

	C04 – EZ IO® INSERTION	
	All ages	RESUSCITATION
Version date: 2023-08-14		Effective date: 2024-02-13 (0700 hours)

INDICATIONS
<ul style="list-style-type: none"> • ICP only: Critically ill or injured patient in whom vascular access cannot be obtained, or is anticipated as unlikely to be obtained, within 60 seconds or with two attempts

CONTRAINDICATIONS
<ul style="list-style-type: none"> • Bone fracture near or proximal to site in consideration • Intraosseous (IO) placement at same site within 72 hours • Burn (relative) or overlying infection at site in consideration • Landmarks cannot be adequately localized • Osteogenesis Imperfecta

QRG: INSERTION SITES & NEEDLE LENGTH		
	Patient weight (kg)	Needle length (mm)
72 HOURS UP TO 10 YEARS: Proximal humerus; proximal tibia; distal tibia; distal femur	3 to 39	15 (pink hub)
	> 40	25 (blue hub)
10 YEARS & OLDER: Proximal humerus; proximal tibia; distal tibia	> 40 & extra tissue depth	45 (yellow hub)

NOTES

1. Except for medications that are required to save life, limb, or vital function, intraosseous (IO) access should not be established solely to administer medication.
2. Any medication in the ERS formulary that can be administered by the intravenous (IV) route can be given through an IO device.
3. Select the best insertion site and appropriate needle length based on the patient's weight and anatomy (QRG).
4. Position and stabilize the limb.
5. Using strict sterile technique to prepare the insertion site.
6. Pierce the skin and insert the needle into tissue. Confirm that the 5 mm mark is visible above the skin. If the mark is not visible, use the next larger needle length.
7. Using minimal pressure, drill the needle into bone.
8. Once inserted, stabilize the hub, and remove the driver.
9. Aspirate using a sterile syringe. Return of bone marrow confirms correct intramedullary needle tip placement, while the absence of marrow does not rule out correct placement.
10. Flush with the age-appropriate volume of sterile saline and watch for evidence of fluid extravasation.
 - Adults & adolescents - 5 to 10 ml
 - Infants & children - 2 to 5 ml
11. If fluid extravasation occurs, do not use this site but leave the device secured in place.
12. Apply the IO stabilizer and attached a primed extension set. Immobilize the limb for humerus and femur insertions.
13. Assess the site every 15 minutes to ensure the device remains secure and there are no signs of extravasation.
14. If the fluid flow subsequently slows or stops, repeat irrigation with sterile saline as noted in #10 above. If the device does not irrigate properly or there appears to be fluid extravasation, discontinue use but leave the device secured in place.
15. Serious injury, including compartment syndrome, may occur due to extravasation of fluid or medications into the surrounding tissues because of incorrect placement (either too deep or not deep enough). Secondary extravasation may result from increased intramedullary pressure from a high rate of infusion or due to a large infused volume.
16. **INTRAOSSEOUS LIDOCAINE:** In a conscious patient, consider the instillation of preservative-free 10 mg/ml (1%) or 20 mg/ml (2%) lidocaine to provide analgesia from the discomfort of infusion.
 - Infuse lidocaine into the device over 60 seconds
 - Allow to dwell for 120 seconds
 - Flush with 2.5 to 10 ml of sterile saline ¹⁰
 - If pain relief is not adequate within 5 minutes, repeat with half dose
 - Repeat every 45 minutes as required

10 YEARS & OLDER: 50 mg

UP TO 10 YEARS: 0.1 mg/kg (single maximum dose = 50 mg)

**Cumulative maximum dose:
3 mg/kg per hour**

LINKS

M25 - INTRAOSSEOUS LIDOCAINE

APPROVED BY

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VERSION CHANGES (refer to X03 for change tracking)

- Work scope indicator moved out of header