

## Intra-Osseous Access in Adults: An Indispensable Tool



Intra-osseous (IO) infusion is an indispensable tool in life-threatening situations that can be learned quickly and easily, according to a systematic review published in [Critical Care](#).

The review, by Franck Petipas, MD, of the Department of Anesthesiology and Intensive Care and the Laboratory of Anatomy, Biomechanics and Simulation, University Hospital of Poitiers, France, and colleagues, outlines the evidence for IO infusion use in adults, its contraindications, available devices and ways to learn the skills.

When peripheral intravenous access is difficult, IO infusion may be indicated in adults who need fluids and medications administered during initial resuscitation. Although the technique was first used in the 1930s, only in the last 10 years has the technique been recommended in adults in the 2005 American Heart Association guidelines for cardiopulmonary resuscitation and emergency cardiovascular care for adults, note the reviewers.

See Also: [Intraosseous Access Training with Tea and Cake](#)

The reviewers note several advantages of IO infusion:

- Shorter time compared to central venous catheter or ultrasound-guided peripheral venous catheter insertion in an emergency;
- More likely to be successful on the first attempt;
- Does not require stopping of cardiopulmonary resuscitation.

The article includes a description of available manual and semi-automatic devices, and lists the main contraindications, signs that indicate correct placement, flow rates available and key drugs and fluids available by IO access.

The reviewers conclude that IO infusion should be used in critical situations when easy access to the peripheral veins is not possible. They note that contraindications are few and that complications are rare, mostly occurring with prolonged use. IO infusion can be used to sample blood and to administer nearly all fluids and medications, with a bioavailability close to the intravenous route.

The reviewers recommend that physicians working in ICUs or the ED learn how to insert and maintain intra-osseous catheters and be aware of the contraindications.

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Published on : Tue, 19 Apr 2016