

Trauma and Orthopaedics

Flat foot

This leaflet gives you information on the problems you may have with your foot or ankle. It has sections on:

- adolescent flat foot
- adult normal flat foot
- acquired flat foot
- what you should know about flat foot
- your treatment options

This leaflet is not a substitute for professional healthcare advice. It should be used along with verbal information given by your doctor or member of the foot and ankle team.

What are the arches of the foot and what are they for?

Your foot has 3 arches.

- 2 arches that run from the heel to the toes on each side of the foot (longitudinal)
- 1 arch which runs across the foot (transverse)

These arches are formed and supported by the bones, supporting ligaments and muscle tendons in the foot.

Their shape allows them to absorb the shock and load while walking, running and jumping.



What is flat foot?

Flat foot is used to describe the position of the foot when the arch of the foot is low and the sole of the foot comes into contact with the ground.

It is often also called other names such as “collapsed” or “fallen” arches. The medical term is “pes planus”.

Adolescent flat foot

Flat foot in children is normal. As children move into adolescence, the arches often develop further. It is nothing to worry about if they do not change and flat foot remains.

The size of people’s foot arches vary and most of the time this does not cause problems. Almost 1 in 4 people have flat foot in the UK.

Adult flat foot

Many adults have a flat foot posture that continues from childhood. In most cases, this does not cause any symptoms at all and is classed as normal. If symptoms do present, they are usually managed without surgery.

Adult acquired flat foot

Adult acquired flat foot is where people with a normal arch develop sudden or progressive flattening of the arch.

Flat foot viewed from behind



Flat foot viewed from the inside



Causes

Flat foot can have several causes.

Tibialis posterior tendon dysfunction/tendinopathy

The tibialis posterior is a muscle in the lower leg that attaches from the back of the calf into the inside of the ankle and foot.

The main function of its tendon is to hold up the arch and support the foot when weight bearing. If the tendon becomes inflamed, worn, or torn, your arch will gradually collapse.

Degeneration and weakness of the tibialis posterior tendon is the most common cause of acquired flat foot.

Women and people over 40 are more likely to develop problems with the tibialis posterior tendon. Other risk factors include:

- obesity
- diabetes
- high blood pressure

Arthritis

Arthritis such as osteoarthritis or rheumatoid (inflammatory) arthritis can cause a painful flat foot. This is secondary to damage and wear and tear of the cartilage in your joints.

Rheumatoid arthritis can also cause damage to the ligaments that support the arch of your foot.

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Arthritis can affect the back of your foot and/or the middle of your foot, resulting in a fallen arch.

Many people who have flat foot feel tightness in the calf muscles and Achilles tendon. This pulls the heel outwards and causes the foot to roll inwards. This worsens the flat foot position.

What are the common symptoms?

- pain behind your ankle bone on the inside of the ankle
- pain on outside of the ankle
- pain on inside of foot/under arch
- unable to walk normally/unable to push onto tip toes
- change in shape of foot/difficulty to find footwear that will fit

What are the treatment options?

Most people can be successfully treated with non-surgical treatment.

Non-surgical treatment

Physiotherapy

This will involve stretches for the calf and Achilles tendon and strengthening exercises for the tibialis posterior muscle and other muscles of the foot and ankle.

You may also be given exercises to strengthen your upper leg/hips and core. This will help to improve your posture and reduce the pressure on the ankle.

Activity modification

Reduce any activities that cause you pain. Avoid prolonged walking and standing.

Weight loss

Reviewing and improving your diet can make a big difference. If you can exercise, low impact activities such as cycling and swimming are the best.

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Orthotics/insoles

You may be provided with “off the shelf” or custom-made insoles to help support and correct your foot arches. This may help to reduce pain. In severe cases, custom made footwear may be provided.

Immobilization

In some more painful cases, it may be needed to use a support boot for a short period. This is to protect the foot and ankle.

Medications

You can take painkillers such as paracetamol or ibuprofen to help relieve pain and swelling.

Ice pack

Using an ice pack regularly can help to reduce pain and swelling.

Surgical or invasive treatments

Surgery or invasive treatments may be done in very severe cases or those that do not respond well to non-invasive/non-surgical treatments.

Treatments may be in the form of steroid injections to the tendon sheath or to painful joints. The aim is to reduce pain in the first instance.

Surgery may involve reconstructing the damaged tendon and/or bone. It may also involve joint surgery to try and correct the posture of the foot to a near normal position.

These can be extensive procedures with associated risks. This will be discussed with you in detail if surgery is being considered as an option.

Example exercises are on the following pages.

Patient Information

Example exercises

All exercises should be carried out and progressed under the guidance of your physiotherapist.

The exercises shown below are examples. They may be altered or changed as you progress with rehabilitation.

Exercises for other muscles, such as the gluteal and core, may also be added.

Exercise 1



Lying on the affected side, while keeping the foot pointed down, slowly roll the foot in/up so it raises off the floor. Do not lift or rotate the whole leg.

Hold for 3 seconds and slowly lower back to the floor.

Aim to complete 3 to 4 sets of 20 repetitions before adding a weight to the foot as shown in the picture.

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Exercise 2



Sitting with your heels resting on a book and toes on the floor, “sweep” your foot inwards so your big toe swings in and up slightly, but your little toe stays on the floor.

Your toes should always stay lower than your ankle.

Repeat for 3 to 4 sets of 20 repetitions.

You can progress by adding a resistance band around the foot to increase the load.

Exercise 3



If Exercise 2 is too difficult, try pushing against a solid object in the tip toe position. This is to help you build up static strength before progressing to the next level.

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Exercise 4



Squeeze a ball between your heels and raise up onto tip toes. Hold for 2 seconds and then slowly lower back down to the ground. Make sure you do not let the ball slip from between your ankles.

Aim for 3 sets of 12 repetitions before your physiotherapist will progress this exercise.

Exercise 5



Sit down on a chair and cross the affected foot across the opposite thigh.

Wrap a band around the foot near the toes. Tension it around the foot on the floor.

In tip toe position, assist the foot up and in by lifting with the hands.

Tense ankle and keep foot in this position while you let go.

Slowly lower the foot down controlling it slowly against the pull of the band.

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Exercise 6



Place a book under the inside half of the foot or under the arch area of the back leg.

Leaning on a wall, slowly bend the front knee and lean towards the wall.

Keep the back knee straight and foot pointing forwards. Maintain upright position as best possible.

Feel a stretch in the back of the calf muscle. Hold for 5 seconds and then return.

Repeat 8 times.

Contact details

If you have any questions or concerns about flat foot, please contact the following:

Consultants' secretaries (Monday – Friday, 8am – 4:30pm)

- Mr Dhukaram – Jas Viridi 024 7696 5095
- Mrs Chapman – Amber Jolliffe/Sophie Carvell 024 7696 4965
- Mr Ali – Claire Merrall 02476 965073

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Patient Information

The Trust has access to interpreting and translation services. If you need this information in another language or format, please contact 024 7696 5095 and we will do our best to meet your needs.

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