Facts

- Trauma leading cause death 1-14 yrs
- Mechanisms: fall, MVA
- Skeletal trauma 10-15% childhood injuries
- 15-30% are physeal fractures
- Open fractures rare
Paediatric Trauma
Paediatric Trauma Assessment

- A, B, C, D, E
- C spine - SCIWORA
- AVPU
- BM
- Even if no # suspect soft tissue injury
- Fluids: 20ml/kg boluses
Paediatric Physiology

- Higher BMR, higher O2 demand (2x adults)
- Lower blood volume
- Do not compensate
- Higher SA:V → hypothermia
Useful equations for over 1yr old

- Wt (kg) = 2 \[\text{age (yrs)} + 4\]
- Blood vol \(\sim\) 75-85ml/kg
- Systolic \(\sim\) 90mmHg + (2 \times \text{age (yrs)})
- U/O: 1-2ml/kg/hr
- May not be hypotensive until 25% + loss
- Uncuffed ETT = \[\text{age(yrs)/4}\]+4 (2 y/o +)
Approach to child with a Fracture

- History
- Examination
  - Look for other injuries
- Pain relief
  - Analgesia
  - Splint
- Radiology
Paediatric Fractures

- Torus fracture/buckle fracture
- A compression injury
- Metaphyseal-diaphyseal junction
- Usually stable and do not require manipulation
Paediatric Fractures

- ‘Greenstick’ Fracture
- Young children
- Incomplete fracture due to thick periosteum
- A bending injury
- Fracture may need completing to achieve adequate reduction and prevent permanent deformity.
Paediatric Fractures

- Bending Force in older children may lead to transverse or short oblique fractures
Paediatric Fractures

- Torsional injuries
- Long spiral fractures
- Physeal fractures
Physeal Injuries

- Salter Harris Classification
- Types I-V
- Type II is commonest
- Can affect Growth
- Prognosis worsens from I → V
Physeal fractures

Type I
A complete physeal fracture with or without displacement.

Type II
A physeal fracture that extends through the metaphysis, producing a chip fracture of the metaphysis, which may be very small.

Type III
A physeal fracture that extends through the epiphysis.

Type IV
A physeal fracture plus epiphyseal and metaphyseal fractures.

Type V
A compression fracture of the growth plate.
NAI

- Suspect if
  - Inconsistent history
  - Unwitnessed injuries leading to a fracture
  - Delayed presentation
  - Fracture pattern does not fit with injury described
  - Transverse femoral # < 1 y/o
  - Transverse humeral # < 3 y/o
  - ‘corner fracture’
  - Multiple fractures at various healing stages
  - Skin stigmata suggestive of abuse
Corner fracture
The child is your patient
Needs to be safe
ANY doubt:
  - contact Paediatric Reg or Consultant on call
  - admit child
  - contact social services