# Gait Anomalies in Young Children

## Guidelines for referral to Physiotherapy

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There are a number of common foot and lower limb deformities seen in children. Occasionally presenting symptoms are warning signs that there may be underlying pathology present. Some advice is given below on when and when not to refer children, presenting with the most common gait anomalies, to a Physiotherapist.

## TOE WALKING

This is when a child persistently walks up on their toes, often for no known reason.

**YES – Please refer if;**

- There is associated developmental delay.
- The child is unable to squat or stand with their heels on the floor (tightness of calf muscles).
- The child is over 3 years and is unable to stand from floor sitting without using their hands.
- The toe walking is asymmetrical.

Treatment usually consists of stretching exercises but may include serial casting.

**NO – referral is not necessary if;**

- The toe walking is intermittent.
- The child is able to squat to play on the floor and is able to keep their heels on the floor.

## FLAT FEET

It is normal for babies and toddlers to have “flat feet” due to the presence of fatty tissue on the insoles of their feet and lax ligaments. The arch flattens when they are standing and their feet tend to roll in and point outwards.
The arch does not begin to develop until the age of 3 and nay not develop until approximately 6 years of age.
Many children present with “flexible flat feet” early in their walking development and may well grow out of out as their walking matures and they develop a longitudinal arch.
Walking in bare feet is ideal for promoting foot development.
Reassure parents that flat feet usually resolve during normal growth and development.

**YES – Please refer if;**

- There is associated pain in the lower limbs.
- There are signs of pressure on the foot e.g. blistering/callus.
- The longitudinal arch does not forma normally when the child stands on tip toe.
- The foot is stiff.

Treatment can consist of exercises and stretches as well as referral to an orthoptist or podiatrist who will assess the need for corrective insoles to go into the child's shoes.

**NO – referral is not necessary if;**

- The baby or toddler is under 4 years of age.
- The longitudinal arch forms normally when the child stands on tip toe.
- If the longitudinal arch forms when the child is non weight bearing.

If the child does not have any associated problems with their flat feet then do not worry.

## PES CAVUS

This is the opposite of flat feel and is when the arch is extremely pronounced. It is rarely seen and is usually indicative of a neurological cause; therefore a referral to a paediatrician or paediatric neurologist is the most appropriate action.

## KNOCK KNEES

This is when a child stands with their knees together and their ankles are at least 2.5cm apart. A gap of 6-7cms between the ankles is normal between the ages of 2-4 years. Knock knees usually resolve spontaneously by the age of 6 years approximately.

**YES – Please refer if;**

- The problem is associated with pain in the lower limbs.
- It occurs only on one side.
- It runs in the family.

**NO – referral is not necessary if;**

- The child is under the age of 6 and the problem does not result in any pain.

## BOW LEGS

This is when there is a small gap between a child's knees and the ankles when standing with their feet together. This is normally seen in children until the age of 2 years. Physiotherapy referral is generally not appropriate. However, if the problem is causing pain, then referral to an Orthopaedic Consultant is appropriate.

**YES – Please refer if;**

- There is associated pain in the lower limbs.
- It occurs only on one side.
- It runs in the family.

Note: Infants often have bow legs but with growth the child may then become knock-kneed around 18 months. With further growth the legs become straight.

## IN TOEING

In toeing is when a child walks with their feet turning inwards, and is commonly referred to as “pigeon toed”. It is a variation or normal and is part of normal development and will correct with growth over time with no treatment needed. The three most common causes of in toeing are femoral anteversion, internal/medial tibial torsion and metatarsus adductus.

## FEMORAL ANTEVERSION (twisting of the femur/thigh)

This is the most frequent cause of in toeing in children between the ages of 3-10 years. It is most common in females and most noticeable between the ages of 4-6 years. Most children outgrow this condition by age 10/adolescence.
In toeing will often appear worse when running and when the child is tired. Parents often describe the child’s gait as awkward or clumsy as the child may trip and fall more often. These children prefer to “W” sit.
Femoral anteversion will decrease naturally in 99% of cases. Treatment is simple reassurance and observation. Special shoes, orthotics, splints or exercises make no difference to the outcome.
Surgery is rarely required and never done before age 8-9.

## INTERNAL (MEDIAL) TIBIAL TORSION

This causes an in toeing gait due to a twisting inwards of the tibia. It is often noticed when a child first start to walk and is most common between the ages of 2-4 years. It is a variation of normal anatomy and partially caused by the child’s position in the womb.
Treatment is simple reassurance and observation.
Special shoes do no correct this condition.

## OUT TOEING

This is when a child’s feet point outwards. As with in toeing, this condition will usually resolve itself spontaneously and therefore referral to Physiotherapy is generally not necessary.

## CURLY/CROSSED TOES

Many children have curly toes (usually the third and fourth toes). Many persist into adult life. Whether they are a nuisance or not depends on the eye of the beholder. If this condition persists with pain, please refer to the Orthopaedic surgeon. Physiotherapy and Podiatry will not help.

## SUMMARY

Most variations or normal are outgrown.
Walking barefoot is good.
Shoes (and socks) shouldn't be tight. Better a little larger than too small.
If you have any further questions, queries or wish to discuss the appropriateness of a referral, please do not hesitate to contact the Physiotherapy Dept.

**Paediatric Physiotherapy Service**

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| Springboard Child Development Centre,<br>Orton Road,<br>Carlisle,<br>CA2 7HE | Penrith Hospital,<br>Bridge Lane,<br>Penrith,<br>CA11 8HX |
| Footsteps Child Development Centre,<br>West Cumberland Hospital,<br>Whitehaven,<br>CA28 8JG | Blackhall Unit,<br>Westmorland General Hospital,<br>Burton Road,<br>Kendal,<br>LA9 7RG |
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