

## PAIN MANAGEMENT FOR IV INSERTION

AGE	Pain control measures for all patients (low risk)	Pharmacologic treatment
<p>&lt; 1 month or ≤ 1 month CGA</p>	<ul style="list-style-type: none"> <li>▪ Sucrose 24% solution and soother (highly effective for the young infant)                             <ul style="list-style-type: none"> <li>○ Contraindications:                                     <ul style="list-style-type: none"> <li>◆ Absent bowel sounds</li> <li>◆ NEC</li> <li>◆ Short Gut</li> <li>◆ GI surgery in last 5 days</li> </ul> </li> </ul> </li> <li>▪ Swaddling</li> <li>▪ Consider topical agent (EMLA in this age)</li> </ul>	<p>Rarely used in infant</p>
<p>1 - 4 months</p>	<ul style="list-style-type: none"> <li>▪ Sucrose 24% solution and soother (highly effective for the young infant)                             <ul style="list-style-type: none"> <li>○ Contraindications:                                     <ul style="list-style-type: none"> <li>◆ Absent bowel sounds</li> <li>◆ NEC</li> <li>◆ Short Gut</li> <li>◆ GI surgery in last 5 days</li> </ul> </li> </ul> </li> <li>▪ Swaddling</li> <li>▪ Topical Agent: Ametop or EMLA (wait time after application: 30-45 min for ametop; 45-60 min for EMLA);                             <ul style="list-style-type: none"> <li>○ Contraindications:                                     <ul style="list-style-type: none"> <li>◆ Need urgent access</li> <li>◆ Prone to methemoglobinemia (ie G6PD) - contraindication for EMLA</li> <li>◆ OR if inadequate time: lidocaine spray (1-3 minute wait time)</li> </ul> </li> </ul> </li> </ul> <p>NOTE: EMLA is safe even in term and preterm baby; ametop &gt; 1 month term &gt; 1 month CGA</p>	<p>Consider systemic pharmacologic agent if</p> <ul style="list-style-type: none"> <li>○ Difficult start and unable to appropriately immobilize;</li> <li>○ Needle phobia unresponsive to distraction;</li> <li>○ Unable to immobilize for start and &gt;6 months of age (CGA)</li> </ul> <p>MD order required.</p> <p>Tylenol: 15mg/ kg 30-45 minutes prior to procedure Ibuprophen: 10 mg/ kg 30-45 minutes prior to procedure</p> <p>Tylenol and/or ibuprophen may be used in addition to one of the following agents: (Effectiveness with acute, self-limited painful procedure is limited.)</p>
<p>4 mo- 6 years</p>	<ul style="list-style-type: none"> <li>▪ Distraction (age appropriate choice)                             <ul style="list-style-type: none"> <li>○ Vibration distractor</li> <li>○ Visual (distractor)</li> <li>○ Music</li> <li>○ Reading</li> <li>○ Bubbles/spinning wheel</li> </ul> </li> <li>▪ Possible swaddling</li> <li>▪ Topical Agent: Ametop or EMLA (wait time after application: 30-45 min for ametop; 45-60 min for EMLA);                             <ul style="list-style-type: none"> <li>○ Contraindications                                     <ul style="list-style-type: none"> <li>◆ Need urgent access</li> <li>◆ Prone to methemoglobinemia (ie G6PD) - contraindication for EMLA</li> <li>◆ OR if inadequate time: lidocaine spray (1-3 minute wait time)</li> </ul> </li> </ul> </li> </ul>	<p>Agents of Choice: (Sedation guideline to be followed including staff presence, monitoring, reversal agent preparation) **See inpatient sedation guideline for full range of sedation choices and dosing</p> <ul style="list-style-type: none"> <li>▪ Oral midazolam – 0.5 mg/kg (max 15 mg)                             <ul style="list-style-type: none"> <li>○ Only one dose in 2 hrs</li> <li>○ Give 20-30 minutes before IV attempt</li> </ul> </li> <li>▪ Intranasal midazolam 0.3 mg/ kg (max 5 mg)</li> <li>▪ Intranasal fentanyl 1.5 mcg/kg (max 100 mcg/dose)</li> </ul>
<p>&gt; 6 years</p>	<ul style="list-style-type: none"> <li>▪ Non-pharmacologic measures (all patients)                             <ul style="list-style-type: none"> <li>○ Breathing techniques</li> <li>○ Visual imagery</li> <li>○ Distraction – options listed above – choose age appropriate</li> </ul> </li> <li>▪ Topical Agent (as above for 6 mo – 6 years)</li> </ul>	

**Information about sucralose/tootsweet and topical agents:**

**SUCROSE:**

116 RCT's on healthy term, preterm and sick infants; used for single episode painful procedures. Conclusive reduction in behavioural responses in 93% of studies (of the 7 studies with no response, 3 involved eye exams, 1 circumcision, 2 with low sucrose % solutions). Most benefit for the youngest infants but 19 studies done in infants beyond newborn period and 12 showed reduced behavioural responses to pain with sweet solutions; 2 did not but used lower % solutions, and 5 less clear pain reduction responses.

**When to use:** Infants undergoing a procedure with potential for pain can benefit from Sucrose 24% as a pain management comfort measure. Examples of procedures: heel stick, venipuncture, tape removal & dressing changes, suctioning, eye exam, strenuous OT/ PT, circumcision, immunizations, and urinary catheterization.

**How to use:**

- Gather 24% sucrose solution and oral syringe or pacifier.
- Administer the dose by dipping pacifier in solution or give by syringe into side of mouth. The sucrose is absorbed via oral mucosa.
- Sucrose and non-nutritive sucking induces endogenous opioids, providing analgesia for approximately two minutes.
- Administer dose **within a 2 minutes of pending procedure for efficacy.** (Maximum dose is 2ml = 8 doses in 24 hours.)
- Giving sucrose may decrease cry duration, heart rate, facial grimacing and lower ratings on neonatal pain scales.

**TOPICAL ANALGESICS:**

**EMLA** – lidocaine (2.5%) and prilocaine (2.5%): multiple studies showing reduced pain including with IV starts, ie/ RCT 258 children with venipuncture and IV starts; subjective pain scores reduced with EMLA. One hour to peak effect; lasts 1-2 hours after cream removal. No contraindication for term or preterm baby.

Prolonged use may cause methemoglobinuria in susceptible children (ie G6PD, < 3 months);

**How to use:**

- Apply 1-2 g per 10 square cm of skin and cover with occlusive dressing for 45-60 min; max < 10 kg – 100 sq cm, 10-20 kg – 600 sq cm, > 20 kg – 2000 sq cm.

**Ametop** – tetracaine gel; several trials have shown equal efficacy to EMLA; longer duration of action (4-6 hours); skin erythema normal due to capillary dilatation;

Contraindicated: premature, Full term < 1 month, ester anesthetic allergy; tetracaine toxicity with large areas, ingestion, application to broken skin, rashes.

**Needle Free Lidocaine Delivery systems** – rapid (1-3 minutes), less consistent pain reduction but provides option for rapid requirement.