

**Classification**

Local Anesthetic

**Prehospital Indications**

Multiple provider impressions: patients responsive to pain that have intraosseous (IO) access

**Other Common Indications**

Topical, transmucosal or intradermal anesthesia  
Ventricular arrhythmias refractory to other treatments

**Adult Dose**

**2% 40mg slow IO push over 2 minutes**; may give second dose of 20 mg x1 prn

**Pediatric Dose**

**2% 0.5mg/kg (20mg/mL) slow IO push over 2 minutes**, dose per [MCG 1309](#), not to exceed adult dose;  
may repeat second dose at half the initial dose x1 prn

**Mechanism of Action**

Inhibits sodium ion channels, stabilizing neuronal cell membranes causing a nerve conduction blockage

**Pharmacokinetics**

Onset is 2 min; peak in 3-5 min; duration is 10-20 min

**Contraindications**

None, when used for anesthesia in IO placement

**Interactions**

No significant interaction at therapeutic doses for IO placement. In larger doses, multiple interactions possible including potentiation of fentanyl and amiodarone.

**Adverse Effects**

None for IO use, high doses have been associated with increased risk of seizure

**Prehospital Considerations**

- This should be given pre-infusion if IV fluids or infusion of other medications through the IO on patients that are responsive to pain.
- Lidocaine 2% (preservative and epinephrine free) should be used.
- Slow infusion is necessary to ensure the lidocaine remains in the medullary space.
- A base order is not needed to administer lidocaine as part of the IO procedure.