

Tibial Torsion

INTRODUCTION

Your child has been diagnosed with tibial torsion. This is one of the common causes for intoeing, typically seen in a young child. Tibial torsion means that there is a twist in the tibia (shin bone) between the knee and the ankle. This twist is typically present at birth, but is often not recognized until the child starts standing and often it can seem to get worse as the child learns to walk. It is very uncommon for there to be pain or functional limitations. Almost always, tibial torsion improves with growth. Splints, braces, special shoes, and exercise programs don't help. If tibial torsion is severe and persists past age 8, surgery can be considered.



BACKGROUND

Intoeing is a term used to describe an internally rotated foot position with gait. Gait is a complex process which takes years to mature. Gait develops and matures as balance, coordination, and strength improve. Toddlers often start walking with knees bent and hips rotated outward, taking short wide steps. With practice and growth, strides lengthen and knees are kept straighter and directed more forward. As this occurs, kids often start looking intoed. Intoeing is not a function of gait so much as it related the shape of the legs. Intoeing is measured by looking at the angle

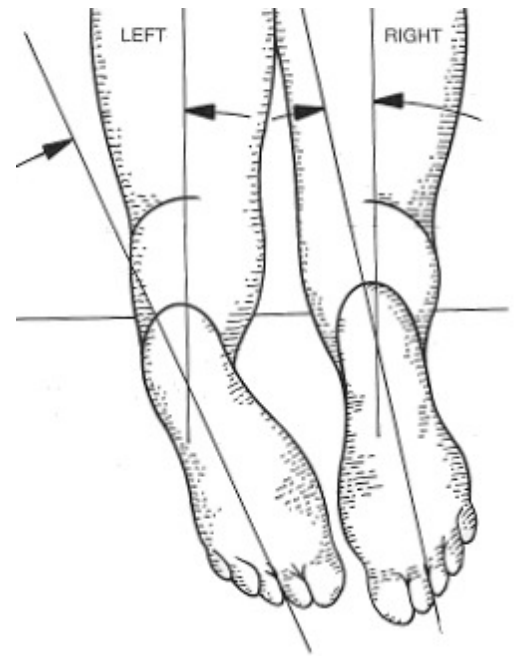


between the axis of each foot and the direction of walking. There is a wide range of normal for foot alignment when walking. Most people are in the range from 10 degrees inward to 30 degrees outward, with the most common alignment being about 5 degrees outward.

The twist in the tibia is related to bone development prior to being born. Prior to birth, the legs were held in a confined position. Pressure from the uterine wall can cause the bones to develop with a twist. The twist is often not noticed until the children start to stand and walk. There are 3 levels where a curvature or a rotation can be found in the legs. A curvature in the foot is called metatarsus adductus. A twist in the lower leg is called tibial torsion and a twist in the thigh bone is called femoral anteversion.

DIAGNOSIS

The diagnosis of tibial torsion is made by examining the child and by observing gait. Tibial torsion is best seen with the child laying flat and the knees bent upward. The rotation of the tibia is measured as the angle the foot makes relative to the thigh. This is the most common cause of intoeing and is usually first recognized after the child starts walking, usually by 2 to 3 years of age. As the child grows and the gait pattern matures, it becomes obvious that the feet point inward while walking. This is not a cause for pain. Kids with tibial torsion seem to fall a lot, and perhaps more than other kids the same age. This is especially true when the child is excited or tired.



TREATMENT

Almost always, tibial torsion will correct spontaneously with growth. Intoeing may cause your child to stumble or trip more than other kids, but falls at this age rarely result in injury beyond some simple scrapes and bruises. Gait and coordination improve with time. Tibial torsion rarely results in any significant functional problems and does not need to be treated.

In the past, tibial torsion was often treated with uncomfortable shoes, braces, or twister cables. It turns out that these "treatments" do not change the natural growth pattern. Since tibial torsion corrects spontaneously, these braces appear to be effective. Many parents in that generation were told to brace their children. They saw the improvement with time and believe in the effectiveness of bracing.



Professor Lynn Staheli of the University of Washington has studied these problems extensively for many years. To quote him... "Shoe modifications are useless; bracing is ineffective. Surgical rotational osteotomies are effective, but risky, and indicated only for severe, persisting deformities."

EXPECTATIONS AND OUTCOMES

Intoeing does not cause pain and does not interfere with the way your child walks, runs, jumps, or plays. Intoeing has not been linked to arthritis or any other medical conditions in adulthood.

MORE INFORMATION

Further information can be obtained on the internet. Your local public library can help you explore these sources if you are interested. Two good sites for peer reviewed information are the American Academy of Orthopedic Surgeons at www.aaos.org and www.emedicine.com.

FEEDBACK

If you have questions or comments, please contact the office or submit them to the web site at www.pedortho.com.

