



Intra-osseous access

1.
In what clinical situations would you consider gaining intra-osseous (IO) access?
2.
Where do drugs and fluids go when injected into an IO cannula?
3.
How quickly do medications act when injected intra-osseously?
4.
Where is the preferred site of access for IO cannulation in infants and children?
5.
Which other sites can IO cannulae be inserted into?
6.
Can you describe how you prepare for and insert an IO cannula?
7.
How is correct placement confirmed?
8.
What complications can occur following IO cannula insertion?
9.
Are there any contraindications to IO cannulation?
10.
Other than using the manual cannulae, are you aware of other techniques available for gaining IO access?

Disclaimer: This mock viva was written by Dr Alyson Calder, Trainee Representative APAGBI and is designed to stimulate discussion and further reading. It does not represent the views of the Royal College of Anaesthetists. Please email alysoncalder@doctors.org.uk with any questions or comments.

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Useful Reading:

Cullen PM. Intraosseous cannulation in children. *Anaesthesia & Intensive Care Medicine* 2012; **13(1)**: 28-30

Intraosseous cannulation

- Gains rapid access to venous circulation
- Manual: 18G and 20G cannulae available
- Automatic insertion (e.g. *EZ-IO*TM): 15G, 3 lengths available
- Administer drugs, fluids (flushed in, gravitational free flow is slow)
- Medication onset time similar to IV
- Confirm placement by aspirating blood/flushes easily (no extravasation)
- Take blood sample (e.g. cross-match) (label it 'bone marrow')
- Hb values lower than venous

- Sites:
 - Anterior proximal tibial surface (1-2cm distal to tibial tuberosity)
 - Iliac crest
 - Sternum no longer recommended (risk mediastinal puncture)

- Complications:
 - Compartment syndrome
 - Fracture
 - Osteomyelitis
 - Haematoma
 - Growth plate damage

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