Paediatric Physiotherapy Referral guidance for management of in-toeing.

In-toeing describes the internal rotation of the foot relative to the direction the child is standing / walking when the leg is straight. (BMJ Best Practice, 2020). It is one of the most common musculoskeletal findings in children with up to 30% of children <6yrs presenting with an in-toeing gait as part of their normal development.

There are 3 main causes of in-toeing, which are considered normal from birth until around 8-10yrs of age. (Yeo, 2015, Rerucha, 2017, Berry 2018, Davis 2018)

Internal tibial torsion. (most common) apparent when a child starts walking, usually resolves by aged 5, boys and girls equally affected.

Femoral anteversion most evident between 4 and 7 years, resolves in 80% of cases by the age of 8yrs. More common in girls.

Metatarsus adductus most common congenital foot abnormality, usual resolves by age 1. More common in girls than boys.

Referral not necessary if:

In-toeing is a common normal variant, and most children do not need onward referral, If:

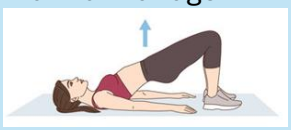
- The child is well with no red flag features.
- Is younger than 8 yrs of age
- There is no pain or functional limitation.
- There is no evidence of metatarsus adductus.
- Advised children to avoid sitting in the 'W' position and signpost parents to the ELHT paediatric Physiotherapy website for further information / advice

Please direct patients to the East Lancashire Paediatric Physiotherapy Patient information Leaflet for further information and support

Where children present outside of normal variant, please see below table for the most appropriate referral source based on clinical findings:

Onward Referral Guide.

	Internal Tibial Torsion	Femoral Anteversion	Metatarsus Adductus
Refer to Orthopaedics	Internal tibial rotation Persisting beyond 5yrs or that are extreme Associated pain >2 standard deviations from mean	Internal femoral rotation Persisting beyond 8yrs or that are extreme. Associated pain >2 standard deviations from mean	Foot unable to be passively corrected to neutral / fixed. Presentation not corrected by 12mths

Refer to Physio	Sudden onset of in toeing. Delayed developmental milestones Unilateral or asymmetrical in-toeing Significant tripping and falling several times a day (unexpected for age) or functional problems. Moderate core and glute weakness ie unable to maintain bridge. 	Sudden onset of in toeing. Delayed developmental milestones Unilateral or asymmetrical in-toeing Significant tripping and falling several times a day (unexpected for age) or functional problems. Moderate core and glute weakness ie unable to maintain bridge. 	Tightness / restriction in passively correcting foot to neutral
Refer to Community Paediatrician	Abnormal examination findings suggestive of abnormal neurology, especially if associated with high risk birth Hx. Significant history to indicate an underlying metabolic, neuromuscular reason	Abnormal examination findings suggestive of abnormal neurology especially if associated with high risk birth Hx Significant history to indicate an underlying metabolic, neuromuscular reason	
Refer to UCC or A&E	Red Flag Features Sudden onset limb or unable to WB	Red Flag Features Sudden onset limb or unable to WB	

References

https://cks.nice.org.uk/topics/common-musculoskeletal-presentations-in-children/management/in-toeing-gait-in-children/
RightPath Musculoskeletal triage guidance for children and young people [RightPath, 2017],
local NHS referral information and guidelines, *Referral guidelines for children's MSK physiotherapy from Oxford University Hospitals NHS Foundation Trust* [OUH, 2016],
Paediatric musculoskeletal services; Intoeing from Nottingham University Hospitals NHS Trust [Nottingham University Hospitals NHS Trust, 2017],
Acceptance criteria for Northampton General Hospital children's physiotherapy department [Northampton General Hospital NHS Trust, 2024], the *GP Gateway: Paediatric orthopaedic problems* from Coventry and Warwickshire ICB [NHS Coventry and Warwickshire ICB, 2024],
Orthopaedic pre-referral guidance from NHS Greater Glasgow and Clyde [NHSGCG, 2024], as well as expert opinion in review articles *Normal lower limb variants in children* [Yeo, 2015