

## P220 LFD PROCEDURE PROTOCOL: INTRAOSSEUS CATHETER PLACEMENT

AEMT	EMT-I	Paramedic
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### Indications:

- A. Rescue or primary vascular access device when peripheral IV access not obtainable in a patient with critical illness defined as:
  - 1. Cardiopulmonary arrest or impending arrest
  - 2. Profound shock with severe hypotension and poor perfusion
  - 3. Hypoglycemia with severe symptoms and no venous access
- B. IO placement may be considered prior to peripheral IV attempts in critical patients without identifiable peripheral veins

### Technique:

- A. Site of choice – **tibial plateau**: 2 fingerbreadths below the tibial tuberosity on the anteromedial surface of tibia.
  - 1. Alternative sites (e.g. **humeral head in adults**)
- B. Clean skin.
- C. Place intraosseous needle perpendicular to the bone.
- D. Follow manufacturer's guidelines specific to the device being used for insertion.
- E. Entrance into the bone marrow is indicated by a sudden loss of resistance.
- F. Flush line with 10 mL saline. **Do not attempt to aspirate marrow**
  - a. If patient conscious, administer lidocaine for pain control before infusing any other fluids
- G. Secure line
  - 1. Even if properly placed, the needle will not be secure. The needle must be secured and the IV tubing taped. The IO needle should be stabilized at all times.
- H. Observe for signs of limb swelling, decreased perfusion to distal extremity that would indicate a malpositioned IO catheter or other complication. If limb becomes tense or malperfused, disconnect IO tubing immediately and leave IO in place.
- I. A person should be assigned to monitor the IO at the scene and en route to the hospital.
- J. Do not make more than one IO placement attempt per bone.
- K. Do not remove IO needles in the field.
- L. Notify hospital staff of all insertion sites/attempts.

### Complications:

- A. Fracture
- B. Compartment syndrome
- C. Infection

### Contraindications:

- A. Fracture of target bone
- B. Cellulitis (skin infection overlying insertion site)
- C. Osteogenesis imperfecta (rare condition predisposing to fractures with minimal trauma)
- D. Total knee replacement (hardware will prevent placement)

### Side Effects and Special Notes:

- 1. Some authorities recommend aspiration of marrow fluid or tissue to confirm needle location. This is not recommended for field procedures, as it increases the risk of plugging the needle.
- 2. Expect flow rates to be slower than peripheral IV's. Pressure bags may be needed. Any drug or IV fluid may be infused.