



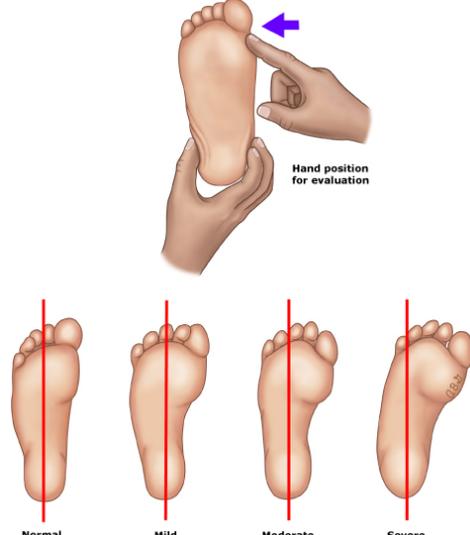
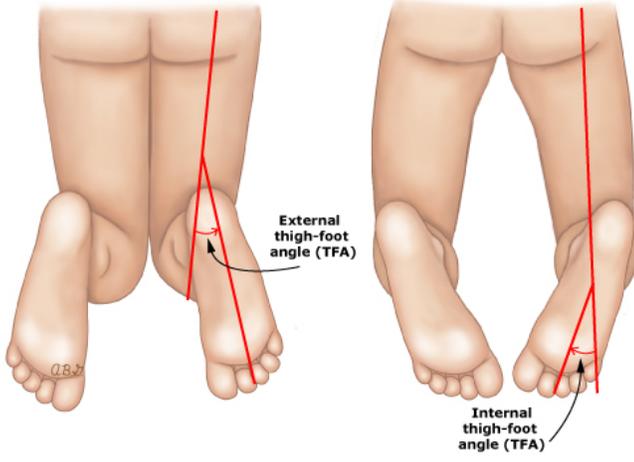
Co-management Guide

Pediatric Orthopedics

Intoeing

Guidelines Referenced	https://www.uptodate.com/contents/approach-to-the-child-with-in-toeing
Background	<p>Intoeing (pointing of the feet toward the midline) is one of the more common, and generally benign, variations in normal musculoskeletal development. Intoeing should be regarded as a sign and not a diagnosis, as the causes of this finding include metatarsus adductus, internal tibial torsion, and femoral anteversion. In most cases, all of these causes spontaneously improve as children age. The presence of intoeing, however, is often a cause of significant parental/family anxiety; in the past, intoeing was considered a pathologic abnormality and was frequently treated with special braces/shoes (which we now know were ineffective).</p> <p>Intervention (bracing, casting, surgery) for intoeing is only rarely required. Evaluation of the patient should focus on identification of the anatomic cause of the intoeing and careful examination for possible associated findings that may suggest an underlying additional pathology. Uncommon causes of intoeing that warrant specialist evaluation include rare congenital foot deformities (e.g. skewfoot), cerebral palsy, and hip dysplasia. When none of these coexistent conditions are present, management usually consists of sequential monitoring and reassurance of the family.</p>
Initial Evaluation	<ul style="list-style-type: none"> • Medical history, including birth history and developmental history • Family history • Physical examination to include evaluation of the following: <ul style="list-style-type: none"> ○ Heel bisector position/rigidity (see below). ○ Presence of intoeing in a seated position ○ Presence of intoeing during gait, and position of patellae ○ Thigh-foot angle (see below). ○ Hip Rotation (see below). ○ Hip ROM (including abduction and ability to sit in the “W” position) ○ Lower extremity reflexes
Initial Management	<p>Reassurance of the family with anticipatory guidance for timing of expected resolution:</p> <ul style="list-style-type: none"> • Metatarsus adductus: 18-24 months of age • Tibial torsion: 5 years of age • Femoral anteversion: 10 years of age
When to Refer	<ul style="list-style-type: none"> • Rigid metatarsus adductus • Marked asymmetry (> 15°), particularly in the setting of abnormal neurologic exam • Presence of a limp or large leg length discrepancy • Cosmetically or functionally unacceptable alignment <ul style="list-style-type: none"> With metatarsus adductus: refer at 1 year With tibial torsion: refer at 5 years With femoral anteversion: refer at 10 years
Pre-Visit Work Up	Documentation of physical exam addressing the above “Initial Evaluation” parameters

Co-management Strategy (as appropriate)	Specialist scope of care <ul style="list-style-type: none"> Evaluation and management of patients who meet criteria for referral. Workup may include imaging studies, bracing, serial casting, and/or surgery. 	Primary care scope of care <ul style="list-style-type: none"> Initial evaluation Monitoring of patients who do not meet criteria for specialist referral Referral to additional specialists (e.g. neurology) as requested by orthopedics and required by patient's insurance
Return to Primary Care Endpoint	<ul style="list-style-type: none"> Patients who do not meet criteria for referral will be returned for monitoring Improvement in rotational profile (spontaneous or after intervention completed) Patients who decline intervention when clinically indicated 	

Evaluation of metatarsus adductus	Thigh Foot Angle
 <p>Hand position for evaluation</p> <p>Normal Mild Moderate Severe</p>	 <p>External thigh-foot angle (TFA)</p> <p>Internal thigh-foot angle (TFA)</p>
<p>Flexibility is determined by whether adduction can be corrected with manipulation back to the normal position.</p>	<p>Thigh-foot angle – The thigh-foot angle is measured with the knee flexed and the ankle dorsiflexed so that the plantar surface of the foot is parallel to the ceiling. Allow the foot to fall into a neutral position. A visual line is approximated along the long axis of the thigh and a second line along the long axis of the heel. The angle between these two lines is the thigh-foot angle (figure 5). If the line of the heel points toward the midline relative to the thigh, it suggests internal torsion of the tibia. If the line of the heel points away from the midline relative to the thigh, it suggests external torsion of the tibia.</p>

