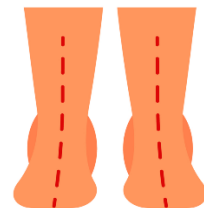
Medial foot arch disappears



Foot-print of the medial foot arch is colored



Midline of the calf and midline of the back heel are not on the same line



What are the causes of flat feet?

The causes of flat feet can be divided into congenital and acquired factors.

- Congenital factors :
 - Congenital ligament laxity : The ligaments are lax and fail to effectively stabilize the joint, therefore the foot arch collapses in weight bearing.
 - Genetic factors : If there are cases of flat feet in the family, the chance of having flat feet will increase.



- Acquired factors :

- Accidental trauma : Ligament injury leads to acquired relaxation of the ligament, and hence unable to effectively activate the small muscle groups over the sole of the foot, resulting in collapse of foot arch.
- Overweight : Excessive weight bearing may lead to chronic strain of the ligaments and tendons, resulting in flat feet

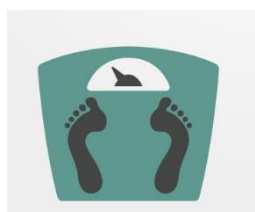


What will flat feet affect?

Most flat feet in children are physiological. It appears flat mainly for two reasons: (1) abundant subcutaneous fat, and (2) lax ligaments. As the child gets older, the longitudinal arch develops spontaneously as the fat pad shrinks and the ligaments get taut. Most children with physiological flat feet do not have symptoms and have no functional limitation.

In general, flat feet do not require any treatment. Symptoms are only common in pathological flat feet such as pain, fatigue over feet, wearing out the inner side of the shoes more quickly, and prone to have corns over feet.

Usually pathological flat feet, and rarely symptomatic physiological flat feet, require the consultation of Orthopaedic surgeon/ Physiotherapist/ Prosthetic-Orthotist for functional training, weight control or prescription of insole.



How to choose the right shoes?

Good shoes should be properly fitted, flexible and made of materials that breath. Other features include proper arch support, non-slippery and shock-absorbing. Symptoms associated with vigorous physical activities usually respond well to the use of right shoes.



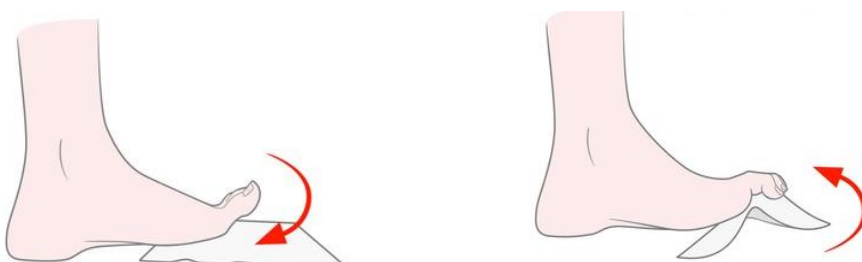
What are the benefits of exercises for flat feet?

Suitable exercises can effectively strengthen the muscles of feet and activate the muscles of the soles, thereby assisting in the support of the arch of foot.

Weight control can reduce the load on the feet, and avoid chronic strain on ligaments and tendons, caused by excessive weight bearing.

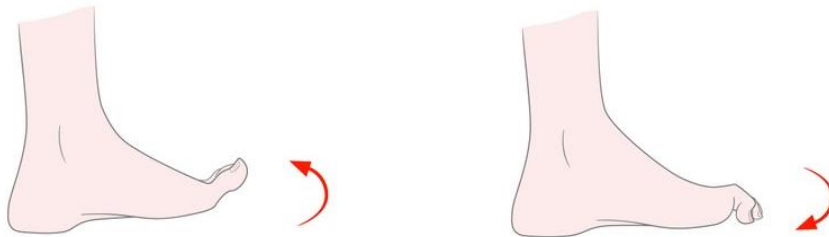
Exercises recommendations

【 Pick up towel with toes 】



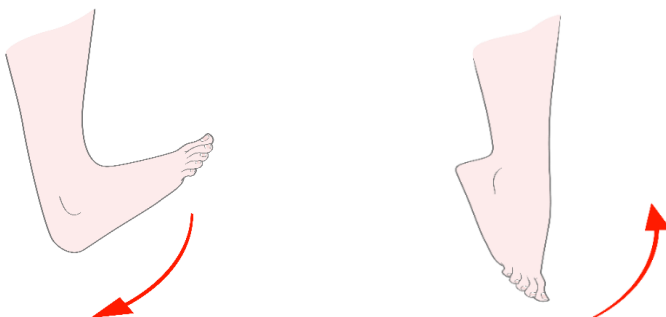
Sit on chair, put a small towel on ground, ask the child to pick it up with toes. Do 10 repetitions on each side, 2 times per day.

【 Say Hello with toes 】



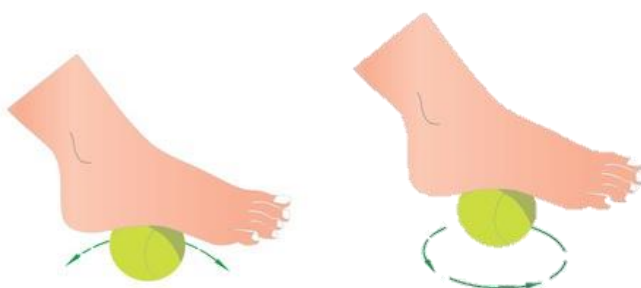
Sit on chair, lift the toes up and then bend them down. Do 10 repetitions on each side, 2 times per day.

【 Mobilizing exercises 】



Sit on chair, lift the whole foot up and then bend it down. Do 10 repetitions on each side, 2 times per day.

【 Exercise with a ball 】



Sit on chair, put a small ball under the foot, move it forth and back or in a circular motion. Do 10 repetitions on each side, 2 times per day.

【 Tip-toe standing 】



Stand with shoulder width, hold on fixed furniture with hands, tip-toe stand and hold for 5 seconds, slowly lower down the heel and repeat the exercise. Do 10 repetitions, 2 times per day.

If you have any enquires about the above information, please consult your physiotherapist.



Child Assessment Service, Department of Health
Hong Kong Special Administrative Region

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