



Flat feet are a postural deformity where the arch of the foot collapses and presses on the ground. If a child were to step in paint, their footprint would appear like the image on the right.



Classification

The majority of children have flat feet between the ages of 1-5, as most children then begin to develop a normal foot arch. Many children do not experience any symptoms from their flat feet. Sometimes, children who are involved in heavily competitive sports may experience pain and stiffness in their feet, which may suggest that they have flat feet. This usually does not impact their participation. Therefore, paediatric flat feet are classified as symptomatic and asymptomatic.



Causes of Flat Feet

Hereditary conditions (Ehlers-Danlos Syndrome, Marfan Syndrome), Tarsal coalition (fusing of bones in the feet), Achilles tendon injury, Medical conditions which affect the joints, nerves or connective tissues, Severe foot injuries, and Obesity (heavy weight bearing in children).



**Normal
foot**



**Flat
foot**



CHILDREN WITH FLAT FEET





Treating Flat Feet with Physiotherapy

There are many ways of correcting flat feet in children. Supportive footwear is important, especially when your child is very active. Insoles provide extra padding and more support to the feet, which can help to reduce pain. Proper running shoes with strong soles can provide extra support.

Orthotic devices can prevent flat feet from worsening over time. They maintain the shape of the foot during activity but will need to be replaced as the child grows.

Stretching and exercise are very effective in treating flat feet. If a child has tight calf muscles, then this may lead to flat feet. Passively and actively stretching these muscles can help to alleviate stiffness and pain, and can be managed by the child and their parents easily. Exercises for the feet would be prescribed by the child's physiotherapist. Effective exercises may also improve balance, provide sensory feedback and correct the postural deformity in flat feet.



Symptoms

Pain, cramping, and tenderness in the lower limbs, ankles and feet. Injuries to these areas are common. Issues with balance may occur.

Overpronation or supination in walking (foot turning inwards or outwards during walking), or changes in their walking or standing pattern.

Soles of shoes wearing out quickly or with uneven wear.

Reduced energy and tiredness in physical activity.





FURTHER TREATMENT

More extensive ankle/foot orthoses can be developed, in the form of splints or braces. A doctor and podiatrist should review the child.

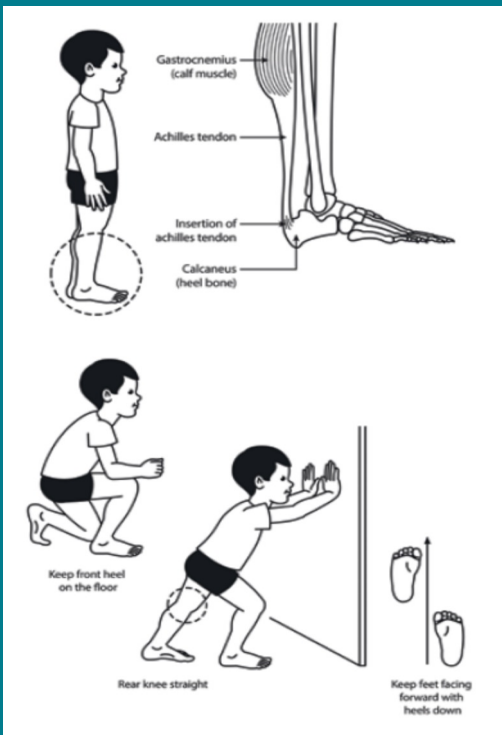
Surgery may be needed if the child shows no improvement after undergoing previous treatment. This may also be necessary in cases with severe deformity, rigid flat feet, neurological issues or if the child is not meeting developmental milestones. Surgery can help to repair fused bones and connective tissues.



X-RAY OF A FLAT FOOT

The lines mark the different angles of the foot.

It is clear in this image that this foot is rotated outwards and the arch sags towards the middle, causing a flat foot.





REFERENCES

- <https://www.nhs.uk/conditions/flat-feet/>
- <https://www.ouh.nhs.uk/paediatricorthopaedics/information/conditions/flat-foot.aspx>
- <https://www.feetfeet.co.uk/blogs/arch-pain/treating-flat-feet-in-children-and-babies>
- <https://beta.parkwayshenton.com/healthplus/article/flat-feet-common-children>
- <https://orthokids.org/conditions/flexible-flat-feet/>



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