

# Flat Feet

During childhood, usually between the ages of 3 and 10, we develop a space on the inner side of our feet where the bottom of the foot is off the ground. These are referred to as the "arches" of our foot. The height of this arch varies. People with a low arch or who have no arch are classified as having flat feet. Sometimes this is referred to as having "fallen arches" though this term is misleading as most with "fallen arches" actually have a low arch.

## Causes

Flat feet can run in families, and both feet are usually affected. Occasionally, flat feet are due to a problem in the way the foot forms in the womb. For example, a joint may be misformed or two or more bones may fuse together. In these situations, the feet are stiff and flat and the problem is usually noticeable during childhood.

Another form of the problem is when the foot has a tendency to roll inwards too much while standing or walking. This can be due to weak ligaments in the heel joint or at the base of the big toe which can cause excessive rolling in of the foot. Muscle imbalances and associated altered alignment further up the kinetic chain, such as in the knee, hip and lower back can also contribute to this flat foot presentation. "Pronation" of the foot is another term for rolling of the foot thus an "over-pronated foot" is a term for excessive rolling of the feet. Regular rolling in of the middle of the foot causes the heel and the front of the foot to point outwards more than usual. A common method of telling if you have developed over-pronated feet is to stand up on your tippy-toes, or by pushing your big toe up as far as it can go. If an arch appears, the foot is sufficiently flexible and there are no issues.

While over-pronated feet usually develop in childhood, there are times when flat feet develop when the person gets older. Flat feet may develop due to a ruptured tendon (a ruptured tibialis posterior tendon which is rare), tear of the spring ligament (also rare), arthritis, nerve damage due to diabetes, or injury which leads to stiffness and distortion of the joints of the feet. Conditions of the nervous system or muscles including cerebral palsy, spina bifida or muscular dystrophy can cause flat feet as they can cause muscle weakness or lack of movement in the muscles. These conditions lead to the feet becoming stiff which get worse as the condition develops.

Other contributing factors can include shoes which limit toe movement such as high heels (walking barefoot may have a protective effect). Tight achilles tendon or calf muscles can also make a person more prone to flat feet. Obesity also can contribute to flat feet.

## Are flat feet hereditary?

It is reckoned that about 20% of the population suffer from flat feet but only a small proportion of these are born with flat feet. Some cases of flat feet are hereditary. Flat feet that run in families are due to feet being shaped in an abnormal way or over-pronation feet in those with lax joints.

## When is treatment needed?

Most flat feet do not cause any problem so no treatment is needed. Reasons to look for treatment include:

- Pain (not eased by any type of foot wear). Flat feet do not usually cause pain, but can put strain on muscles and ligaments (connect two bones together at a joint). This can use leg pain when walking. Pain from flat feet can occur in a number of areas including inside the ankle, at arch of the foot, the outer-side of the foot, calf, knee, hip or back.
  - Wearing out shoes quickly
  - Feet appear to be getting flatter
  - Feet tire easily
  - Swelling on the inside bottom of feet
  - Feet are stiff
  - Lack of feeling in the feet or weakness

There is some evidence that flat feet can contribute to osteoarthritis of the feet and that flat feet can reduce the shock absorbing qualities of the feet leading to back problems and back pain.

## Treatment

No treatment is required if flat feet do not cause problems. Well-fitted shoes, especially extra-broad fitting types of shoes can help. For people suffering from over-pronated feet, a special insole, which prevents feet rolling over too much, can ease the problems. These specialised insoles can be advised on by a chiropodist or a physiotherapist who are specialists in assessing for and measuring the specialist insoles. These insoles are also called orthotics and are available in pharmacies. If pain occurs, rest, ice and over-the-counter non-steroidal anti-inflammatories, or NSAIDS (eg. ibuprofen) can give relief; however painkillers should only be a temporary

solution; the cause of the problem should be identified and corrected.

Children with an abnormal foot that has not developed properly may require an operation to straighten the foot or to separate bones that have fused. Luckily operations are rarely needed as these are rare causes of flat feet in children. Most children with flat feet have a mobile form of flat feet which generally does not need treatment, or if treatment is needed due to pain or excessive wear of shoes, an insole is often sufficient to rectify the problem.

Flat feet that develop due to a disorder of the nervous system may require specialised insoles, shoes or braces to support feet or legs. In some of these cases, an operation will be required to straighten the feet. Flat feet due to ruptured tendons or arthritis may need to be treated with pain-killers and an insole initially. Again, an operation may be required to straighten the foot in these cases.

Other actions that can help include wearing footwear with lower heels and wide toes, losing weight if appropriate and doing appropriate exercises that strengthen muscles in the feet which can include walking barefoot, exercises called toe curls (flexing the toes) and heel raises (standing on tiptoes).

## **Heel cord stretching exercises**

These stretch and lengthen the achilles tendon and posterior calf muscles. Your physiotherapist is best for advising on appropriate exercises.

### **How to do:**

Stand facing a wall with your hands on the wall at about eye level. Put the leg needing stretching about a step behind the other leg. Keeping the back heel on the floor, bend the front knee until you can feel a stretch in the back leg. Hold the stretch for 15 to 30 seconds. Repeat 2 to 4 times. You should aim to do this exercise 3 to 4 times a day.

## **Children**

As noted earlier, most cases of flat feet in children do not need treatment. In the past, it was thought that flat feet in children required treatment with specialised shoes, insoles or callipers to prevent problems as they grew into an adult. This is now recognised as being incorrect and these treatments are ineffective. It is now recognised that children treated in this way will end up the same as similar children who are not treated. Additionally, children often refuse to wear the shoes, insoles or callipers. No evidence shows that treating flat feet in childhood prevent problems in later life and most of these children do not develop problems when they reach adulthood even if left untreated. The only reason to seek treatment for a child's feet would be if they cause pain or their shoes wear out excessively. In these cases, a specialised insole measured professionally by a chiropodist or physiotherapist will help.

## **PHYSIOTHERAPY FOR FLAT FEET**

Over-pronation of the foot ('flat feet') can alter your walking pattern, running pattern and can also be responsible for pain throughout the body. Clear and accurate assessment of the mechanics of the lower limb is essential to identify the effects that subtle faults in the foot can cause. Your physiotherapist can perform a detailed investigation to assess foot and lower limb function. Specific patient related treatment can then be implemented to accurately treat and manage health and exercise issues pertaining to this condition.

In many cases an exercise program, prescribed by your chartered physiotherapist, to address identified muscle weaknesses and imbalances is sufficient to alleviate pain and restore normal function. Often a temporary insole or orthotic, available in pharmacies or from your chartered physiotherapist may be the appropriate treatment, in conjunction with a tailored exercise program, to alleviate symptoms. This is generally the case for sports people or people with minimal mal-alignments. A more permanent solution is a customized orthotic, whereby an orthotic is specifically designed for your foot. Measurements for this type of insole are taken, by your chartered physiotherapist, from a plaster cast of your foot or by stepping into a foam box. These are then sent on to a lab where the custom insole will be created.

## **New physiotherapy service in Whelehans**

Whelehans are delighted to announce our new Physiotherapy Service. With sessions running in our private consultation room, the clinic will be hosted by Sinead Brogan, our fully qualified Chartered Physiotherapist and certified STOTT pilates instructor. Sinead graduated from University College Dublin in 2006 with an Honours Physiotherapy degree and began building her experience in the public sector in Midland Regional Hospital Mullingar. Since then she has gained extensive experience working in private practices in New Zealand, Australia and Ireland, treating a wide variety of musculoskeletal issues including acute and chronic sports injuries, repetitive strain and postural problems, spinal dysfunctions and pregnancy related issues.

**By Eamonn Brady (MPSI)**

Sinead is very interested in sports injuries, having worked with a number of Gaelic and rugby teams providing pitch-side cover. As a certified Personal Trainer, she has a keen interest in sports participation herself, enjoying running in particular and has competed in many running events, from 5km races to marathons. Sinead also has a special interest in ergonomics in the home and work place and is dedicated to optimising health in these environments. Sinead is a Stott Pilates instructor and teaches pre and post partum pregnancy, beginners and intermediate pilates classes. She is also a Trigger Point Dry Needling practitioner and uses this technique with great results. Currently, Sinead is studying for her Masters in Neuromuscular Physiotherapy in UCD

**Physiotherapy services are available at Whelehans Pharmacy, 38 Pearse St, Mullingar (Opposite the Greville Arms Hotel). Book a physiotherapy appointment at 0831722171**

**Disclaimer: Information given is general; please ensure you consult with your healthcare professional before making any changes recommended**

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