Topical Anesthesia Tips

Cream-based topical anesthetics are the most studied form of effective pain relief when time permits. Here are some tips:

LMX-4® is a liposomal delivery system allowing a 4% lidocaine preparation to be rapidly absorbed. While lacking a specific FDA indication for needle pain, it is widely used and as effective in 30 minutes as EMLA is in 60 minutes. Taddio et al demonstrated improved cannulation success and pain relief in a pediatric ED using LMX-4 for venipuncture.

EMLA will vasoconstrict for the first hour; pain relief begins around 45 minutes, deepening to 0.6cm over the next 3 hours. At 1.5 hours vasodilation begins, improving venipuncture success.

Consider Glad® Press-N-Seal as a less painful occlusive dressing option!

A less messy twist on the topical cream is a newer product Synera® which contains 70 mg tetracaine and 70 mg lidocaine mixed in a self heating patch recommended for children 3 years and older. The heating element enhances absorption, giving efficacy in 20 minutes, and results in some vasodilation.

When time doesn't permit, Buzzy® works in about 15 seconds. The AAA batteries last about 8 hours, so with Blue Gel Wings the cost averages about $0.09/3 minute stick; add 20 cents for White Ice Wings if you plan to throw them away.

	EMLA	LMX-4	Synera	BUZZY®
Prep time (min)	60	20-30	20	1
Hassle	***	***	*	**
Duration	4h	1h	3h	Contact
Vasoconstriction	Y	N	N	N
Issues	Methemoglobinemia, rare purpura	Tegaderm removal pain	Patch may burn, danger if chewed	Vibration may tickle
Cost per site	$5-7	$5-7	$12	$0.09

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The assessment and management of acute pain in infants, children, and adolescents. *Pediatrics.* Sep 2001;108(3):793-797.; Zempsky WT. Pharmacologic approaches for reducing venous access pain in children. *Pediatrics.* Nov 2008;122 Suppl 3:S140-153.; Baxter AL, Leong T, Mathew B. External thermomechanical stimulation versus vapocoolant for adult venipuncture pain: pilot data on a novel device. *Clin J. Pain.* 2009 Sept/Oct (in press); Baxter AL, Cohen LL. A Randomized Clinical Trial of a Novel Vibrating Tourniquet to Decrease Pediatric Venipuncture Pain. *National Conference and Exhibit AAP October 2009*; Eichenfield LF, Funk A, Fallon-Friedlander S, Cunningham BB. A clinical study to evaluate the efficacy of ELA-Max (4% liposomal lidocaine) as compared with eutectic mixture of local anesthetics cream for pain reduction of venipuncture in children. *Pediatrics.* Jun 2002;109(6):1093-1099; Taddio A, Soin HK, Schuh S, Koren G, Scolnik D. Liposomal lidocaine to improve procedural success rates and reduce procedural pain among children: a randomized controlled trial. CMAJ. Jun 21 2005;172(13):1691-1695; Sethna NF, Verghese ST, Hannallah RS, Solodiuk JC, Zurakowski D, Berde CB. A randomized controlled trial to evaluate S-Caine patch for reducing pain associated with vascular access in children. *Anesthesiology.* Feb 2005;102(2):403-408.