

SANTA BARBARA COUNTY EMERGENCY MEDICAL SERVICES AGENCY

INTRAOSSEROUS (IO) VASCULAR ACCESS**Attachment B - TIBIAL IO INSERTION**

I. Proximal Tibia Procedure – Indicated for patients weighing ≥ 3 kg

- A. Extend the patients targeted leg until it is fully extended, and accessible for procedure.
- B. Locating the Insertion Site
 1. Adult Placement:
 - a. Insertion site is approximately 2cm medial to the tibial tuberosity, or approximately 3cm below the patella and approximately 2cm medial, along the flat aspect of the tibia ([See Figure 1](#)).
 2. Pediatric Placement (weighing ≥ 3 kg):
 - a. Pinch the tibia between your fingers to identify the medial and lateral borders.
 - b. Insertion site is approximately 1cm medial to the tibial tuberosity (just below the patella, approximately 1cm) and slightly medial (approximately 1 cm), along the flat aspect of the tibia ([See Figure 2](#)).
- C. Insertion of the Tibial IO
 1. Aim the needle set at a 90-degree angle to the flat aspect of the tibia.
 2. Push the needle set tip through the skin until the tip rests against the bone.
 - a. **The 5 mm mark must be visible above the skin for confirmation of adequate needle set length.**
 3. Drilling Technique
 - a. Adults: Gently drill into the tibia approximately 1-2cm after entry into the medullary space or until the needle set hub is close to the skin.
 - b. Pediatrics: Gently drill, immediately release the trigger when you feel the loss of resistance as the needle set enters the medullary space; avoid recoil – do NOT pull back on the driver when releasing the trigger.
 4. Carefully remove the IO needle. The catheter should feel firmly seated in the bone.
- D. Securing the IO and Disposal of Used Equipment
 1. Safely discard the used IO needle in the sharps container, and discard any equipment/supplies in the corresponding biohazard container.
 2. Secure the device in place using the EZ-IO® Stabilizer and
 - a. Use a longboard or sling to further immobilize the extremity prior to transport.
 3. Attach appropriate saline lock and/or Normal Saline bag with primed IV tubing.
 - a. Ensure that pressure bag is located on Normal Saline bag.
 - b. Aspirate for blood/bone marrow
 - i. Inability to withdraw/aspirate blood from the catheter hub does not mean the insertion was unsuccessful.
 - c. Flush with 5-10mL of Normal Saline.
 4. Safely discard the used IO needle in the sharps container, and discard any equipment/supplies in the corresponding biohazard container.
- E. Prehospital personnel cannot remove Tibial IO once it has been inserted into the bone, unless otherwise directed by Base Hospital Physician.

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II. Reference Diagrams

Figure 1: Tibial IO Insertion Site - Adult

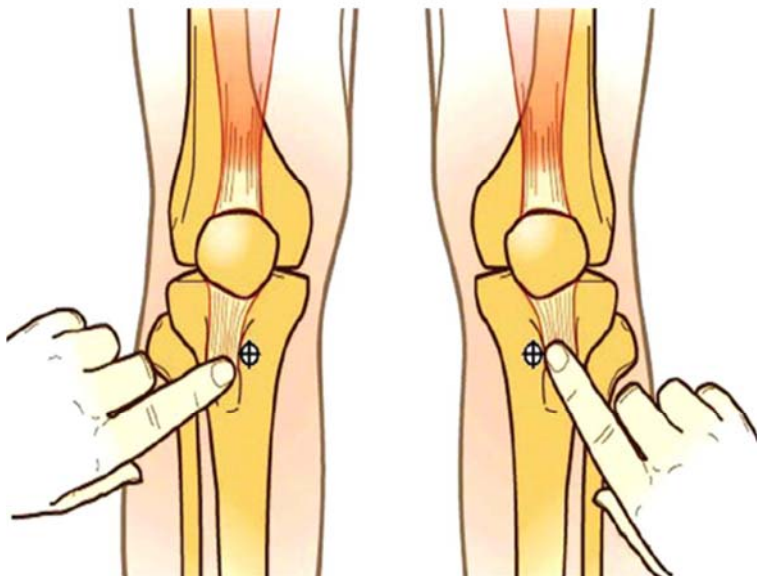


Photo Credit: Vidacare Corporation®

Figure 2: Tibial IO Insertion Site – Pediatric



Photo Credit: Teleflex Incorporated®