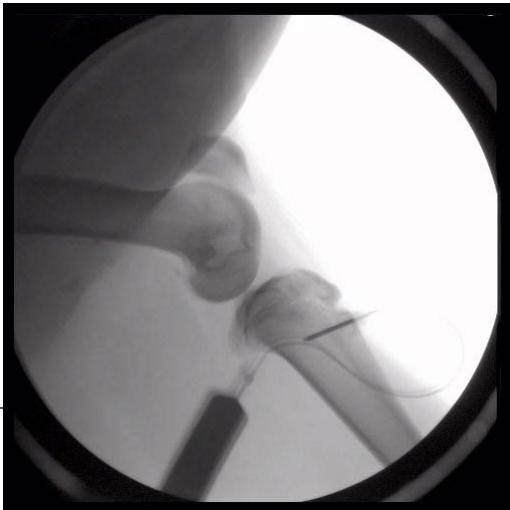


The 5 Rights of Intraosseous Vascular Access



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Immediate Vascular Access...
When You Need It Most

Who Needs an IO?



- **Adults**

For intraosseous access anytime in which vascular access is difficult to obtain in emergent, urgent or medically necessary cases.

- Proximal humerus
- Proximal tibia
- Distal tibia

- **Pediatrics**

For intraosseous access with emergent patients where vascular access is difficult

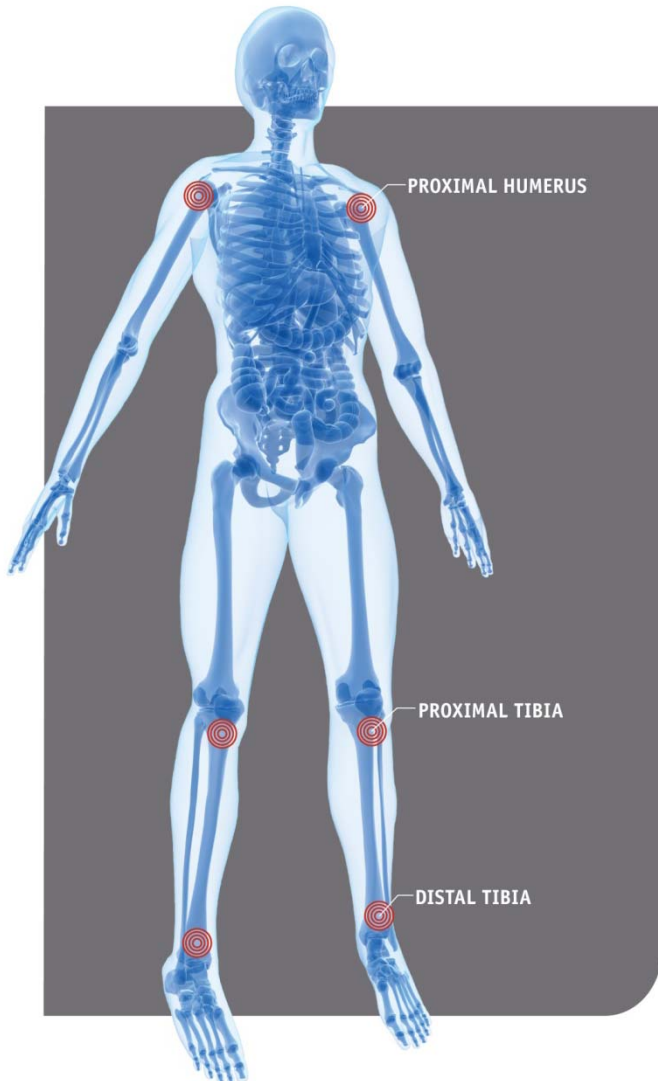
- Proximal tibia
- Distal tibia

Proximal humerus can be used in patients when the landmarks can be clearly identified

The 5 Rights of the EZ-IO



1. The Right Site
2. The Right Needle
3. The Right Lidocaine Administration
4. The Right Flush
5. The Right Amount of Pressure



The Right Site

EZ-IO is FDA cleared for:

- Proximal humerus
- Proximal tibia
- Distal tibia

Site selection is dependent upon:

- Absence of contraindications
- Accessibility of the site
- Ability to monitor and secure the site
- Desired flow rates



The Right Needle

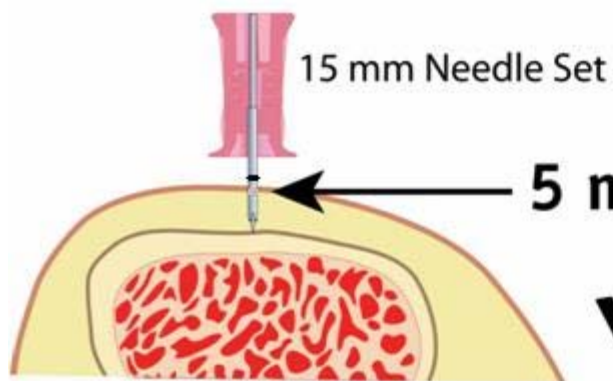
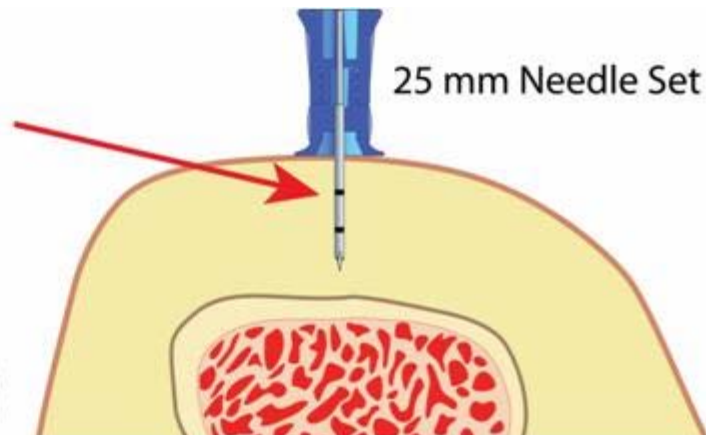
Selection based on:

- Weight Range (3-39kg 15mm, ≥ 40 kg 25mm or 45mm)
- Soft tissue depth estimated by using your finger
- Visualization of the 5mm mark after penetration of the skin
- The 45mm needle should be considered for all adult proximal humerus insertions
- Special situations
 - Excessive soft tissue
 - Excessive muscle tissue
 - Edema

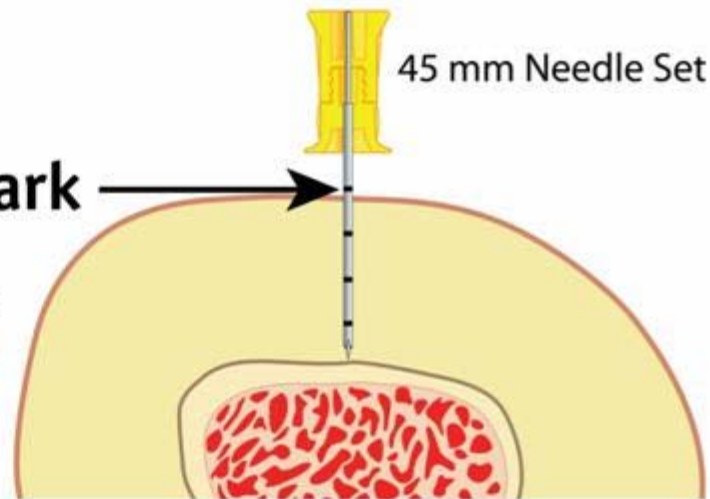
Note that the 5 mm mark is **NOT** visible above the skin

Size matters!

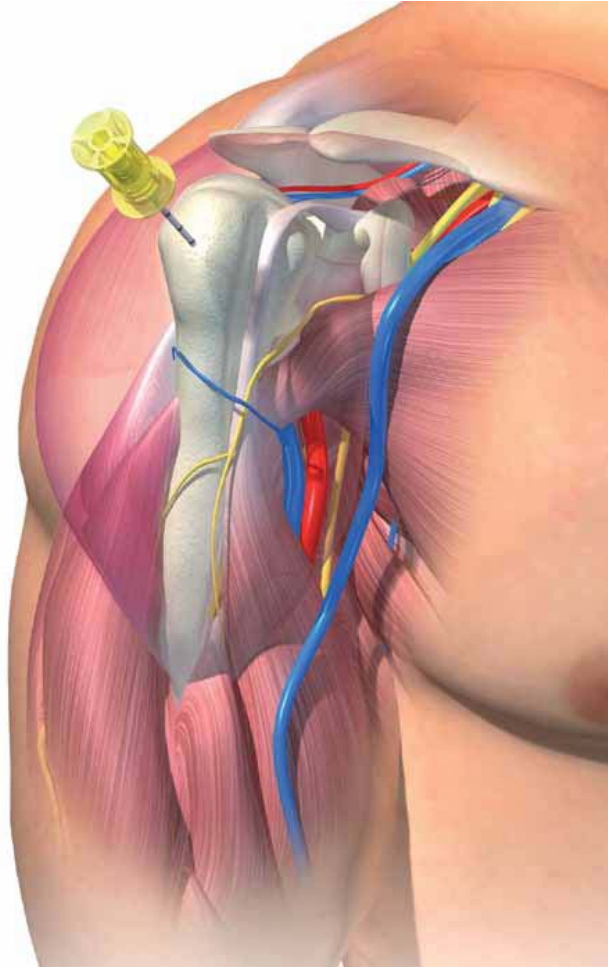
NO



YES



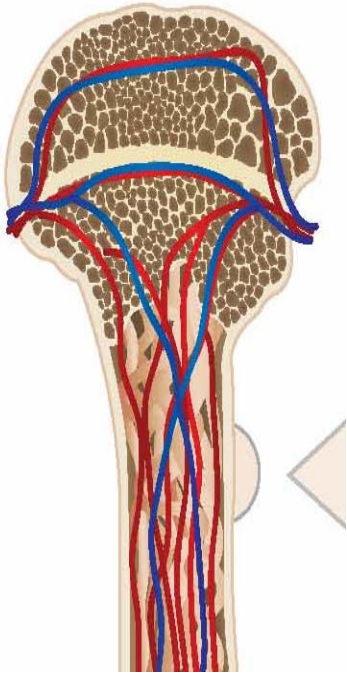
Consider adipose or muscle tissue thickness PRIOR to bone insertion



Proximal Humeral Insertion

- 45mm needle set should be used for all adult proximal humeral placements
- Place the patient's hand over the umbilicus
- Adduct the arm
- Identify the proximal humerus
- Identify insertion site
- Immobilize arm to prevent movement above the level of the shoulder
- Place EZ-Stabilizer to prevent accidental dislodgement

Intraosseous Usage and Pain



The intraosseous space:

- Contains a matrix of blood vessels and nerves
- **Vessels** allow rapid distribution of fluids and medications
- **Nerves** (sensory receptors) register pressure variations within the medullary space
- Increased pressure results in visceral pain for responsive patients

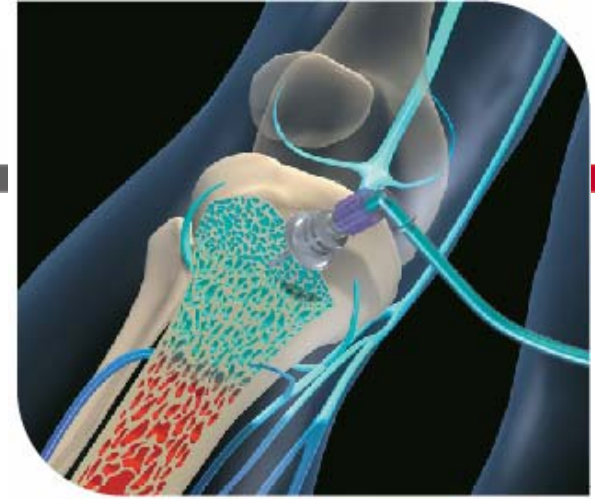
Lidocaine inhibits stimulation of the sensory receptors

The Right Lidocaine Administration

- Ensure the patient does not have an allergy or contraindication to lidocaine
- Prime the extension set with lidocaine
- Local anesthetics must be administered very slowly until the desired anesthetic effect is achieved (15-30 sec/ml)
- Allow 15-30 seconds for anesthetic effect, following administration of prescribed dose
- Repeat as needed for pain management
- Do not exceed 3mg/kg/24hr



****Medical Director must authorize appropriate dosage range***



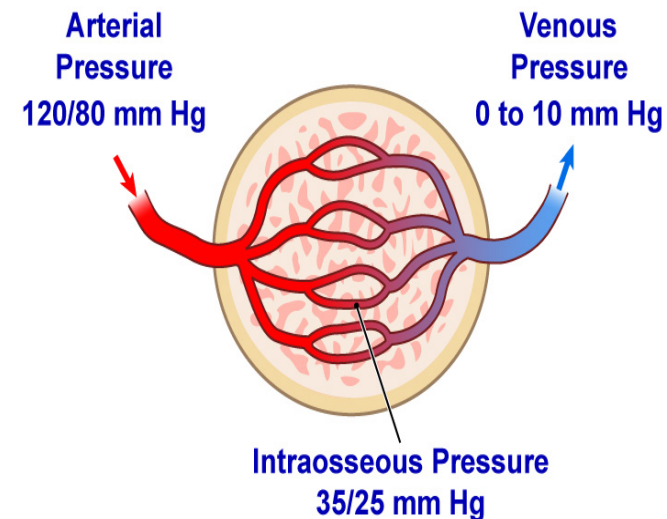
The Right Flush

- The IO space is filled with a thick fibrin mesh
- The medullary space must be pressure flushed to obtain maximum flow rates
- 10ml of normal saline is required for initial bolus
- More than one flush may be required to achieve maximum flow rate
- Prime and use extension set
- **Reminder: Patients responsive to pain usually require lidocaine PRIOR to syringe flush**

No Flush = No Flow

The Right Amount of Pressure

- The pressure in the medullary space is approximately 1/3 of the patients arterial pressure
- For aggressive fluid resuscitation regulate volume infused:
 - Adults – pressure bag inflated to 300mmHg
 - Peds – syringe boluses
- Patient condition should be taken into account when considering the amount of volume to be delivered



Deliver fluids under pressure to obtain maximum flow rates

New Product Packaging

NEW!
Needle Set
Packaging

Everything you need in a smaller, more convenient package.



previous packaging size

Less = More!

QUESTIONS?

Please review "Directions For Use" before using the EZ-IO