



**REGION 11  
CHICAGO EMS SYSTEM  
PROCEDURE**

Title: Adult Intraosseous (IO) Insertion – EZ-IO

Section: Medication Administration/Access

Approved: EMS Medical Directors Consortium

EMS Level: ALS

## **ADULT INTRAOSSEOUS (IO) INSERTION – EZ-IO**

### INDICATIONS:

- Intravenous access is indicated
- Two (2) unsuccessful peripheral intravenous attempts
- Patient is unresponsive to verbal stimuli/unconscious **AND** has one of the following:
  - Cardiac arrest
  - Impending arrest
  - Shock

### APPROVED I.O. SITES:

- Proximal medial tibia
- Distal tibia (medial malleolus)
- Proximal Humerus

### CONTRAINDICATIONS

- Infection at the site selected for insertion (choose alternate site)
- Fracture of the bone selected for IO infusion (choose alternate site)
- Excessive tissue preventing identification of landmarks (choose alternate site)
- Previous significant orthopedic procedures. (IO within 24 hours, prosthesis- choose alternate site)

### EQUIPMENT:

- EZ-IO Driver
- EZ-IO needle set
- 10 ml syringe
- Normal Saline IV solution, regular IV tubing
- Tape
- Skin prep pad
- Sterile gloves
- Dressing

### PROCEDURE:

1. Select appropriate insertion site
2. Prepare insertion site using aseptic technique
3. Identify Landmarks:
  - i. **Proximal Tibia:** Palpate tibial tuberosity, move (2) fingers below and medial to it
  - ii. **Distal Tibia:** Palpate medial malleolus move fingers two (2) finger width above it (inside ankle bone)
  - iii. **Proximal Humerus:** Adduct arm (humerus against body) with the elbow at 90 degrees, the hand on the umbilicus, and the elbow resting on ground or stretcher. Palpate the mid-shaft humerus



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continuing proximally toward the humeral head identifying a small protrusion, the greater tuberosity insertion site.

4. Prepare the EZ-IO driver and appropriate needle set.
5. Stabilize site and insert appropriate needle set.
6. Drill until loss of resistance is felt.
7. Remove EZ-IO driver from needle set while stabilizing catheter hub
8. Remove stylet from catheter.
9. Confirm placement by attempting to aspirate bone marrow or blood
10. Flush with 10 ml of normal saline
11. Assess for signs of infiltration
12. Begin utilizing pressure bag for infusion if IO flushes easily and no infiltration
13. Dress site, secure tubing
14. Monitor EZ-IO site for swelling
15. **MAXIMUM 2 ATTEMPTS (2<sup>ND</sup> ATTEMPT MUST BE AT ALTERNATE SITE)**