

Clinical Resource: Proximal Humerus

Arrow EZ-IO Intraosseous Vascular Access System

The EZ-IO System is:

- **Safe:** <1% serious complication rate³
- **Fast:** Achieves vascular access within 10 seconds⁴
- **Effective:** 97% first-attempt access success rate⁵
- **Versatile:** Can be placed by any qualified healthcare provider if it is determined by regulation, position statement or decision-making model to be within that professional's scope of practice
- **Convenient:** Requires no additional equipment or resources⁶

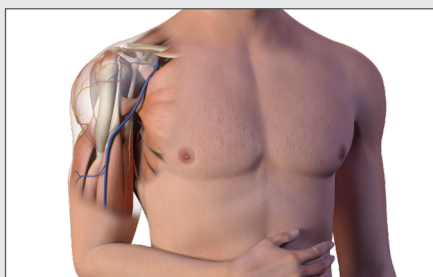
Advantages of proximal humerus site include:

- Average flow rate of 105 ml/min via proximal humerus under pressure^{+,+,1}
- Just 3 seconds to reach the heart with medication or fluid^{+,2}
- Lower insertion and infusion pain^{+,+,+,7}
- Less medication for pain management^{+,+,+,7}

+ Based on Adult Proximal Humerus data

++ Based on 300mmHg of pressure

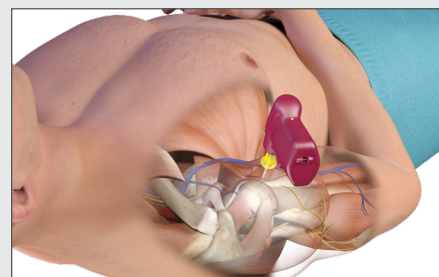
+++ Compared to EZ-IO System tibial insertions



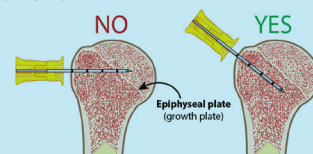
Place the patient's hand over the abdomen (elbow adducted and humerus internally rotated).



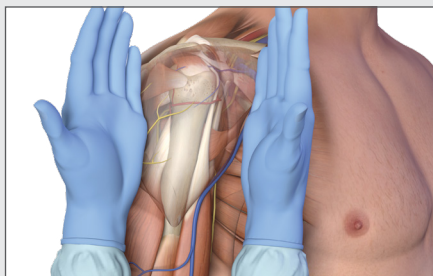
To landmark the proximal humerus, place your palm on the patient's shoulder anteriorly. Palpate the greater tubercle by letting it sink into the palm of your hand. The area that feels like a "ball" under your palm is the general target area.



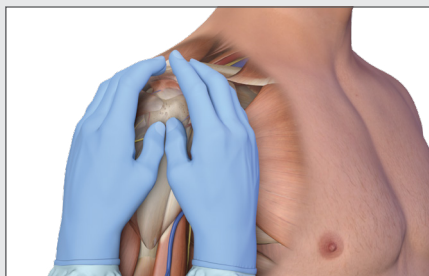
Point the needle set tip at a 45-degree angle to the anterior plane and posteromedial.



If further confirmation of landmarking is required, follow the steps below.

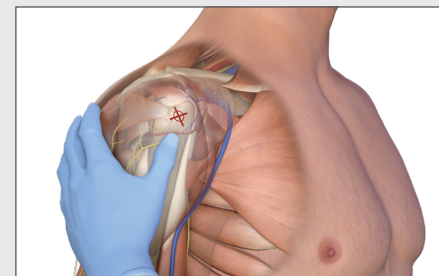


Place the ulnar aspect of one hand vertically over the axilla. Place the ulnar aspect of the opposite hand along the midline of the upper arm laterally.



Place your thumbs together over the arm.

- This identifies the vertical line of insertion on the proximal humerus.



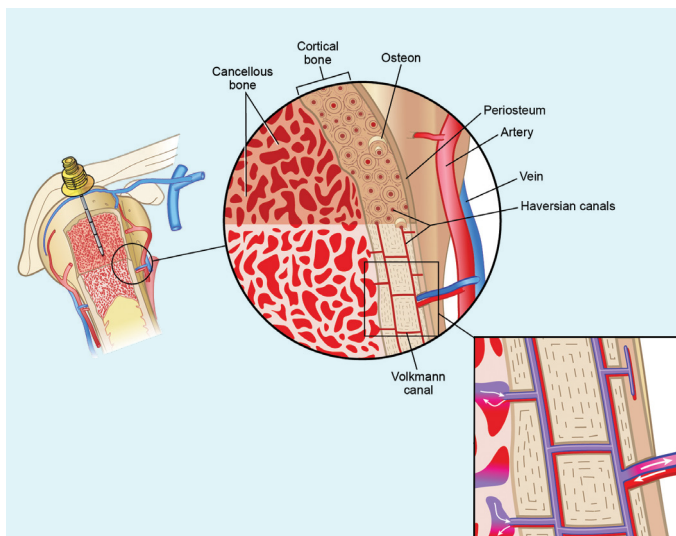
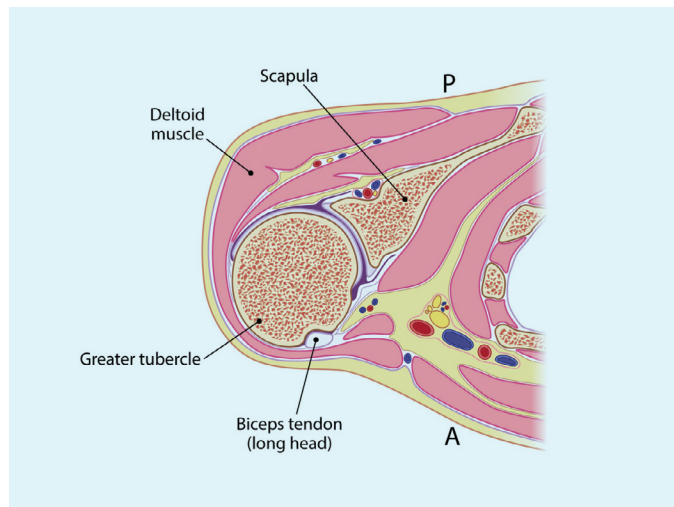
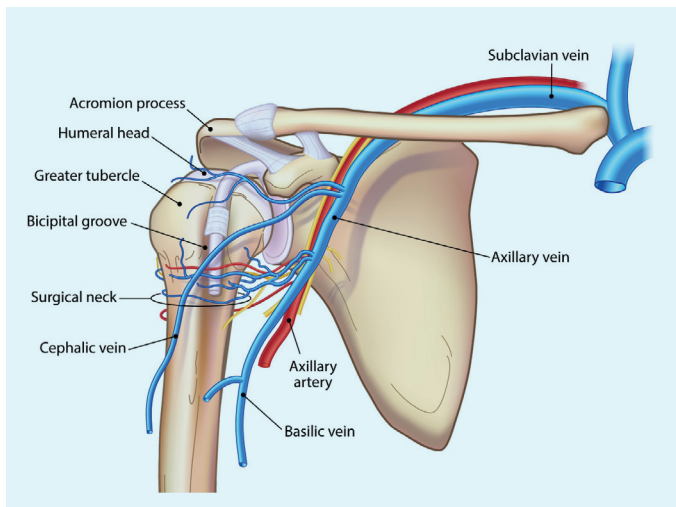
Palpate deeply as you climb up the humerus to the surgical neck.

- It will feel like a golf ball on a tee – the spot where the "ball" meets the "tee" is the surgical neck.


The insertion site is on the most prominent aspect of the greater tubercle, 1 to 2 cm above the surgical neck.




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Proximal Humerus Anatomy



- 1 Puga T, Montez D, Philbeck T, Davlantes C. Adequacy of Intraosseous Vascular Access Insertion Sites for High-Volume Fluid Infusion. *Crit Care Med* 2016; 44(12):143. Research sponsored by Teleflex Incorporated.
- 2 Montez D, Puga T, Miller LJ, et al. Intraosseous Infusions from the Proximal Humerus Reach the Heart in Less Than 3 Seconds in Human Volunteers. *Annals of Emergency Medicine* 2015;66(4S):S47. Research sponsored by Teleflex Incorporated.
- 3 Teleflex Internal Data on File 2018
- 4 Davidoff J, Fowler R, Gordon D, Klein G, Kovar J, Lozano M, Potkya J, Racht E, Saussy J, Swanson E, Yamada R, Miller L. Clinical evaluation of a novel intraosseous device for adults: prospective, 250-patient, multi-center trial. *JEMS* 2005;30(10):s20-3. Research sponsored by Teleflex Incorporated.
- 5 Cooper BR, Mahoney PF, Hodgetts TJ, Mellor A. Intra-osseous access (EZ-IO) for resuscitation: UK military combat experience. *J R Army Med Corps.* 2007;153(4):314-316.
- 6 Dolister M, Miller S, Borron S, et al. Intraosseous vascular access is safe, effective and costs less than central venous catheters for patients in the hospital setting. *J Vasc Access* 2013;14(3):216-24. doi:10.5301/jva.5000130. Research sponsored by Teleflex Incorporated.
- 7 Philbeck TE, Miller LJ, Montez D, Puga T. Hurts so good; easing IO pain and pressure. *JEMS* 2010;35(9):58-69. Research sponsored by Teleflex Incorporated.

EZ-IO Power Driver		ARROW	
	REF.		QTY
	9058	EZ-IO Power Driver	1

EZ-IO Needle and Stabilizer		ARROW	
	REF.		QTY
	9079P-EU-005	45 mm needle + stabilizer	5
	9001P-EU-005	25 mm needle + stabilizer	5
	9018P-EU-005	15 mm needle + stabilizer	5

Each set includes a 15 G. sterile EZ-IO Needle Set, EZ-Stabilizer Dressing, EZ-Connect Extension Set, EZ-IO Patient Wrist Band and NeedleVISE 1 Port Sharps Block.

 Learn more at [ARROWEZIO.com](https://www.arrowezio.com)

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