

# intoeing

Our pediatric orthopedic group evaluates hundreds of children with intoeing each year, but this condition is very rare in adults. Some adults do have intoeing, but it does not typically cause pain or a significant cosmetic problem that makes them seek orthopedic care.

Many infants and toddlers begin life with twisted or bowed legs and feet. It gradually straightens with growth over a period of years. The primary cause is in-utero “packaging”. Babies are squeezed in the womb with flexible limbs that are molded to fit the space. It can be more significant if the child was a large baby or if there was not much room in the womb due to another cause, such as with decreased amniotic fluid.



## **this is a normal physiologic process in children:**

- Intoeing resolves by age 5 in most children and typically improves with growth until age 8-10.
- It can contribute to frequent tripping and falling
- Even if it does not resolve, intoeing does not usually cause pain, decreased speed, or increased risk of arthritis.

**There are 3 main contributing factors: metatarsus adductus, internal tibial torsion, and femoral anteversion.**

## **metatarsus adductus**

Sometimes the forefoot (the toe area) can be turned in more than normal. This is sometimes called “hooked forefoot” or described as “bean shaped.” All feet sweep or turn in a little bit, but these children have much more than normal.

Correcting metatarsus adductus depends mainly on whether the foot is flexible or stiff. If the foot is flexible and can be pushed to a straight position, then it is almost certain to correct on its own by the age of three years. It takes that long because small children grip the floor with their foot muscles, while older children and adults can usually stand without a lot of effort from the foot muscles.

When feet are stiff, or when the forefoot is severely turned in, we will sometimes use a series of casts in an effort to speed the correction process. This does not always work, especially for children older than six months. So, we usually let the children grow out of it as much as possible. If it is still a big problem around the age of three to six years, surgery can be performed, but this is very rare.



### internal tibial torsion

When the contributing factor is the shin bone (tibia), this is called internal tibial torsion. This is usually present at birth, but is much more visible when the child begins to walk and tries to run. It may seem to worsen up to the age of 2 years. One leg may be more affected than the other. This is probably caused by one leg being under the other in the womb.

Special shoes and braces will not untwist the bones. Pushing on the skin of the foot or leg does not create enough force to untwist the bone.

In extreme cases, like the one shown to the right, the tibia is twisted 90°. If this does not correct by age 5 or 6 years, it can be untwisted by a surgical procedure called osteotomy. The bone is cut, turned, and repaired with pins or plates until it heals in the corrected position. Fortunately, this is a rare procedure.



### femoral anteversion

When the contributing factor is the thigh bone (femur), it is called femoral anteversion. The entire leg turns in. This can be seen because the knee caps point inward in line with the feet. The twist seems to be coming from the hip, but it is actually the thigh bone, or femur, that is twisted.

When these children run, their legs often fly out to the side in a circular movement called “paddling” instead of straight up and down. This type of intoeing is uncommon in toddlers. It usually starts to appear between the ages of 2 and 4 years. It often gets worse until the age of 6 years before it starts to improve.



Children with this condition find it easy to sit with their feet under them in a “W” position. This sitting position may slow the natural correction if they sit for very long periods of time in this position.

Braces, exercises, special shoes and other non-operative treatments are not effective. This can be very frustrating for parents and children. Boys and girls can have femoral anteversion, but girls are usually more bothered by it.

Sometimes girls’ legs do not correct until puberty when the pelvis widens and changes shape. If there is no correction by age 12 years, then the bone can be untwisted by a surgical procedure. This is very rare.

**In summary, intoeing is very common in children. It can be very frustrating for parents as it can take years to improve. Children typically do not have pain or symptoms as a result of intoeing, but can appear more “clumsy” or “less athletic”. The natural progression of intoeing is excellent.**

**Non-operative treatment (i.e. exercises, special shoes, or bracing) is unsuccessful and the need for operative treatment is very rare.**

*This information was provided by Dayton Children’s Hospital. For more medically reviewed information written for parents, kids and teens visit [childrensdayton.org](http://childrensdayton.org). © 2018.*