



Honey, not dextromethorphan, was better than no treatment for nocturnal cough in children with upper respiratory infections.

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Honey, not dextromethorphan, was better than no treatment for nocturnal cough in children with upper respiratory infections.

STUDY DESIGN

Design: randomised controlled trial.

Allocation: {concealed*}†.

Blinding: blinded (outcome assessors, patients and healthcare providers [to dextromethorphan (DM) and honey], {data collectors, data analysts, and manuscript writers}†).*

Setting: a university-affiliated paediatric practice in Hershey, Pennsylvania, USA.

Patients: {108}† children 2–18 years of age (median age 5 y, range 2–17 y, 53% girls) who had cough due to an upper respiratory infection (rhinorrhoea and cough for ≤ 7 days) and whose parents scored ≥ 3 points (*somewhat*) for ≥ 2 of 3 questions on a 7-point Likert scale that assessed cough and sleep difficulty (0 = not at all to 6 = extremely). Exclusion criteria included signs and symptoms of asthma, pneumonia, laryngotracheobronchitis, sinusitis, or allergic rhinitis; reactive airways disease; chronic lung disease; use of selective serotonin reuptake inhibitors; or use of an antihistamine or DM hydrobromide ≤ 6 hours from bedtime or DM polistirex ≤ 12 hours from bedtime on the day before or of enrolment.

Intervention: 1 dose of buckwheat honey (n = 35), 1 dose of artificially honey-flavoured DM (n = 33), or no treatment (n = 37). Doses of dextromethorphan, and volume equivalent doses for age of buckwheat honey, were 8.5 mg ($\frac{1}{2}$ teaspoon) for ages 2–5 years, 17 mg (1 teaspoon) for ages 6–11 years, and 34 mg (2 teaspoons) for ages 12–18 years, dispensed in a 10 ml syringe. An empty syringe was given to the no-treatment group.

Outcomes: change in frequency of cough. Secondary outcomes included change in cough severity, bothersome nature of cough, effect of cough on child's and parents' sleep, and combined scores of the 5 measures.

Follow up period: 1 day after treatment.

Patient follow-up: 81%.

MAIN RESULTS

Children in the honey group improved more than children in the no-treatment group for cough frequency and combined symptom score (table). The honey and no-treatment group did not differ for child and parent sleep, bothersome nature of cough, and cough severity. DM did not differ from no treatment or honey for any of the study outcomes.

CONCLUSIONS

Honey was better than no treatment for nocturnal cough frequency in children with upper respiratory infections. Dextromethorphan did not differ from honey or no treatment for any outcome.

*See glossary.

†Information provided by author.

ABSTRACTED FROM

Paul IM, Beiler J, McMonagle A, *et al.* Effect of honey, dextromethorphan, and no treatment on nocturnal cough and sleep quality for coughing children and their parents. *Arch Pediatr Adolesc Med* 2007;**161**:1140–6.

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► **Clinical impact ratings:** Emergency medicine 6/7; Paediatric emergency medicine 6/7; GP/FP/Primary care 5/7; Paediatrics 5/7

Honey v no treatment for upper respiratory infections in children

Outcomes at 1 day after treatment*	Honey	No treatment	p Value
Cough frequency score	1.9	0.92	0.01
Combined symptom score	10.7	6.4	0.04

*Mean improvement from baseline. Change from day 1 to day 2 measured on a 7-point Likert scale with 0 = not at all and 6 = extremely.

Cough protects the body from microbial intruders but sometimes becomes annoying. The market for cough treatments is therefore immense. This study by Paul *et al* showed that DM, the most common (and potentially dangerous) antitussive used for symptomatic relief of children's nocturnal cough and sleep difficulties due to upper respiratory tract infections in the USA, is useless, while honey is effective. DM is not missed in several countries (eg, Norway and Sweden) where it is not available. The US Food and Drug Administration recommends that over-the-counter (OTC) cough and cold products not be used for children < 2 years of age; recommendations for older children will soon be published.¹ A recently updated Cochrane Review

concluded that "there is no good evidence for or against the effectiveness of OTC medication in acute cough."² Perhaps DM should be removed from all markets.

Should we treat cough with honey? Yes, provided we remember that (1) cough is sometimes important for removing debris from the respiratory tract, (2) frequent use of honey can cause dental caries,³ and (3) honey should never be given to children under 1 year of age because of the risk of infantile botulism.⁴ The source of funding (National Honey Board) has probably not influenced the study, but this adverse effect of honey should have been mentioned. We should never advise putting honey in nursing bottles.

In summary, avoid antitussives; recommend a

short course of honey in selected cases; and explain the risk of caries if used for too long.

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3. **Bowen WH**, Lawrence RA. Comparison of the cariogenicity of cola, honey, cow milk, human milk, and sucrose. *Pediatrics* 2005;**116**:921–6.
4. **Cox N**, Hinkle R. Infant botulism. *Am Fam Physician* 2002;**65**:1388–92.