



Pediatric IO Vascular Access

OBJECTIVE

- Demonstrate the proper procedure technique to gain intraosseous access with an intraosseous (IO) device.

REFERENCE

- *PHTLS: Prehospital Trauma Life Support, 9th Edition*

EVALUATION

- The instructor will verify the accuracy of the student's ability to correctly gain intraosseous access with an IO device.

EQUIPMENT

- Personal protective equipment (PPE)
- IO device
- IO trainer
- Betadine/alcohol prep
- Syringe
- Saline
- Extension tubing

INSTRUCTOR GUIDELINES

1. Ensure that each student has all required materials.
2. Read the objective and the evaluation statement to students.

PERFORMANCE STEPS

1. Verbalize and/or demonstrate appropriate infection control precautions.
2. Verbalize indications and contraindications.
 - a) Indications for use:
 - For pediatric patients, any time vascular access is difficult to obtain in emergent, urgent, or medically necessary situations

and access will be necessary for up to 24 hours

b) Contraindications for use:

- Fracture of the targeted bone
 - Previous, significant orthopedic procedures at the insertion site (e.g., a prosthetic limb or joint)
 - IO in the targeted bone within the past 48 hours
 - Infection at the area of insertion
 - Excessive tissue or absence of adequate anatomical landmarks
 - Available patent IV line
3. Gather and prepare equipment.
 4. Verbalize at least two anatomic sites.
 5. Using the IO trainer, identify and cleanse the insertion site.
 6. Ensure that the needle set and driver are seated.
 7. Remove the needle safety cap from the device.
 8. Position the needle at a 90-degree angle to the bone.
 9. Ensure that the needle rests against the bone with at least 5 mm of visible catheter.
 10. Engage the driver trigger and apply firm, steady, downward pressure until entering the medullary space (decreased resistance).
 11. Hold the hub in place while removing the power driver.
 12. Remove the stylet and confirm catheter stability.
 13. Attach the extension set to the hub's luer lock.
 14. Aspirate blood/bone marrow for confirmation.
 15. Flush with 10 mL of normal saline.
 16. Stabilize and monitor site for signs of displacement and/or complications.
 17. For responsive patients, consider anesthetic agent.
 18. Connect fluids and use pressure bag as needed

CRITICAL CRITERIA

- The student fails to recognize the indications for IO insertion and does not select an appropriate insertion site.
- The student does not identify contraindications for IO placement.
- The student fails to ensure 5-mm catheter remains visible after needle touches bone.
- The student fails to properly dispose of sharps.
- The student does not flush the catheter with 10 mL normal saline.
- The student contaminates the insertion site or fails to correct contamination if it occurs.