Procedural Pain

EVIDENCE REPOSITORIES

Evidence repositories are collections of best available resources and evidence (clinical guidelines, peer reviewed literature, systematic reviews, etc.), collated by our knowledge synthesis team and content advisors. This evidence repository is not intended to be an exhaustive list of resources for a topic, but rather a curated list of current, evidence-based resources, based on expert consensus of relevance and usability for a general emergency department setting. We search databases (Cochrane Library, PubMed, TRIP Database) and web search engines (Google, Google Scholar) to locate evidence. Additionally, hospital websites are browsed for guidance documents, such as clinical practice guidelines (CPG) for healthcare professionals.

Every effort is made to identify resources that are open access (i.e. publicly available, free of charge, not requiring a subscription).

More information about the creation of our evidence repositories can be found at https://pubmed.ncbi.nlm.nih.gov/28537762/

CONTENT TEAM

Thank you to the following content experts and Knowledge Synthesis team who led the development of this evidence repository.

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TREKK developed resources for healthcare providers and parents & families can be found here.

Clinical Guidelines

- 1. Chumpitazi CE, Chang C, Atanelov Z, et al. <u>Managing acute pain in children presenting to the emergency</u> department without opioids. J Am Coll Emerg Physicians Open. 2022;3(2):e12664.
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- 3. Trottier ED, Doré-Bergeron MJ, Chauvin-Kimoff L, et al. <u>Managing pain and distress in children undergoing brief</u> diagnostic and therapeutic procedures. Paediatr Child Health. 2019;24(8):509-35.
- 4. ENA Clinical Practice Guideline Committee. <u>Clinical practice guideline: Needle-related or minor procedural pain in pediatric patients</u>. J Emerg Nurs. 2019;45(4):437.e1-.e32.
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- 6. Olsen K, Weinberg E. <u>Pain-less practice: Techniques to reduce procedural pain and anxiety in pediatric acute care.</u> Clinical Pediatric Emergency Medicine. 2017;18(1):32-41.
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- 8. Committee on Fetus and Newborn and Section on Anesthesiology and Pain Medicine. <u>Prevention and management of procedural pain in the neonate: An update.</u> Pediatrics. 2016;137(2):e20154271.
- 9. Association of Paediatric Anaesthetists of Great Britain and Ireland. <u>Good practice in postoperative and procedural pain management, 2nd edition.</u> Paediatr Anaesth. 2012;22 Suppl 1:1-79.
- 10. Taddio A, Appleton M, Bortolussi R, et al. <u>Reducing the pain of childhood vaccination: An evidence-based clinical practice guideline</u>. Cmaj. 2010;182(18):E843-55.
- 11. Spence K, Henderson-Smart D, New K, et al. <u>Evidenced-based clinical practice guideline for management of newborn pain</u>. J Paediatr Child Health. 2010;46(4):184-92.
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Overviews

- 1. Children's Healthcare Canada. <u>Procedural pain management in children & youth: A toolkit for health professionals.</u> 2023.
- 2. Curtis S, Wingert A, Ali S. <u>The Cochrane library and procedural pain in children: An overview of reviews.</u> Evidence-Based Child Health: A Cochrane Review Journal. 2012;7(5):1363-99.

Systematic Reviews

- 1. Pansini V, Curatola A, Gatto A, et al. <u>Intranasal drugs for analgesia and sedation in children admitted to pediatric emergency department: A narrative review.</u> Ann Transl Med. 2021;9(2):189.
- 2. Mace SE, Whiteman P, Avarello JT, et al. <u>Local and topical anesthetics for pediatric patients in the emergency department</u>. Pediatr Emerg Care. 2020;36(12):593-601.
- 3. Gates M, Hartling L, Shulhan-Kilroy J, et al. <u>Digital technology distraction for acute pain in children: A meta-analysis.</u> Pediatrics. 2020;145(2).
- 4. Ballard A, Khadra C, Adler S, et al. Efficacy of the buzzy device for pain management during needle-related procedures: A systematic review and meta-analysis. Clin J Pain. 2019;35(6):532-43.



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- 5. Zhu Y, Peng X, Wang S, et al. <u>Vapocoolant spray versus placebo spray/no treatment for reducing pain from</u> intravenous cannulation: A meta-analysis of randomized controlled trials. Am J Emerg Med. 2018;36(11):2085-92.
- 6. Porter KM, Dayan AD, Dickerson S, et al. <u>The role of inhaled methoxyflurane in acute pain management.</u> Open Access Emerg Med. 2018;10:149-64.
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- 14. Stevens B, Yamada J, Ohlsson A, et al. <u>Sucrose for analgesia in newborn infants undergoing painful procedures.</u> Cochrane Database Syst Rev. 2016;7(7):Cd001069.
- 15. Harrison D, Reszel J, Bueno M, et al. <u>Breastfeeding for procedural pain in infants beyond the neonatal period.</u> Cochrane Database Syst Rev. 2016;10(10):Cd011248.
- 16. Pillai Riddell RR, Racine NM, Gennis HG, et al. <u>Non-pharmacological management of infant and young child procedural pain.</u> Cochrane Database Syst Rev. 2015;2015(12):Cd006275.
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- 19. Shah PS, Herbozo C, Aliwalas LL, et al. <u>Breastfeeding or breast milk for procedural pain in neonates.</u> Cochrane Database Syst Rev. 2012;12(12):Cd004950.
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- 23. Harrison D, Yamada J, Adams-Webber T, et al. <u>Sweet tasting solutions for reduction of needle-related procedural pain in children aged one to 16 years</u>. Cochrane Database Syst Rev. 2011(10):Cd008408.
- 24. Malloy KM, Milling LS. The effectiveness of virtual reality distraction for pain reduction: A systematic review. Clin



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Key Studies

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- 2. Caltagirone R, Raghavan VR, Adelgais K, et al. <u>A randomized double blind trial of needle-free injected lidocaine versus topical anesthesia for infant lumbar puncture</u>. Acad Emerg Med. 2018;25(3):310-6.
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- 5. Herreros ML, Tagarro A, García-Pose A, et al. <u>Accuracy of a new clean-catch technique for diagnosis of urinary</u> tract infection in infants younger than 90 days of age. Paediatr Child Health. 2015;20(6):e30-2.
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Other Resources

- Krauss BS, Krauss BA, Green SM. <u>Videos in clinical medicine</u>. <u>Managing procedural anxiety in children</u>. N Engl J Med. 2016;374(16):e19.
- 2. Drendel A, Helman A. <u>Emergency medicine cases podcast: Pediatric procedural sedation.</u> Emergency Medicine Cases. 2016.
- 3. Sucrose as a procedural analgesic for infants up to 12 months of age. BC Children's Hospital. 2011.
- 4. Psychological interventions. BC Children's Hospital. 2011.
- 5. Pain Ease®: Topical anesthetic skin refrigerant. BC Children's Hospital. 2011.

