

### Division of Pediatric Orthopaedics

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## **INTOEING: Frequently Asked Questions**

### **What is Intoeing?**

Most peoples' feet point straight ahead or outward. In some people you will find that their feet point inward. This is called intoeing or "pigeon toes". Intoeing is very common in younger children and usually corrects itself over time without any formal treatments.

### **What causes of intoeing?**

Intoeing may be due to one of the following:

Metatarsus Adductus

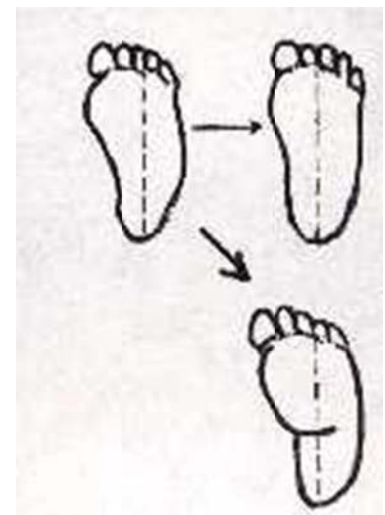
Internal Tibial Torsion

Femoral Torsion (Excessive Femoral Anteversion)

### **What is METATARSUS ADDUCTUS?**

Metatarsus adductus is a curve in the foot, commonly seen in newborns and young infants. It results from the positioning of the feet while the infant is "packed" in the

The picture at the right shows slight adductus at birth, which usually corrects spontaneously After 2 or 3 months (indicated by the horizontal arrow). In some cases, instead of correcting, it persists or gets worse and forms the typical deformity of metatarsus adductus (indicated by the downward arrow). Note the crease in the inner aspect of the foot.



uterus.

It is best noticed if you look at the sole of the foot. The forefoot is twisted inwards relative to the hindfoot (or heel).

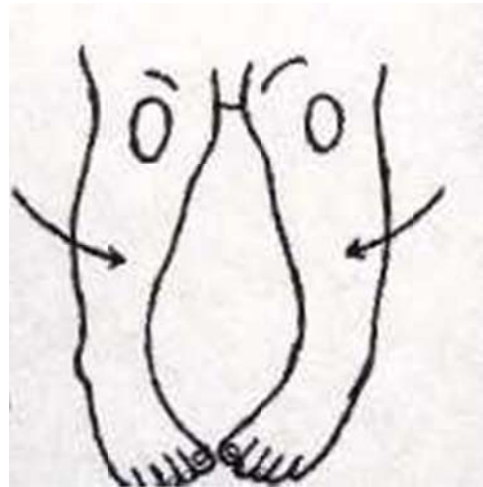
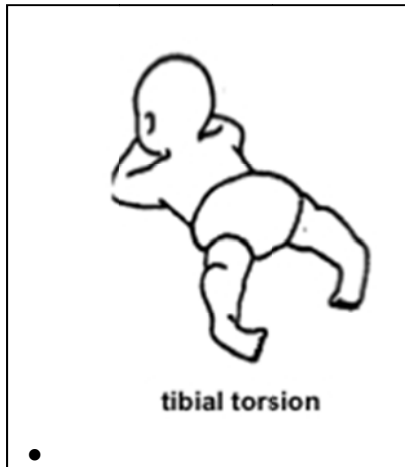
If metatarsus adductus is diagnosed at birth it often does not require immediate treatment. With growth of the newborn, it may spontaneously improve. If the adductus is more severe, some simple stretching exercises of the foot may be done at each diaper change to encourage improvement.

After about 3 or 4 months of observation and/or stretching exercises, if the foot does not have good correction, other treatments may be necessary. This may include serial castings or corrective bracing. Without treatment, about 85% of metatarsus adductus will resolve spontaneously. The remaining 15% will require one of these other interventions. Once correction has been obtained, recurrence is unlikely.

What is INTERNAL TIBIAL TORSION?

Internal tibial torsion occurs when the bone between the knee and ankle turns inward.

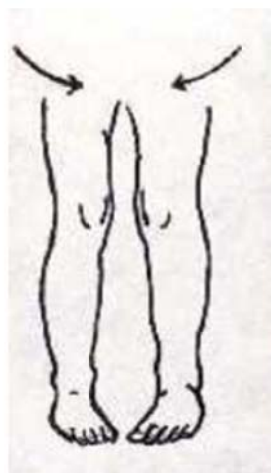
This is also from the position of the baby while still in the womb. Internal tibial torsion is a normal phase of skeletal development in the first 2 years of life. Over time, the tibia derotates (rotates out) itself and the intoeing improves. In a small portion of children, however, it does not improve or only partially improves. Even in these cases, the torsion can still improve spontaneously beyond age 2 years without treatment. If this does not occur, other measures will need to be taken, and the child will need to be assessed further. Shoe alterations and braces aren't used as they can make a child feel uncomfortable, self-conscious and they can interfere with play.



- The tibia (lower leg bone) is twisted slightly inward causing the child to have the toes pointing inward.
- It is a very common condition and is considered to be normal unless it does not begin to improve beyond 18 to 36 months of age.

Femoral torsion occurs when the femur (thigh bone) points inward. It is normal at birth and gradually corrects itself during the first decade of life.

It is typically noted in children between the ages of 3 and 8 years. The parents will notice intoeing and typically the child will stand or walk with the kneecaps and toes pointing inward.



In the past femoral torsion was treated with twister cables, which extended from a waist belt to special shoes and twisted the legs to an outward position. However,

many studies of thousands of children have been done and it has been found that in most children, femoral torsion will resolve spontaneously.

The most common cause of persistent femoral torsion is sitting in the "W" position (see picture above). This position forces the hips/legs to be internally rotated. The best position is to sit crossed legged, which encourages the normal modeling process.

#### IN GENERAL:

- You should encourage your child to sit "Indian-style" (with their legs crossed), and participate in out-toeing activities. These types of activities include gymnastics, ballet and soccer.
- Special braces and/or shoes are usually not required for the correction of in toeing.

#### • Useful websites:

American Academy of Orthopaedic Surgeons: [www.aaos.org](http://www.aaos.org)

American Academy of Family Physicians: [www.aafp.org](http://www.aafp.org)