INFORMATION SHEET – What is intoeing and outtoeing?

Definition
Intoeing means the feet point inward instead of pointing straight when walking or running. Outtoeing means the feet point outward instead of pointing straight when walking or running. These are common variations in the development of children. If you have noticed that your child’s feet turn in or out this is often normal. This often corrects itself without treatment as your child grows older.

Causes
Outtoeing
Outtoeing usually occurs during the first year of life. It is often due to the position of your child’s hips while in the uterus. Outtoeing normally resolves without treatment.

Intoeing
There are three common conditions that can cause intoeing: curved foot (metatarsus adductus), twisted shin (tibial torsion), and/or twisted thigh bone (femoral anteversion). Each of these conditions can run in families. They can occur on their own or with other bone and muscle problems. Prevention is not possible as these occur from development or genetic conditions that you are born with.

Curved Foot (Metatarsus Adductus)
This is the most common cause of intoeing at birth. It is believed to be caused by positioning in the uterus or family history. If the foot is flexible and mild no treatment is necessary. Most of the time metatarsus adductus resolves on its own. Adults with flexible metatarsus adductus are not anymore at risk for foot problems than anyone in the general population. However, if the foot is rigid/stiff and your child is under 8 months, your provider may recommend casting to allow the foot to grow straight.

Twisted Shin (Tibial Torsion)
Tibial torsion is thought to occur before birth, as the legs rotate to fit in the uterus. If the shin has not untwisted by the time the child starts walking, the feet may point in. This is noticed most commonly during the second year of life after the child has started walking. As the tibia grows, most of the time it untwists.
**Femoral Anteversion**
Femoral anteversion occurs when the child’s thigh (femur) turns inward. It is often most obvious between 3-7 years of age. When the child walks their kneecaps point inward. This is caused because the upper end of the thighbone has more of a twist into the hip socket. This then causes the hip to turn in more than it turns out. This condition occurs more often in girls. It may worsen by sitting in the “W” position.

**Effects & Treatment**
Intoeing is a common developmental condition. It usually corrects itself by age 10. Occasionally severe intoeing can cause a young child to trip. However, falling is a part of the learning to walk process and is not exclusively caused by intoeing. Many years ago it was thought that bracing, twister cables and/or corrective shoes could help intoeing. However, years of studies have shown them not to be effective. Intoeing will not affect your child’s abilities to walk, run, play or lead a normal life. Adults with residual intoeing are not at increased risk to develop pain or arthritis. A child with intoeing and severe pain, swelling or limp should be evaluated by an orthopaedic provider.

**Metatarsus Adductus**
There are two types of metatarsus adductus: flexible and stiff. Flexible metatarsus adductus is common and will often improve, even resolve, on its own during the first 4-6 months of life. Flexible metatarsus adductus has no impact on your child’s function.

If the metatarsus adductus is rigid, then we may consider attempting to correct this with stretching casts. Ideally this would be done before or around eight months of age. Surgery for metatarsus adductus is rare and only for severe and rigid/stiff conditions.

**Tibial Torsion & Femoral Anteversion**
Tibial torsion and femoral anteversion almost always spontaneously correct in most children by age 10. Studies have found that special braces, shoes, and exercises do not help. Surgery is the only treatment that can correct tibial torsion or femoral anteversion. It is not recommended until after age 10 and only if it is causing severe deformity or an abnormal gait.