



Clinical Update

For Telephone Triage Nurses

March – April 2012

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Treating Coughs in Childhood

From the parent's perspective, coughs are very disruptive. They interfere with sleep for the child and the rest of the family. They interfere with attending school or child care. That's why it's important to help the parent find a way to treat the cough.

Home Remedies

In 2009 the FDA recommended that OTC cough syrups not be given to children under 4 years of age because of lack of efficacy and some serious side effects. The following are the current home remedies for cough that are recommended in the Schmitt pediatric guidelines. No doubt they will change as new research appears.

- **Age 3 Months to 1 Year:** Give warm clear fluids (e.g., water or apple juice) to thin the mucus and relax the airway. Dosage: 1-3 teaspoons (5-15 ml) four times per day. Note to Triager: Option to be discussed only if caller complains that nothing else helps: Give a small amount of corn syrup, but avoid honey. Dosage: ¼ teaspoon (1 ml). Can give up to 4 times a day.
- **Age 1 Year and Older:** Use HONEY 1/2 to 1 tsp (2 to 5 ml) as needed as a homemade cough medicine. It can thin the secretions and loosen the cough. (If not available, can use corn syrup.)
- **Age 6 Years and Older:** Use COUGH DROPS to coat the irritated throat. (If not available, can use hard candy.)

Honey as a Cough Syrup: Evidence-Based

- A recent study by Dr. Ian Paul compared the efficacy of honey to dextromethorphan (DM) to no treatment for nocturnal coughing.
- Honey consistently scored the best for reducing cough frequency and cough severity. It also scored best for improving sleep.
- DM did not score significantly better than no treatment at all.
- The study group contained 105 children age 2 to 18 years.
- The dose of honey used was ½ tsp (2 ml) for 2-5 year-olds, 1 teaspoon for 6 to 11 year-olds, and 2 tsp for 12 to 18 year-olds. A single dose was given at bedtime.
- One explanation for how honey works is that sweet substances naturally cause reflex salivation and increased airway secretions. These secretions may lubricate the airway and remove the trigger (or tickle) that causes a dry, nonproductive cough.

Honey and Infantile Botulism: 8 cases per year in US

- Honey has a small association with infantile botulism
- **Mechanism:** Clostridium botulinum spores are present in some honey products
- **Peak age of onset:** 2 to 4 months. Age range of disease onset: 1 to 44 weeks



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(median: 15 weeks). Therefore, honey is not recommended for any child less than 12 months (52 weeks) of age in Schmitt's telephone care guidelines for any symptom.

- **Prevalence of infantile botulism:** 91 cases were reported in the US in 2007. **Average:** 75 cases per year (CDC website).
- **Cause:** Honey is an infrequent cause. Approximately 10% of cases of infantile botulism are associated with honey. (8 – 9 cases per year). The other 90% are either idiopathic or associated with blowing dust (especially in areas of active housing development). Botulism spores are found ubiquitously in all soil. They are also present fairly uniformly in vacuum cleaner contents.

Corn Syrup and Infantile Botulism: No Risk

- **Safety:** The 2006 and 2009 AAP Red Book states clearly that "no case of infant botulism has ever proved to be attributable to consumption of corn syrup".
- **Safety:** The AAP, CDC and Health Canada websites do not mention any concerns about the need to avoid corn syrup in infants. However, all do continue to recommend avoiding honey in infants less than 1 year old.
- **Reason for previous concerns:** Botulism spores were discovered in 1% of corn syrup samples in the 80s, but the manufacturing process was then changed to eliminate this possibility. U.S. brands of corn syrup are pasteurized and safe.
- **Reason for confusion:** Many nonscientific websites continue to tell parents not to use corn syrup before 1 year of age.
- In 2010, corn syrup was added back to the pediatric cough guideline as an option for a homemade cough syrup in children 3 months to 1 year of age. Since honey has proven efficacy, corn syrup may share similar properties. (Note: Corn syrup lacks evidence for efficacy). However, corn syrup should only be mentioned if the parent complains that the cough is severe and nothing previously recommended has helped.

Final Thoughts about Treating Coughs

- ✓ Teach parents that coughing up mucus is very important for protecting the lungs from pneumonia. A productive, wet cough is a good cough. We do not want to turn it off.
- ✓ Dry coughs are unnecessary and trying to control them is a worthwhile goal.
- ✓ Honey should be avoided during the first year of life. However, because it is only associated with 8 cases of infantile botulism per year in the U.S., help anxious parents keep this small risk in perspective.
- ✓ Corn syrup is safe at any age. It has never been associated with a case of infantile botulism. We need to lay that myth to rest.

References:

- Olsen SJ, Swerdlow DL. Risk of infant botulism from corn syrup. *Pediatr Infect Dis J.* 2000;19:584.
- 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(12):1140-1144.

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