

Southern Illinois Regional EMS System

II-9 EZ-IO®45mm, EZ-IO®25mm, EZ-IO®15mm Procedures

Indications:

- EZ-IO 45mm (excessive tissue), EZ-IO 25mm (40kg and greater), EZ-IO 15mm (3-39kg)
- Intravenous fluids or medications are needed and a peripheral IV cannot be established in 2 attempts or 90 seconds
- AND the patient exhibits one or more of the following:
 - An altered mental status
 - GCS of 8 or less
 - Respiratory compromise
 - SaO₂ 80% after appropriate oxygen therapy
 - Respiratory rate < 10 or > 40 min.
 - Hemodynamic instability, systolic BP < 90

EZ-IO use may be considered PRIOR to peripheral IV attempts in the following situations:

- Cardiac arrest (medical or traumatic)
- Profound hypovolemia with alteration of mental status
- Patient in extreme distress with immediate need for delivery of medications and/or fluids

Contraindications: (If contraindications found, consider alternate sites)

- Fracture of the bone selected for IO infusion
- Excessive tissue at insertion site with the absence of anatomical landmarks
- Previous significant orthopedic procedures
- IO within 24 hours
- Prosthetic limb or joint
- Infection at the site selected for insertion

Considerations:

- Due to the anatomy of the IO space you will note flow rates to be slower than those achieved with IV catheters
- Ensure the administration of an appropriate rapid syringe bolus (flush) prior to infusion
 - NO FLUSH = NO FLOW
- Rapid syringe bolus (flush) the EZ-IO 45mm/EZ-IO 25mm with 10 ml of normal saline
- Rapid syringe bolus (flush) the EZ-IO 15mm with 5 ml of normal saline
- Repeat syringe bolus (flush) as needed
- To improve continuous infusion flow rates always use a syringe, pressure bag or pump
- Pain: Insertion of an EZ-IO intraosseous needle in conscious patients has been noted to cause mild to moderate discomfort (usually no more painful than a large bore IV).
 - IO Infusion for conscious patients has been noted to cause severe discomfort
- Prior to IO syringe bolus (flush) or continuous infusion in alert patients
 - SLOWLY administer Lidocaine 2% (Preservative Free) through the EZ-IO hub.
 - Adult EZ-IO administration: Slowly administer **Lidocaine 2% (20mg)**
 - Pediatric EZ-IO administration: Slowly administer **Lidocaine 2% (0.25mg/kg)**

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Precautions:

- The EZ-IO intraosseous infusion system is not intended for prophylactic use
- The humeral head insertion site is approved for adult use only

Equipment:

- EZ-IO Driver
- EZ-IO 45mm, EZ-IO 25mm, or EZ-IO 15mm Needle Set
- Alcohol or Betadine Swab
- EZ-Connect® or Standard Extension Set
- 10 ml Syringe
- Normal Saline (or suitable sterile fluid)
- Pressure Bag or Infusion Pump
- 2 % Lidocaine (preservative free)
- EZ-IO identification wristband

Procedure:

- If the patient is conscious
 - Advise of EMERGENT NEED for this procedure
 - Obtain informed consent
- Wear approved Body Substance Isolation Equipment (BSI)
- Determine EZ-IO 45mm, EZ-IO 25mm, or EZ-IO 15mm Indications
- Rule out contraindications
- Locate appropriate insertion site
- Prepare insertion site using aseptic technique
- Prepare the EZ-IO driver and appropriate needle set
- Stabilize site and insert appropriate needle set
- Remove EZ-IO driver from needle set while stabilizing catheter hub
- Remove stylet from catheter, place stylet in shuttle or approved sharps container
- Connect primed EZ-Connect® or extension set
 - If placement is in conscious patient, use Lidocaine to prime the extension set.
 - Confirm placement by aspirating blood/marrow
- Slowly administer appropriate dose of Lidocaine 2% (Preservative Free) IO to conscious patients
- Syringe bolus (flush) the EZ-IO catheter with the appropriate amount of normal saline.
- Utilize pressure (pressure bag or infusion pump) for continuous infusions where applicable
- Begin infusion
- Dress site, secure tubing and apply wristband as directed
- Monitor EZ-IO site and patient condition

NOTE: Ensure the depth measuring ring is visible on the EZ-IO needle after insertion through skin, with the distal tip of the needle resting on the bone. If not, use the next larger sized needle.