

## DEFINITION

- \* A cough is the sound made when the cough reflex suddenly forces air and secretions from the lungs
- \* A coughing spasm is over 5 minutes of continuous coughing

## BACKGROUND

### CAUSES

- \* Most are part of a cold, a viral infection of the large airway (viral bronchitis)
- \* Other common causes: croup, bronchiolitis, asthma, allergic cough
- \* Whooping cough (Pertussis) causes 2-6 weeks of paroxysmal coughing with post-tussive emesis. The pertussis cough has distinguishing features. The child appears to be choking or suffocating. Ten or more coughs occur for each breath. The choking lasts for 1 to 2 minutes. In 50% of cases, the coughing attack ends with a whoop (like stridor). Between the coughing attacks, the child acts perfectly well. To teach pertussis recognition, go to the sound files on [www.whoopingcough.net](http://www.whoopingcough.net) under symptoms.
- \* Cough Variant Asthma: Asthma is the most common cause of a chronic cough. Some 25% of children with asthma only cough and never wheeze (called cough variant asthma). They respond best to antihistamines or inhaled steroids.

### SPUTUM OR PHLEGM

- \* Yellow or green phlegm is a normal part of the healing process of viral bronchitis.
- \* This means the lining of the trachea was damaged by the viral infection and is being coughed up as new mucosa replaces it.
- \* Bacteria do not cause bronchitis in healthy children. Antibiotics are not indicated for the yellow or green phlegm seen with colds.
- \* The main treatment of a productive cough is to facilitate it with good fluid intake, a humidifier (if the air is dry) and warm chicken broth or apple juice for coughing spasms (if over age 1).

### COUGH AND COLD MEDICINES: FDA RECOMMENDATION (JANUARY 2008)

In October 2007, the AAP and other experts testified before the FDA about the safety of cough and cold medicines for young children. According to FDA data from 1969 to 2006, adverse reactions included 54 deaths from decongestants and 69 deaths from antihistamines. To put this in perspective, that's 3.3 reported deaths per year. The majority occurred in children younger than 2 years of age. In January 2008, the FDA issued a strong recommendation that parents 'not use OTC cough and cold products to treat infants and children less than 2 years of age'. These recommendations have been implemented within the related guidelines. In addition, the information has been added to all the Dosage Tables for OTC medicines.

- \* Under 2 years of age: advise callers that OTC cough and cold medicines should never be used in this age group because of potential serious side effects. They also lack efficacy. (FDA recommendation)
- \* From 2 to 6 years of age: advise callers that cough and cold medicines are not recommended for this age group because they do not have any proven efficacy for relieving cough and cold symptoms. (FDA advisory panel recommendation). However, if a parent insists on using them, help them calculate a safe dosage.
- \* Over 6 years of age: advise callers that the best treatment for coughs is honey or cough drops. The best treatment for nasal congestion is nasal washes with saline drops or spray. However, if a parent wants to use a cough or cold medicine, help them calculate a safe dosage. (FDA advisory panel has no recommendation at this time)
- \* For all ages, discourage the use of multiple-ingredient cough and cold medicines. (Reason: risk of

overdosage).

#### HONEY AS A COUGH SYRUP

- \* A recent study compared the efficacy of honey to 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.
- \* Paul IM. Arch Pediatr Adolesc Med. 2007; 161(12):1140-1146.

#### RETURN TO SCHOOL

- \* Your child can return to day care or school after the fever is gone and your child feels well enough to participate in normal activities. For practical purposes, the spread of coughs and colds cannot be prevented.

### FIRST AID

N/A

### TRIAGE ASSESSMENT QUESTIONS FOR COUGH

#### Call Ambulance Provider Now

- Severe difficulty breathing (struggling for each breath, unable to speak or cry because of difficulty breathing, making grunting noises with each breath)
- Child has passed out with coughing  
*R/O: apnea, anaphylaxis, cough syncope*
- Lips or face are bluish when not coughing  
*R/O: cyanosis and need for oxygen*
- Sounds like a life-threatening emergency to the triager

#### See More Appropriate Protocol

- Hoarse voice and deep barking cough  
*Go to Protocol: Croup (Pediatric)*
- Choked on a small object or food that could be caught in the throat  
*Go to Protocol: Choking - Inhaled Foreign Body (Pediatric)*
- Previous asthma attacks or use of asthma medicines  
*Go to Protocol: Asthma Attack (Pediatric)*
- Wheezing is present, but no previous diagnosis of asthma  
*Go to Protocol: Wheezing - Other Than Asthma (Pediatric)*

#### Go to ED Now

- Choked on a small object that could be caught in the throat  
*R/O: airway FB*
- Newborn less than 4 weeks with fever > 100.4° F (38.0° C) rectally  
*R/O: sepsis*

### **Go to ED Now (or to Office with PCP Approval)**

- Age 4 - 12 weeks with fever > 100.4° F (38.0° C) rectally  
*R/O: sepsis*
- Blood coughed up  
*R/O: pneumonia, FB, tuberculosis*
- Child sounds very sick or weak to the triager  
*R/O: sepsis*

### **Go to Office Now**

- Difficulty breathing (< 1 year old) not relieved by cleaning the nose
- Difficulty breathing (> 1 year old) present when not coughing
- Lips have turned bluish during coughing  
*R/O: bronchiolitis, FB, or pertussis*
- Rapid breathing (Breaths/min > 60 if < 2 mo; > 50 if 2-12 mo; > 40 if 1-5 years; > 30 if 6-12 years; > 20 if > 12 years old)  
*R/O: respiratory distress*
- Fever > 105° F (40.6° C)  
*R/O: serious bacterial infection*
- SEVERE chest pain  
*R/O: pneumothorax*

### **See Today in Office**

- Continuous (nonstop) coughing  
*Reason: may need codeine or asthma medicine*
- Age < 1 month old (EXCEPTION: coughs a few times)  
*R/O: pneumonia*
- Age 1-3 months with a cough for > 3 days  
*R/O: chlamydia, pertussis*
- Earache is also present
- Sinus pain (not just congestion) present > 24 hours  
*R/O: cough triggered by sinusitis*
- Fever present > 3 days  
*R/O: pneumonia*

## See Today or Tomorrow in Office

- Parent wants child seen

## See Within 3 Days in Office

- Chest pain that's present even when not coughing  
*R/O: pleurisy*
- Coughing has kept home from school for 3 or more days
- Symptoms of nasal allergies are also present  
*R/O: allergic cough or asthma*
- Cough has been present > 3 weeks  
*R/O: asthma, exercise-induced bronchospasm, FB, smoking in teens*

## Home Care

- Cough (lower respiratory infection) with no complications

## HOME CARE ADVICE FOR COUGH

1. REASSURANCE:
  - \* It doesn't sound like a serious cough.
  - \* Coughing up mucus is very important for protecting the lungs from pneumonia.
  - \* We want to encourage a productive cough, not turn it off.
2. HOMEMADE COUGH MEDICINE:
  - \* Before 1 year of age, only use warm clear fluids (e.g., water or apple juice) to treat the cough. Dosage: 1-3 teaspoons (5-15 ml) four times per day when coughing. Avoid honey.
  - \* After 1 year of age, 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.)
  - \* After 6 years of age, use COUGH DROPS to coat the irritated throat. (If not available, can use hard candy.)
3. OTC COUGH MEDICINE (DM):
  - \* OTC cough medicines are not recommended. (Reason: no proven benefit for children)
  - \* Honey has been shown to work better.
  - \* If the caller insists on using one AND the child is over 2 years old, help them calculate the dosage.
  - \* Use one with dextromethorphan (DM) that is present in most OTC cough syrups.
  - \* Indication: Give for severe coughs that interfere with sleep, school or work.
  - \* DM Dosage: See Dosage table. Teen dose 20 mg. Give every 6 to 8 hours.
  - \* Don't use under 2 years of age. (Reason: cough is a protective reflex)
4. COUGHING SPASMS:
  - \* Expose to warm mist (e.g., foggy bathroom).
  - \* Give warm fluids to drink (e.g., warm water or apple juice) if over 1 month old.
  - \* Amount: If under 1 year of age, give warm fluids in a dosage of 1-3 teaspoons (5-15 ml) four times per day when coughing. If over 1 year of age, use unlimited amounts as needed.
  - \* Reason: both relax the airway and loosen up the phlegm
5. VOMITING: For vomiting that occurs with hard coughing, reduce the amount given per feeding (e.g., in infants, give 2 oz. less formula) (Reason: Cough-induced vomiting is more common with a full stomach).
6. HUMIDIFIER: If the air is dry, use a humidifier (reason: dry air makes coughs worse).
7. FEVER MEDICINE: For fever above 102° F (39° C), give acetaminophen (e.g., Tylenol) or ibuprofen.
8. AVOID TOBACCO SMOKE: Active or passive smoking makes coughs much worse.
9. CONTAGIOUSNESS: Your child can return to day care or school after the fever is gone and your child feels well enough to participate in normal activities. For practical purposes, the spread of coughs and colds cannot be prevented.
10. EXPECTED COURSE:
  - \* Viral bronchitis causes a cough for 2 to 3 weeks.
  - \* Antibiotics are not helpful.
  - \* Sometimes your child will cough up lots of phlegm (mucus). The mucus can normally be gray, yellow or green.

11. CALL BACK IF:
- \* Difficulty breathing occurs
  - \* Wheezing occurs
  - \* Cough lasts over 3 weeks
  - \* Your child becomes worse

## REFERENCES

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