Winnipeg Regional Health Authority / Office régional de la santé de Winnipeg
Caring for Health / À l'écoute de notre santé

CLINCIAL PRACTICE GUIDELINE
CHILD HEALTH PROGRAM

Title: Pain Management for Needle Pain	**Approved By:** *Professional Advisory Committee*	**Approved Date:** *September 24, 2021*
Authorization Child Health Nursing Practice Committee Child Health Patient Care Teams Child Health Educator Group Child Health Standards Committee ECET Committee WRHA PAC	**Revised Dates**:	**Page:1**

1.0 PURPOSE:

1.1 To provide a process for the management of pain during minor painful procedures in pediatric patients (i.e. IV insertion, venipuncture, intramuscular injections, lumbar punctures, etc.).
Exception: This clinical practice guideline can be implemented in conjunction with narcotics, nerve blocks or any type of sedation to adequately treat pain. However, this guideline does not support or provide resources for narcotic, surgical procedures, continuous wound infusions, nerve blocks or procedural sedation management.

1.2 Early recognition is imperative for the success of providing pain relief for procedures. This will allow more time for consulting with Child Life Specialists (when available), using non-pharmacological interventions and providing pain relief through oral sucrose and/or topical anesthetics.

1.3 Topical anesthetic can reduce the pain associated with these interventions/treatments. A discussion with the patient and family prior to invasive procedures/treatment, will ensure that the most appropriate treatment be given in each individual situation.

1.4 This Clinical Practice Guideline gives the authority to implement the following care that falls within the nurse's scope of practice without a written physician order in the application of the following topical anesthetics:

- Ametop® (tetracaine 4%)
- EMLA® (lidocaine 2.5%/prilocaine 2.5%)
- Pain Ease® Spray (pentafluoropropane/tetrafluoroethane)

1.5 To provide registered nurses (RNs) and licensed practical nurses (LPNs) with consistent direction and guidance in the use of the Pain Management for Procedures in Pediatrics Nurse Decision Making Tool in the use/application of topical anesthetics to infants, children and youth prior to invasive interventions/treatment.
Note: Graduate and Student Nurses are not able to apply topical anesthetic creams without the supervision of a registered nurse or LPN.

1.6 This guideline does not support the practice of topical anesthetic creams to be applied for patients less than or equal to 37 weeks gestation. Seek guidance and consultation with the medical team or consult NICU to determine appropriate use.

1.7 For direction on administration of Oral Sucrose, refer to the Clinical Practice Guideline: HSC – Sucrose for Procedural Pain Relief in Infants

2.0 DEFINITIONS:

2.1 **Non-Pharmacological Interventions:** this includes (but is not limited to) comfort holds, positioning techniques, comfort items, distraction, breastfeeding infants, swaddling, heat and cold applications and massage.

2.2 **Oral Sucrose:** a mild sugar solution given orally to reduce pain from minor medical procedures in infants from birth to 1 year of age. Dandelion Kisses ® or TootSweet ® is sucrose (24% sugar) in commercially pre-packaged vials.

2.3 **Topical Anesthetics:** a preparation (usually of a cream or ointment consistency) which is applied

to the skin to numb the area; topical anesthetics are often used prior to non-invasive or minimally invasive procedures.

2.3.1 Ametop® (tetracaine 4%) gel

2.3.2 EMLA® (lidocaine 2.5%/prilocaine 2.5) cream

2.4 **Vapo-coolant:** a fast-acting spray that is used to rapidly anesthetize the epidermal layer of normal, intact skin and reduce pain.

2.4.1 Pain Ease Spray® (1,1,1 3,3 pentafluoropropane and 1,1,1,2 tetrafluoroethane)

2.5 **Pain Scale:** is a tool that the heath care provider uses to assist in determining a patient's level, duration and type of pain. Within the pediatric population, it can be difficult to assess a patient's level of pain due to their level of cognition, limited communication skills and developmental stages. In Children's Hospital, we use 3 different scales: FLACC Revised, FACES Pain Scale Revised and Numerical Scale. See below for examples of these pain scales.

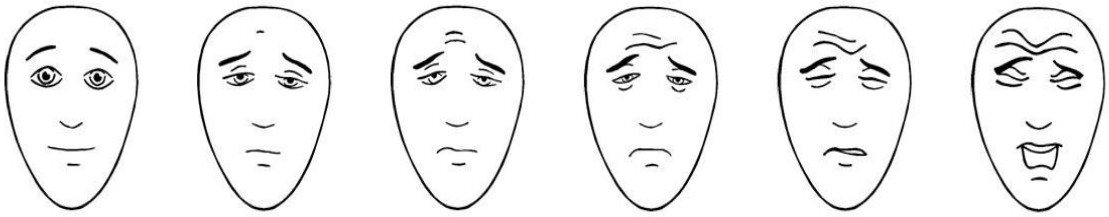
FLACC Scale Revised

(REVISED) FLACC Scale SCORING			
Category	**0**	**1**	**2**
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested, sad, appears worried	Frequent to constant quivering chin, clenched jaw, distressed looking face, expression of fright/ panic
Legs	Normal position or relaxed; usual tone and motion to limbs	Uneasy, restless, tense, occasional tremors	Kicking, or legs drawn up, marked increase in spasticity, constant tremors, jerking
Activity	Lying quietly, normal position, moves easily, regular rhythmic respirations	Squirming, shifting back and forth, tense, tense/guarded movements, mildly agitated, shallow/ splinting respirations, intermittent sighs	Arched, rigid or jerking, severe agitation, head banging, shivering, breath holding, gasping, severe splinting
Cry	No cry (awake or asleep)	Moans or whimpers: occasional complaint, occasional verbal outbursts, constant grunting	Crying steadily, screams or sobs, frequent complaints, repeated outbursts, constant grunting
Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to; distractible	Difficult to console or comfort, pushing caregiver away, resisting care or comfort measures
Each of the five categories (**F**) Face; (**L**) Legs; (**A**) Activity; (**C**) Cry; (**C**) Consolability is scored from 0-2, which results in a total score between zero and ten.			

References:
Merkel, S. et al. The FLACC: A Behavioural Scale for Scoring Postoperative Pain in Young Children, Pediatric Nurse 23(3): 293-297, 1997. Copyright: Jannetti Co. University of Michigan Medical Centre.

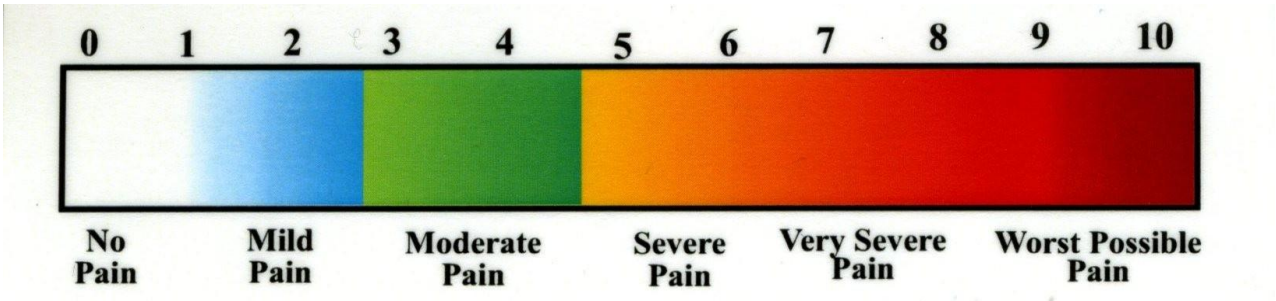
Malviya, S., Vopel-Lewis, T. Burke, Merkel, S., Tait, A.R. (2006). The revised FLACC Observational Pain Tool: Improved Reliability and Validity for Pain Assessment in Children with Cognitive Impairment. (Pediatric Anesthesia 16: 258-265).

Faces Pain Scales-Revised



Reference: Faces Pain Scale- Revised © 2001, International Association for the Study of Pain (www.iasp-pain.org/FPSR)

0-10 Numeric Pain Rating Scale



3.0 GUIDELINES:

3.1 Selection of appropriate pain management is done according to patient age, intellectual capacity, level of anxiety, perception of pain, type of procedure and timing of planned procedure.

3.2 All infants, children and youth undergoing a minimally-moderately painful procedure will be treated prior to the procedure following the Nurse Initiated Pain Management for Procedures in Pediatrics Nursing Decision Making Tool.

3.2.1 If unable to use any of the pain mitigating strategies from the Pain Management for Procedures in Pediatrics Nursing Decision Making Tool, document rationale for not providing pain management on the patient health care record.

Exception: when emergent care will be compromised

3.3 Minor Painful Procedures include, but are not limited to:

- Intravenous Insertion
- Venipuncture
- Capillary Punctures
- Intramuscular Injections

- Accessing an Implantable Venous Access Device with a gripper needle
- Lumbar Puncture
- Subcutaneous Injections
- Arterial Punctures

3.4 Oral sucrose and topical anesthetics can be used simultaneously to assist in enhanced pain control for the patient.
Exception: Any contraindication to either product

3.5 For procedures requiring moderate to severe pain management beyond the Nurse Decision Making Tool, consult a physician to prescribe more intensive pain modalities.

3.5.1 This may include, but is not limited to:

- Orders for narcotics and/or sedatives
- Consult to Pediatric Day Unit (PDU) for procedural sedation
- Consult to Acute Pain Services (APS – Pediatrics)
- Consult to Pediatric Anesthesia
- Consult to Pediatric Palliative Care Team (if applicable)

3.6 Adverse Reactions:

3.6.1 The nurse is to observe the patient for any signs of adverse reaction. See Section 4.5 for management of potential adverse reactions.

3.7 Evaluation & Documentation:

3.7.1 The nurse is to document the chosen treatment method used to mitigate pain during the procedure in the patient's health record (i.e. Vital Sign Record, Integrated Progress Note, Medication Administration Record (MAR) etc.).

3.7.2 The nurse is to document the effectiveness of the method(s) used using pre and post assessments and appropriate pain scale used.

3.7.3 Oral Sucrose is to be documented on the pink PRN Medication Administration Record (MAR).

3.7.4 Topical Anesthetics are to be documented on the yellow STAT or PRN Medication Administration Record (MAR).

3.7.5 The nurse is to document what other actions could be trialed for this patient next time to help minimize pain (if applicable).

3.7.6 If the patient/caregiver/designate(s) have declined the suggested pain modalities, this is to be documented as an Integrated Progress Note in the patient's health record.

4.0 PROCEDURE:

4.1 The nurse is to refer to and implement the Nurse Decision Making Tool and determine which methods and product(s) are to be used per patient requirements.

4.2 Consultation with the attending physician is to occur for those patients who do not meet the criteria within the Nurse Decision Making Tool. This consultation will determine if it is appropriate for the patient to have Ametop®, EMLA® or Pain Ease applied prior to procedures/interventions at the discretion of the physician/approved prescriber. In this instance a written order is required.

4.3 Staff should collaborate with caregivers when determining which non-pharmacological interventions are most appropriate based on child's preferences and developmental level. (e.g. asking the patient and caregiver what has worked in the past, ask questions such as; Does the child like to watch or look away during procedures? Does the child like to sit or lie down during procedures? Does the child like to have a support person beside them or sit on someone's lap?

4.4 Non-Pharmacological Interventions:

- Comfort Measures – favorite blanket or stuffed animal, soother, etc.
- Distraction Techniques – music, video games, bubbles, toys
- Massage devices, ice packs, warm packs
- Comfort Positions – See Appendix B

4.5 Sucrose Administration:

4.5.1 For infants weighing greater than 2000 gram and up to one year of age, administer 1-2 mL of Sucrose solution or prepackaged Dandelion Kisses/TootSweet® 24% sucrose solution. A soother or gloved finger can be dipped in solution and placed in the infant's mouth or squeeze small drops of the prepackaged sucrose into corner of mouth.

4.5.2 For dosing requirements on infants weighing less than 2000 grams, see the HSC Neonatal Clinical Practice Guideline: Sucrose for Procedural Pain Relief in Infants

4.5.3 For optimal effect, give a few drops of the oral sucrose solution 2 minutes prior to the painful procedure, immediately upon beginning the procedure and half- way though the procedure if it is lasting longer than 10 minutes.

4.5.4 A pacifier can be used in conjunction with Sucrose to enhance the analgesic affect.

4.5.5 Oral sucrose can be used up to 8 doses in a 24hour period. If a patient requires more than 8 doses due to length/severity of the procedure, consider other methods of pain management.

4.5.6 Oral sucrose may be used for the infant that is NPO (unless otherwise instructed and ordered by the physician/resident/designate).

4.5.7 Oral sucrose is not to be given to patients on ketogenic diets or for patients with severe oral aversion (unless approved to administer in discussion with an Occupational Therapist).

4.5.8 Health care providers (HCP) who may administer oral sucrose:

- Nurses
- Residents
- Physicians

4.5.9 Document oral sucrose on the PRN or Stats and Non-Recurring Medication Administration Record (MAR) or appropriate unit-specific flow sheet.

4.6 Topical Anesthetic Administration:

4.6.1 The nurse is to use clinical judgement and refer to the Nurse Decision Tool (Appendix A) to determine the most appropriate type of topical anesthetic use and pain modalities per patient requirements.

4.6.2 Health care providers (HCP) who may apply topical anesthetic:

- Nurses
- Residents
- Physicians
- Exception: Parent with education & nursing supervision

4.6.3 Topical anesthetic creams are not to be used for capillary punctures (i.e. fingers, heel, toes) due to vasoconstriction of the capillary bed that will inhibit blood flow preventing a successful blood draw. If a capillary puncture is required, use non-pharmacological interventions and oral sucrose (if patient under 1 year of age) to assist in minimizing pain.

4.6.4 Patients with the following conditions require further collaboration with the physician/medical team prior to making the decision to proceed with implementing the Nurse Decision Making Tool:

- Open or broken areas of the skin
- Known sensitivity to Ametop®, EMLA® or Pain Ease®
- Renal impairment
- Hepatic disease
- Previous diagnosis of G6PD deficiency
- Previous diagnosis of congenital or idiopathic methemoglobinemia
- Premature neonates less than 37 weeks gestation
- Patients less than 3 years of age (for Pain Ease® only)

4.6.5 Apply topical anesthetic in the appropriate time frame. For anesthetics that are not provided in patch form, apply and cover medication with a transparent dressing.

4.6.6 Application of Topical Anesthetics:

4.6.6.1 Ametop® and EMLA®:

- Determine whether the patient has any contraindications to topical anesthetic or adhesives.
- Apply topical anesthetic cream for the following interventions:
  - Venipuncture or IV Insertion: over one or two sites that are identified with either a visible or palpable vein
  - Intramuscular or Subcutaneous Injections: over one or more sites that are required for injection
  - Lumbar Puncture: over the site identified by the physician, usually L3-4, or L4-5
  - Bone Marrow Aspiration: the topical anesthetic should be placed over the posterior iliac crest (unless otherwise indicated by the physician)
  - Port-a-Cath Access: over the implanted port
  - Joint Injection/Aspiration: over the joints identified by the physician

Note: If the nurse is unsure where to apply the cream, ask for the physician, resident, expert IV starter or designate to mark an "X" on the patient to indicate location preference(s).

- Avoid broken or irritated skin, mucous membranes, genitals, as well as eyes, ears and mouth. A more rapid and greater absorption has been seen in patients with atopic dermatitis
- Clean application site with approved antiseptic. Apply a thick layer of the anesthetic cream topically to the site(s) (do not rub in). Apply Ametop® for 30-45 minutes, and EMLA® for at least 60 minutes, prior to the invasive procedure
- Place an occlusive dressing over the topical anesthetic covering the potential site(s), to enhance absorption and prevent accidental ingestion
- Once the topical anesthetic has been applied to the skin for the allotted time, remove the dressing and wipe the area of any excess topical anesthetic thoroughly
- Instruct/prevent the patient from scratching or exposing the area to extreme temperatures after cream removal, as the patient will be unable to feel pain at the site
- Clean the skin with an appropriate antiseptic prior to the procedure

4.6.6.2 Pain Ease® Spray:

- Determine whether the patient has any contraindications (i.e. allergies to topical anesthetics, diabetic patients with known circulatory concerns etc)
- Explain to the patient that the Pain Ease® Spray is very cold. Additional consideration must be given when used with children under 3 years of age (or developmentally less than 3 years of age). When refrigerant sprays are used in children less than 3 years old, they usually respond to the sudden coldness with a startled response and may cry as a result
- For patients that are less than 3 years of age, or scared of the spray, an alternative option for application is to spray the vapocoolant into a medication cup, absorb the solution with sterile gauze and wipe along the skin
- Assemble the necessary equipment in preparation for the procedure being performed

Note: Once Pain Ease ® has been applied; it is effective for approximately 60

seconds, so the procedure must be performed within this time frame.

- Cleanse the application site with approved antiseptic and allow drying. To apply, hold can upright over treatment area (the distance away from treatment area is approximately 4 inches or the length of the can, minus the lid). **Do not shake the can**. Press the actuator button and spray steadily until the skin turns white (in most cases, this occurs in 4 to 10 seconds) covering an area approximately the size of a quarter
- Monitor the patient's response during application

Note: If the patient experiences a stinging sensation, the spray may have been applied too closely to the site or for too long.

4.6.7 Document the topical anesthetic used on the STAT MAR (single use), PRN MAR (continued/repetitive use), on the appropriate unit specific flow sheet or in the electronic health record.

4.7 Management of Potential Adverse Reactions:

4.7.1 Monitor patients for adverse effects following application of topical anesthetics. Generalized reaction complaints may include swelling, rash or pruritus at the application site.

Note: Slight erythema at the application site is a common finding and is not considered an adverse or allergic reaction.

4.7.2 Remove topical anesthetic immediately if blistering occurs at application site.

4.7.3 Contact physician, pharmacist if the patient develops adverse reactions to any of the topical anesthetics used.

4.7.4 Types of Adverse Reactions:

4.7.4.1 EMLA® is contraindicated in patients with congenital or idiopathic methemoglobinemia. This is a very rare reaction only associated with the use of Prilocaine and other local anesthetic. Methemoglobinemia is a condition where the oxygen-carrying capacity of the blood is reduced. This produces an accumulation of methemoglobin within the blood that can become toxic. Methemoglobinemia should be suspected if EMLA® has been used and the patient experiences any of the following symptoms:

- Cyanosis or grayness to the skin
- Dyspnea
- Headache
- Confusion
- Weakness
- Palpitations

Note: If a Methemoglobin reaction is suspected, a physician must be notified immediately. The topical cream should then be removed and 100% oxygen applied to the patient.

4.7.4.2 Pain Ease® Spray is to be used with caution in patients that have poor circulation, diabetes, or neuropathy due to inhibited/loss of sensation and generalized unawareness of over application of the product. Over application of Pain Ease® Spray may lead to "frost bite" and alterations in skin pigmentation.

4.7.4.4 Severe adverse reactions can include:

- Difficulty breathing, wheezing
- Swelling of mouth, tongue, lips or mucous membranes
- Profuse redness and/or rash extending to untreated areas of the body
- Severe itchiness
- Gastrointestinal complications (ie. nausea, vomiting, diarrhea, etc)

Note: If an anaphylactic response is suspected, notify a physician immediately, obtain your emergency safety equipment & medication box and follow hospital policy for emergent response.

5.0 RESOURCES:

5.1 WRHA Clinical Resource Pharmacist – Pediatrics/Neonatology

5.2 Child Health Nurse Educators

5.3 Elsevier Nursing Skills Online – Medication Administration: Topical (Pediatric)

5.4 IWK Health Centre - Care Directive for the Application of Topical Anesthetics

6.0 REFERENCES:

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5.3 Shah V, Taddio A, Rieder MJ. Effectiveness and Tolerability of Pharmacologic and Combined Interventions for Reducing Injection Pain During Routine Childhood Immunizations: Systematic Review and Meta-Analyses. *Clinical Therapeutics* 2009; 31: Supplement B, S104-151.

5.4 Marshfield Clinic Healthcare System, Positioning for Comfort pamphlet, 2018

5.5 College of Registered Nurses of Manitoba, Scope of Practice for RNs, 2018-2019

5.6 RGR Pharma. Consider Maxilene. *RGR Pharma Ltd SkinHealth* 2017.

5.7 Yip A, Soin H, Taddio A. Review of a New Topical Anesthetic, Liposomal Lidocaine, for Procedural Pain in Children. *JCPH June 2005;* 58(3): 148-150.

5.8 Barbour T, O'Keefe S, Mace S. A Practitioner's Guide to Gebauer's PainEase The Instant Topical Anesthetic (2017).