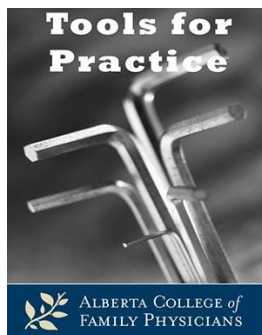


Tools for Practice is proudly sponsored by the Alberta College of Family Physicians (ACFP). ACFP is a provincial, professional voluntary organization, representing more than 4,800 family physicians, family medicine residents and medical students in Alberta. Established over sixty years ago, the ACFP strives for excellence in family practice through advocacy, continuing medical education and primary care research. www.acfp.ca

Reviewed: December 6, 2017
Evidence Updated: Added RCT and meta-analysis
Bottom Line: Unchanged
First Published: April 12, 2010



Pediatric Cough: Do OTC cough suppressants or honey help?

Clinical Question: Do Over-The-Counter (OTC) cough suppressants or honey improve cough due to Upper Respiratory Tract Infection (URTI) in children?

Bottom-line: OTC cough suppressants should not be used in children under six and are likely ineffective in older children. The evidence supporting honey is positive for a small effect but the evidence is at high risk of bias.

Evidence:

- OTC Cough Suppressants: A systematic review¹ considered 10 randomized controlled trials (RCTs) with 1036 children, mean ages 2-7.5. Studies were done primarily in pediatric/primary clinics and were generally poor quality.
 - Statistical improvements were infrequent, inconsistent and of doubtful clinical significance.
- Honey: Four RCTs.
 - 105 children, mean age five (range 2-17): one night-time dose of honey, dextromethorphan (DM), or nothing.²
 - Statistically significant cough/sleep score improvement in:
 - Five of five three-way comparisons: superiority in order of honey over DM over nothing.
 - Neither honey or DM reached clinically important improvement
 - 139 children, mean age three (range 2-5): one night-time dose of honey, DM, diphenhydramine (DPH), or supportive care.³
 - Statistically significant improvement in:
 - All groups after 24 hours: Mean improvements were 59% for honey, 45% for DM and DPH, and 31% for supportive care.
 - Honey superior to DM and DPH, which were superior to supportive care.
 - 270 children, median age 2.4 (range 1-5): one night-time dose of three different types of honey or placebo (silan date extract).⁴
 - Statistically significant cough/sleep score improvement in:

- Five of five comparisons for all honey types over placebo with no difference between honey types.
- 134 children, age range 2-14 years: 3 night-time doses of milk with honey, or DM or levodropropizine (another antitussive).⁵
 - No statistically significant difference between groups in cough relief.

Context:

- A meta-analysis⁶ of 3 of the included trials²⁻⁴ found that honey reduced cough frequency more than diphenhydramine and placebo, but not dextromethorphan.
- The magnitude of honey's benefit cannot be determined due to study design.
- Methodological issues in honey trials: randomization not assured,²⁻⁵ no blinding,^{3,5} excluded patients deviating from protocol,³ substituting clinicians rating for parent/child,^{3,4} funding by the Honey Board,^{2,4} and limited clinical significance.²⁻⁵
- There is a strong placebo effect in treating pediatric cough; an RCT of 120 children found no significant difference between agave nectar and placebo, however, both reduced cough frequency and severity compared to no treatment.⁷
- Due to poor evidence of benefit and possible harms, Health Canada⁸ recommends OTC cough and cold medicines not be used in children under six.
- Honey should not be used in children in age ≤ 1 due to risk of infantile botulism.

Original Authors:

G Michael Allan MD CCFP, Michael R Kolber BSc MD CCFP MSc

Updated:

Ricky D Turgeon BS(Pharm) ACPR PharmD

Reviewed:

G Michael Allan MD CCFP

References:

1. Smith SM, Schroeder K, Fahey T. Cochrane Database Syst Rev 2012;11:CD001831.
2. Paul IM, Beiler J, McMonagle A, *et al.* Arch Pediatr Adolesc Med 2007; 161:1140-6.
3. Shadkam MN, Mozaffari-Khosravi H, Mozayan MR. J Altern Complement Med. 2010 Jul; 16(7):787-93.
4. Cohen HA, Rozen J, Kristal H, *et al.* Pediatrics 2012;130(3):465-71.
5. Miceli Sopo S, Greco M, Monaco S, *et al.* Allergol Immunopathol 2015;43:449-55.
6. Oduwole O, Meremikwu MM, Oyo-Ita A, Udoh EE. Cochrane Database Syst Rev 2014;12:CD007094.
7. Paul IM, Beiler JS, Vallati JR, Duda LM, King TS. JAMA Pediatr 2014;168:1107-13.
8. Health Canada Drugs and Health Products. <http://www.hc-sc.gc.ca/dhp-mps/medeff/res/cough-toux-video-eng.php> Last accessed on October 22, 2013.

Tools for Practice is a biweekly article summarizing medical evidence with a focus on topical issues and practice modifying information. It is coordinated by G. Michael Allan, MD, CCFP and the content is written by practising family physicians who are joined occasionally by a health professional from another medical specialty or health discipline. Each article is peer-reviewed, ensuring it maintains a high standard of quality, accuracy, and academic integrity. If you are not a member of the ACFP and would like to receive the TFP emails, please sign up for the distribution list at <http://bit.ly/signupfortfps>. Archived articles are available on the ACFP website.

This communication reflects the opinion of the authors and does not necessarily mirror the perspective and policy of the Alberta College of Family Physicians.