

Intoeing and Outtoeing: Why is my child walking with his feet turning in/out?

When a child begins to walk his or her parents expect the child to utilize good posture with feet pointed in a straight or neutral direction. When a new walker's feet are pointing in, (pigeontoe) or out, (bowlegged) it may be a source of concern for family members. Parents often ask if the child's walk is normal. Will the child grow out of it and will it cause problems into adulthood?

Infants learning to walk typically stand with their legs in a wide position, their arms held high and sometimes their feet turned in or out. Some parents often describe this early walking pattern as the "Frankenstein" walk. This walk is partially a result of the child trying to balance as well as he or she can when learning a new and difficult skill. In order to enable the parent to understand what the infant is experiencing, I ask them to recall the first time they went skiing. They often remember the stiffness of their bodies, the wide stance of their legs and their lack of fluidity as they awkwardly attempted to snowplow down the bunny slope. The parent can then see the similarities between the novice skier and walker. With practice, coordination improves in both cases. I advise parents that this is a normal part of their child's development and there is no need to be concerned at this time.

During certain developmental tasks in or outtoeing is normal. At birth the upper portion of the thigh bone is rotated inward an average of 40 degrees. By the age of eight, this inward rotation or *anteversion* typically decreases to 10 to 15 degrees. It is normal for the child's feet to turn in when he or she begins to walk. However, after 6-8 months when the child has built strength, the arches of the foot have begun to develop and stability and balance improves; the intoeing should diminish.

Some children's inward rotation does not diminish and the intoeing posture persists causing various problems. Intoeing may cause the child to trip because of difficulty clearing the foot off the ground. Intoeing may also result in a delay of motor milestones like jumping, skipping, hopping and running. The child may have difficulty keeping up with his age level peers and may also demonstrate muscular weakness, hyperflexibility of the hip muscles that turn the thigh in and poor trunk strength due to faulty "W" sitting postures. If your child demonstrates the symptoms mentioned a consultation with a pediatric physical therapist should be obtained. If intoeing is left

untreated in early childhood, the adolescent may experience knee pain or instability as a result.

There are three typical causes of intoeing: *Metatarsus adductus* (curved foot), *Femoral anteversion* (twisted thigh bone) and *Tibial torsion* (twisted shin bone). A child with femoral anteversion is easily identifiable. He or she usually sits in a “W” position with the knees bent and the feet flared out behind them. Their running pattern is usually characterized by a windmill motion of the legs.

The most common cause of intoeing in children 1 to 3 years old is internal tibial rotation. The parents note that the child appears to be bowlegged and trips and falls frequently.

Metatarsus adductus is the incurving of the foot, common in newborn children. The foot often takes on the shape similar to a kidney bean where both the toes and heel curve in. This deformity is usually a result of positioning in the womb. All three causes of intoeing can give rise to functional deficits in gross motor skill development and should not be left untreated.

. Outtoeing is caused by torsional forces that pull the thigh bone in an outward direction. Outtoeing if not addressed, like intoeing is associated with patella tracking problems that cause knee pain and muscular imbalances in the adolescent years.

Referral to a pediatric physical therapist for intoeing or outtoeing is necessary when the child is experiencing difficulty with functional age appropriate activities and if the child exhibits asymmetries that are causing pain. Through therapeutic exercise, flexibility training, mobilizations, functional training and consultation with a pediatric orthopedist, in and outtoeing can be treated successfully. In an aesthetic sense, the child will be able to walk with a more straight or neutral foot posture. The child will be able to keep up with his peers when participating in age appropriate gross motor skills and finally the child’s improved biomechanical alignment will result in a decreased occurrence of orthopedic problems into adolescence and adulthood.