Clinical Design & Innovation
Person-centred, co-ordinated care

PAEDIATRICS

FACULTY OF PAEDIATRICS
ROYAL COLLEGE OF PHYSICIANS OF IRELAND

Bow Legs/Knock Knees/In-Toeing

BACKGROUND

- Bow legs are normal variants, coincide with early toddler walking and improve with time.
- Knock knees often follow bow legs and are a normal variant.
- In-toeing is due to medial tibial torsion, in-turning of the fore-foot or femoral anteversion and it will resolve
- Knock knees an in-toeing lead to increased falls in toddlers

DIFFERENTIALS

- Rickets
- Metabolic bone disease
- Neuromuscular disease
- Post-trauma (damage to growth plate)
- Blount disease (asymmetrical severe bow leg, more common in Afro- Caribbean and Scandinavian groups)
- Neoplasia (progressive, unilateral deformity)

HISTORY

- Most children are bow legged until 3 years of age
- Most children become knock-kneed between 3-5 years of age
- By 7 years of age, adult alignment is reached
- History of falls
- Developmental history
- Family history of lower limb abnormalities

EXAMINATION

- Centiles
- Observe gait
- Features of rickets
- Bow legs: Measure distance between knees (should be <6 cm)
- Knock knees: Measure distance between medial malleoli (should be <8 cm)

INVESTIGATIONS

- Rarely required
- If differential suspected:
  - X-ray lower limbs
  - X-ray wrist and biochemical profile for suspected rickets

TREATMENT

- Nil required
- Allow to resolve over time
- Very few require orthopaedic referral
- May refer to physiotherapy for parental advice and reassurance

EVIDENCE BASED

- Night splints are not recommended for bow legs as they are ineffective
- Shoes should not be put on opposite feet

TAKE HOME MESSAGES

- Bow legs, knock knees and in-toeing are normal variants
- Cause of great parental anxiety
- Education and reassurance of family important
- Few require referral

REFERRAL

- Limp
- Outside 6cm rule
- Unilateral
- Outside typical age group
- Other associated skeletal deformity such as height <5th centile for age.

Ref: Bow Legs/Knock Knees/In-Toeing 10/23. CDI/0054/2.0/2023

REFERENCES:
• www.orthoseek.com • www.rch.org.au • www.health.vic.gov.au • www.uptodate.com