**FACT SHEET**

**Buffered Lidocaine**

Double-blinded randomized experimental trials have demonstrated buffering acidic lidocaine to a neutral pH greatly reduces the pain of infiltration of the local anesthetic (McKay, Christoph).

Buffered Lidocaine probably has a higher bioavailability then lidocaine with a higher acidity, due to more lidocaine in the uncharged form (Christoph)

Commercially available lidocaine solutions are acidic with a pH of approximately 6 to increase stability for a longer shelf-life. Adding 1 mL of 8.4% sodium bicarbonate (1 mEq/mL) to 10 mL of lidocaine raises the commercial solution’s pH to a neutral 7.2-7.4 (Christoph, McKay). When stored in polypropylene syringes at 5°C and protected from light, for example in an emergency department medication refrigerator, buffered lidocaine is stable for at least 28 days (Pascuet).

**Buffered Lidocaine in venipuncture**

Buffered 1% lidocaine injected subcutaneously by a 30-gauge needle makes venous catheter insertion nearly painless for many (McNaughton, Jimenez, Lunoe, Klein). Care should be taken to assure the lidocaine is infused up to the vein to block the nociceptors in the vein wall. This technique was found significantly more effective than topical lidocaine cream in an experimental trial in adults (McNaughton) but similar to the cream in a clinical trial in children (Luhmann). Some children demonstrate distress when this technique is used, perhaps because of fear of needles or the lidocaine did not reach the vein wall. Distraction is a useful adjunct to decrease anxiety during this technique

**References**

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