

# Paediatric intraosseous insertion at a glance

## NEEDLE SELECTION



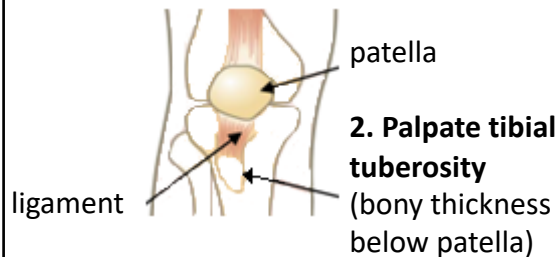
**INDICATION:** Need for immediate IV access without ability to insert line. \*All intravenous medication can go via intraosseous line including inotropes\* Do not use >24hrs.

## CONTRAINDICATIONS

- Fracture in the bone of insertion
- Infection at site of insertion
- Landmarks not identifiable
- IO/attempted IO access in bone within last 48 hrs
- Prosthesis /orthopaedic procedure near site

### Proximal Tibia

1. Position:  
Infant: flexed knee, Adolescent: straight leg

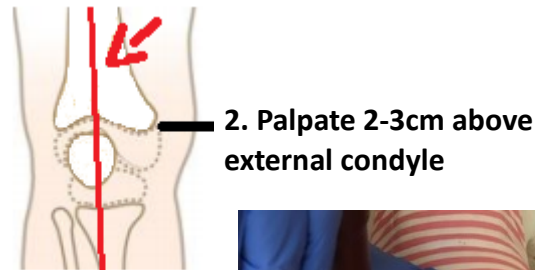


3. Insert 2-3cm below + medial to tibial tuberosity into the flat antero-medial surface of tibia



### Distal Femur < 6yr old

1. Position: straight leg.

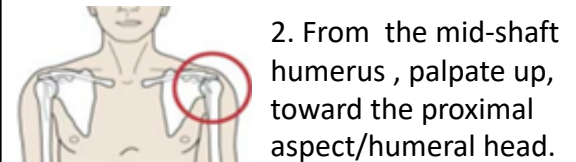


3. Insertion just medial to midline to avoid tendon



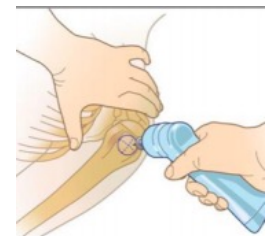
### Proximal Humerus >6yr old

1. Position: Elbow adducted, hand over the umbilicus



3. Palpate small bony protrusion close to shoulder.

4. Insert at base of greater tubercle (Insert at 45° to bone)



# Step by step guide to IO insertion

1. Clean site and position patient

2. Place needle at **90° angle to bone** (except for humerus -45° to bone)



3. Push the needle through the skin – **do not rev the gun until it touches the bone. Use longer needle if no black line is visible at this point**

4. Gently drive into the bone

5. **Stop when you feel loss of resistance**

6. Ensure needle stable in bone

7. Remove central stylet

8. Aspirate bone marrow to confirm location. (NB not always possible)

9. Send bone marrow for culture and glucose if able (inform lab)

10. Connect extension set with dressing.

11. Flush IO – there should be easy flow. Check for extravasation injury

12. Fix IO needle to the limb with dressing or forceps



13. Monitor limb carefully using SORT intraosseous needle observation chart

**IO Lignocaine** Lignocaine can be used for pain relief for infusions via intraosseous needle in conscious children **WITH EXTREME CAUTION**  
Dose: 0.5 mg/kg (0.05mL/kg of 1%). Maximum 40mg.  
Infuse lignocaine IO over 120 seconds  
Wait 60 seconds to let lignocaine dwell in IO space  
Flush with 2-5 mL of normal saline  
Repeat doses are half of first dose infused over 60 seconds if needed