

# High Flow Nasal Cannula

## 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. Chauvin-Kimoff L DA, Canadian Paediatric Society. [Use of high-flow nasal cannula oxygen therapy in infants and children](#). Canadian Pediatric Society. 2018.
2. NSW Government. [Humidified high flow nasal cannula oxygen guideline for metropolitan paediatric wards and EDs](#). NSW Government, Agency for Clinical Innovation. 2016.
3. Children's Health Queensland Hospital and Health Service. [Guideline: Nasal high flow therapy](#). Children's Health Queensland Hospital and Health Service. 2020.
4. O'Brien S, PREDICT Network Australasia. [Australasian bronchiolitis bedside clinical guideline](#). 2018.

## Systematic Reviews

1. Moreel L, Proesmans M. [High flow nasal cannula as respiratory support in treating infant bronchiolitis: A systematic review](#). Eur J Pediatr. 2020;179(5):711-8.
2. Lin J, Zhang Y, Xiong L, et al. [High-flow nasal cannula therapy for children with bronchiolitis: A systematic review and meta-analysis](#). Arch Dis Child. 2019;104(6):564-76.
3. Luo J, Duke T, Chisti MJ, et al. [Efficacy of high-flow nasal cannula vs standard oxygen therapy or nasal continuous positive airway pressure in children with respiratory distress: A meta-analysis](#). J Pediatr. 2019;215:199-208.e8.
4. O'Brien S, Craig S, Babl FE, et al. ['Rational use of high-flow therapy in infants with bronchiolitis. What do the latest trials tell us?' A paediatric research in emergency departments international collaborative perspective](#). J Paediatr Child Health. 2019;55(7):746-52.

## Key Studies

1. Vahlkvist S, Jürgensen L, la Cour A, et al. [High flow nasal cannula and continuous positive airway pressure therapy in treatment of viral bronchiolitis: A randomized clinical trial](#). Eur J Pediatr. 2020;179(3):513-8.
2. Liu C, Cheng WY, Li JS, et al. [High-flow nasal cannula vs. Continuous positive airway pressure therapy for the treatment of children <2 years with mild to moderate respiratory failure due to pneumonia](#). Front Pediatr. 2020;8:590906.
3. Franklin D, Babl FE, Schlapbach LJ, et al. [A randomized trial of high-flow oxygen therapy in infants with bronchiolitis](#). N Engl J Med. 2018;378(12):1121-31.

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4. Kepreotes E, Whitehead B, Attia J, et al. [High-flow warm humidified oxygen versus standard low-flow nasal cannula oxygen for moderate bronchiolitis \(HFWHO RCT\): An open, phase 4, randomised controlled trial](#). Lancet. 2017;389(10072):930-9.
5. Milési C, Essouri S, Pouyau R, et al. [High flow nasal cannula versus nasal continuous positive airway pressure \(ncpap\) for the initial respiratory management of acute viral bronchiolitis in young infants: A multicenter randomized controlled trial \(tramontane study\)](#). Intensive Care Med. 2017;43(2):209-16.
6. Kalburgi S, Halley T. [High-flow nasal cannula use outside of the ICU setting](#). Pediatrics. 2020;146(5).
7. Dadlez NM, Esteban-Cruciani N, Khan A, et al. [Safety of high-flow nasal cannula outside the ICU for previously healthy children with bronchiolitis](#). Respir Care. 2019;64(11):1410-5.
8. Daverio M, Da Dalt L, Panozzo M, et al. [A two-tiered high-flow nasal cannula approach to bronchiolitis was associated with low admission rate to intensive care and no adverse outcomes](#). Acta Paediatr. 2019;108(11):2056-62.
9. Er A, Çağlar A, Akgül F, et al. [Early predictors of unresponsiveness to high-flow nasal cannula therapy in a pediatric emergency department](#). Pediatr Pulmonol. 2018;53(6):809-15.
10. Long E, Babl FE, Duke T. [Is there a role for humidified heated high-flow nasal cannula therapy in paediatric emergency departments?](#) Emerg Med J. 2016;33(6):386-9.
11. Wing R, James C, Maranda LS, Armsby CC. [Use of high-flow nasal cannula support in the emergency department reduces the need for intubation in pediatric acute respiratory insufficiency](#). Pediatr Emerg Care. 2012;28(11):1117-23.
12. Li J, Fink JB. [Narrative review of practical aspects of aerosol delivery via high-flow nasal cannula](#). Ann Transl Med. 2021;9(7):590.
13. Kwon JW. [High-flow nasal cannula oxygen therapy in children: A clinical review](#). Clin Exp Pediatr. 2020;63(1):3-7.
14. Lodeserto FJ, Lettich TM, Rezaie SR. [High-flow nasal cannula: Mechanisms of action and adult and pediatric indications](#). Cureus. 2018;10(11):e3639.
15. Wang J, Lee KP, Chong SL, et al. [High flow nasal cannula in the emergency department: Indications, safety and effectiveness](#). Expert Rev Med Devices. 2018;15(12):929-35.
16. Slain KN, Shein SL, Rotta AT. [The use of high-flow nasal cannula in the pediatric emergency department](#). J Pediatr (Rio J). 2017;93 Suppl 1:36-45.