



PALM BEACH ORTHOPAEDIC INSTITUTE, P.A.

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IN-TOEING

What is in-toeing?

In-toeing is when your child's foot points inward instead of straight ahead when they run or walk. For most toddlers, in-toeing is painless and can be normal. In-toeing can come from the toes turning in, or a rotation in the shin bone or the thigh bone. In-toeing usually improves as children grow. Most children with in-toeing learn to walk, run, and play sports just like children whose feet point straight ahead.

What causes in-toeing?

In-toeing usually happens because the bones in the leg turn inward. This is normal in most toddlers. The three parts of the leg that can be rotated inward are the thigh bone (femur), the shin bone (tibia), and the foot. This may run in families.

Femoral Anteversion - This is when the thigh bone (femur) has a twist and turns inward. The hip can rotate inward more than usual. Many kids with femoral anteversion can sit in a "W" position. In almost all children, the femur bone will gradually correct and untwist by itself. This may not happen until 10 years old. There are no braces, shoes, exercises, or chiropractic manipulations that will make this happen faster. There are many websites that caution parents not to let their children sit in a "W" position. Their claims and warnings have been proven to be completely false and this does not cause any problems for the child.



Tibial Torsion - This is when the shin bone (tibia) has a twist and turns inward. Many times, this is because the leg is rotated inward for the baby's legs to fit in the mother's womb during pregnancy. In almost all children, the tibia bone will gradually correct and untwist by itself, but this also can take years.



Metatarsus Adductus - This is when the foot is curved inward. This can look a little bit like a mild clubfoot deformity, but metatarsus adductus is very different from clubfoot. Again, this usually corrects on its own after birth, but if the foot does not improve during the first year of life, braces or casts may be recommended.



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What are the symptoms of in-toeing?

Most children with in-toeing have no pain or functional problems. Frequently, families notice that the child stands, walks, or runs with the feet point inward. Sometimes it will be noted that children who in-toe are clumsy and trip frequently.

How is it diagnosed?

Your doctor will take a thorough history, especially regarding birth history and developmental milestones. Any history of pain or limping should be discussed. The physical exam will include watching your child walk and run, and checking range of motion of the hips, knees, ankles, and feet. He will also do a neurologic examination to check muscle tightness, nerve/muscle function, and coordination. He will also note whether your child has femoral anteversion, tibial torsion, or metatarsus adductus.

What other studies or tests need to be done?

The vast majority of children with in-toeing only need to be evaluated with a full history and physical exam. If there is developmental delay, limp, pain, asymmetry, or a worsening gait, other tests like x-rays may be needed.

How is it treated?

Normal in-toeing in a toddler requires no treatment other than observation. It can take many years for the bones to untwist as the child grows. Special shoes, braces, or chiropractic manipulation do not make the intoeing improve any faster. If the femoral anteversion or tibial torsion remains during middle school and causes problems with tripping or walking, surgery may be considered to cut and rotate the bone. This is very rarely needed in otherwise normal children who have femoral anteversion/tibial torsion.

What is the expected outcome?

In-toeing due to femoral anteversion, tibial torsion, or metatarsus adductus tends to improve as children grow. There is a small subset of patients where the in-toeing does not resolve, however, most of these patients have no pain or functional problems. One study even showed that kids who in-toe a little bit run faster.

If the child is at least 8 years old and continues to have significant intoeing which is affecting activities they should be reevaluated. If they continue to have disability and problems with sports at this age we consider surgery to fix the problem.

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