

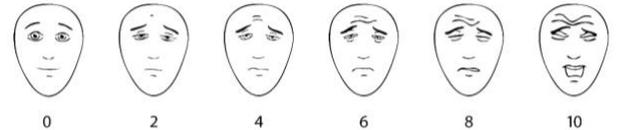
Pain Treatment

The majority of healthcare visits are related to pain.¹ Untreated pain has both short-term (pain and distress for the child, caregivers and healthcare providers; inadequate patient assessment; slower healing) and long-term (increased sensitivity to pain; healthcare avoidance; development of chronic pain) consequences. Expedient and effective multi-modal pain care improves procedure success rates, ED flow, and patient/caregiver satisfaction.¹ Repeat pain measures and consideration of each child's unique situation, state of distress, and life experience can help direct healthcare professionals to appropriate therapy.

Recommended Pain Scales to measure children's pain

Children should be asked to rate their pain. If unable (e.g. cognitive disability, non-verbal), then the caregiver should be asked.

1. [FLACC-R Score](#) – For children less than 4 years of age or non-verbal.
2. [Faces Pain Scale \(Revised\)](#) – For children 4-12 years of age.
3. [Verbal Numerical Rating Score](#) – For children over 6 years of age. (Eg. “on a scale of 0-10, where 0 is no pain and 10 is the worst pain you can imagine, tell me what number your pain is”)



General suggestions to minimize pain

PHYSICAL

- » **Ask the caregivers** to stay in the room and provide them with direction to calmly support their child with distraction, gentle touch (if desired by the child), conversation, and/or suggestions for deep breathing.
- » If applicable and the infant/child is not NPO, **breastfeeding** can be very soothing.
- » **Non-nutritive sucking** (i.e. pacifier) can be used if breastfeeding is not available, or if the infant/child is NPO.
- » Caregivers may **hold** the child in a number of comfort positions that do not interfere with examinations or procedures (e.g. upright and in direct physical contact with caregiver), and **rock** the child after the intervention.
- » Young infants can have **facilitated tucking** (i.e. legs and arms tucked close to body) or **swaddling with blankets** to calm them while awaiting assessment/results.
- » If available, caregivers may provide infants with **kangaroo care** (i.e. skin-to-skin contact) while awaiting assessment/results.

PSYCHOLOGICAL

- » **Simple distraction techniques** such as bubbles, books, I-spy books/cards, portable distraction kits, and conversation.
- » **Technology-based distraction** such as tablet device, DVD player, smart phone games, music, videos, and virtual reality.

Pharmacological treatment of acute pain

- » To be used in conjunction with physical and psychological interventions.
- » Reassess response to pharmacotherapy regularly during the ED visit. Re-dosing, as required, is recommended.
- » There is NO evidence that provision of early analgesia negatively affects diagnostic accuracy.
- » For infants less than 12 months old, consultation with Pediatric Referral Centre is advised for recommendations regarding assessment/diagnostic work-up, possible transport, and if opioids or IV analgesics are required for the management of pain.

OPIOIDS

- » Titrate all opioids to clinical effect/side effects.
- » True allergy to morphine and other opioids is extremely rare. Cross reactivity is also rare.
- » Health Canada advises avoidance of codeine in children <18 years of age² and hydrocodone in children <6 years.³
- » Use caution if employing procedural sedation within 30 min of opioid administration due to increased risk of respiratory adverse events.
- » All families should have an opioid risk assessment performed before prescribing outpatient opioids.
- » If discharging patient home with PO opioids, prescribe for no more than 3 days (or 10 doses total) for most outpatient conditions.
- » Recommend stool softener for those discharged with PO opioids. Refer to [TREKK Recommendations for Constipation](#).
- » Opioids should be stored safely out of reach and only given as needed. Unused quantities of any medication should be returned to the pharmacy for safe disposal.

Pain Treatment

ANALGESICS FOR CHILDREN 1 YEAR AND OLDER		
MILD PAIN (e.g. 1-3 out of 10)		
Drug	Dose	Comments/Precautions
Ibuprofen PO	10 mg/kg/dose q6h PRN (MAX 600 mg/dose)	First-line option for musculoskeletal injuries and most other painful inflammatory conditions.
Acetaminophen PO	15 mg/kg/dose q4h PRN (MAX 1000 mg/dose)	Do not exceed the lesser of 75 mg/kg/day or 4 g/day.
MODERATE PAIN (e.g. 4-6 out of 10)		
Ibuprofen AND Acetaminophen PO	Dosing as for Mild Pain section above	
<i>Consider adding an opioid.</i>		
Hydromorphone PO (tablets, liquid)	0.03-0.06 mg/kg/dose q3-4h PRN (MAX 1-2 mg/dose)	Higher risk of dosing errors. Possible increased risk of future misuse/opioid use disorders. Do not use if < 6 years old.
Morphine PO (tablets, liquid)	0.2-0.5 mg/kg/dose q3-4h PRN (MAX 15 mg/dose)	Most common pediatric opioid. Lack of demonstrated efficacy for musculoskeletal pain. For initial pain management, 2 nd dose may be given sooner than 3 hrs.
Oxycodone PO (tablets)	0.1-0.2 mg/kg/dose q4-6h PRN (MAX 5-10 mg/dose)	Risk of QT interval prolongation. Tablets must be swallowed whole.
<i>If not responding to PO opioid, consider lower dose IV/intranasal opioid (see Severe Pain below)</i>		
SEVERE PAIN (e.g. 7-10 out of 10)		
Fentanyl Intranasal	1.5 mcg/kg/dose (MAX 100 mcg/dose) May repeat 0.5-1 mcg/kg/dose (MAX 50 mcg/dose) 10 min after 1 st dose if needed. Divide dose between nostrils (MAX 1 mL/nosril).	Provides rapid pain reduction. Provides early pain relief if IV access is not yet established. Give via mucosal atomization device for enhanced absorption. Monitor level of consciousness, vital signs, and pain score prior to therapy and at 10 min post administration.
Morphine IV	0.05-0.1 mg/kg/dose q2-4h PRN (MAX 5-7.5 mg/dose)	Monitor level of consciousness, vital signs, and pain score prior to therapy and q10 min post administration (for MIN 30 min). Some institutions recommend continuous O ₂ sat monitoring for 30 min post administration. For initial pain management, 2 nd dose may be given sooner than 2 hrs.
Fentanyl IV	1 mcg/kg/dose q1-2h PRN (MAX 50 mcg/dose)	Monitoring as per Morphine IV above. For initial pain management, 2 nd dose may be given sooner than 1 hr.
<i>Always add PO or IV NSAID for opioid-sparing effect if the pain is expected to require multiple opioid doses.</i>		
Ibuprofen PO	Dosing as for Mild Pain section above	
Ketorolac IV	0.5 mg/kg/dose q6h PRN (MAX 30 mg/dose)	Avoid ibuprofen or other NSAIDs for at least 6 hours after IV ketorolac.

Counseling caregivers who are hesitant about analgesic use

1. Our goal today is to keep your child comfortable while we figure out what is going on; they do not need to remain in pain while we diagnose and treat them.
2. Treating pain does not make a child weak. Untreated pain, however, can have long-term consequences for the way your child experiences future pain or medical encounters.
3. There is no clinical evidence that using NSAIDs affects bone healing in children.
4. We will first use maximum doses of non-opioid medications, since they have fewer side effects than opioids. We will only add opioids for persistent or severe pain.
5. The worst pain after a musculoskeletal injury occurs in the first 3 days. If necessary, opioids will be provided **just** for the first three days when we expect pain to be the worst (e.g. generally MAX 10 doses).

The purpose of this document is to provide healthcare professionals with key facts and recommendations for treating pain in children. This summary was produced by the pain treatment content advisors for the TREKK Network, Drs. Samina Ali of the Stollery Children's Hospital and Amy Drendel of the Medical College of Wisconsin and uses the best available knowledge at the time of publication. However, healthcare professionals should continue to use their own judgment and take into consideration context, resources and other relevant factors. The TREKK Network is not liable for any damages, claims, liabilities, costs or obligations arising from the use of this document including loss or damages arising from any claims made by a third party. The TREKK Network also assumes no responsibility or liability for changes made to this document without its consent. This summary is based on:

1. Drendel AL, Ali S. [Ten Practical Ways to Make Your ED Practice Less Painful and More Child-Friendly. Clinical Pediatric Emergency Medicine.](#) Volume 18, Issue 4, December 2017, 242-255.
2. Health Canada. [Non-prescription pain relief products containing codeine are not recommended for use in people under 18 years of age.](#) July 2020. Accessed December 2, 2020.
3. Health Canada. [New safety measures for prescription codeine and hydrocodone to further restrict use in children and adolescents.](#) July 2016. Accessed December 2, 2020.
4. Hartling L, et al. [How Safe Are Common Analgesics for the Treatment of Acute Pain for Children? A Systematic Review.](#) Pain Res Manag. 2016;5346819.
5. Drendel AL, Kelly BT & Ali S. [Pain assessment for children: overcoming challenges and optimizing care.](#) Pediatr Emerg Care. 2011;27(8):773-81.
6. Fein JA, Zempsky WT, Cravero JP; Committee on Pediatric Emergency Medicine and Section on Anesthesiology and Pain Medicine; American Academy of Pediatrics. [Relief of pain and anxiety in pediatric patients in emergency medical systems.](#) Pediatrics. 2012;130(5):e1391-405.