

Brought to you by:



Assistant Professor Dr Anand Gaurav, BPharm, PGDTT, MPharm, MTech (Bioinformatics), PhD

Assistant Professor Dr Shaik Ibrahim Khalivulla BSc, BEd, MSc, PhD

Faculty of Pharmaceutical Sciences, UCSI University



What is Cough?

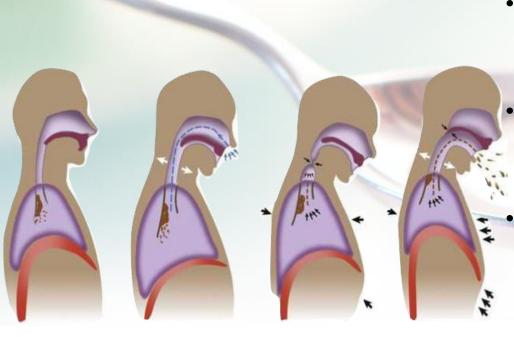
A cough is the body's way of removing foreign material or mucus from the lungs and upper airway passage.

A cough is a symptom not a disease.

A cough is a protective reflex and children who have no evidence of illness may cough an average of 11 times over a day

Phases of Cough Reflex

- Inspiratory phase: air inhalation lengthens the expiratory muscles (favourable length-tension relationship).
 - Compressive phase: contraction of expiratory muscles against a closed glottis leads to an increase in intrathoracic pressure.
- Expiratory phase: opening of the glottis results in high expiratory flow and audible coughs. During this phase, the airway undergoes dynamic compression and the expulsion of air facilitates airway debris and secretions clearance.



Inspiration

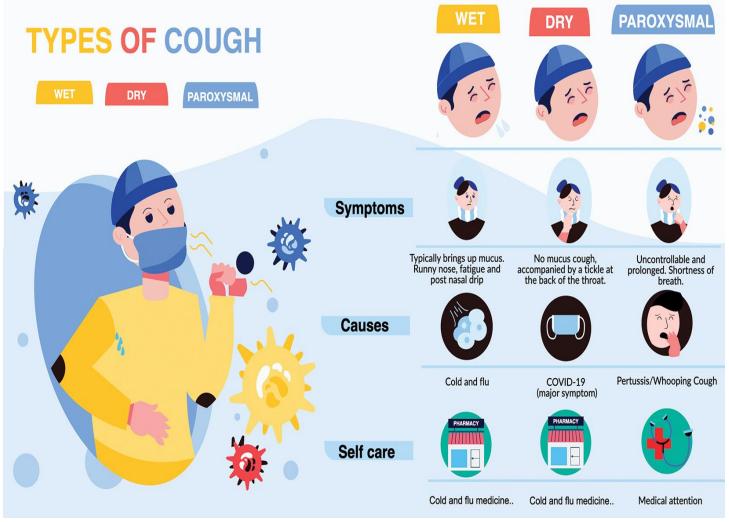
Irritation

Compression

Expulsion



Types of Coughs



8 types of cough affecting children and their causes

Really Gross, Wet Cough: Your child has had a cold for a week now, and it's getting worse. The cough is wet and phlegmy, and breathing seems to be faster than usual.

Whooping Cough: Your child has had a cold for more than a week and now she's having coughing fits. Between coughs, she has trouble breathing and makes a strange whooping sound as she inhales.

Raspy, Wheezy Cough: Your little one has had a cold for a few days, and now his cough has a raspy, whistling sound. He seems to be breathing rapidly and is very irritable.

Barking Cough: Your child went to bed with a stuffy nose, but he's been sleeping peacefully for a few hours. Suddenly, you hear what sounds like a barking seal in the next room.

Phlegmy Cough: Your child's cough sounds mucousy, and she also has a runny nose, sore throat, watery eyes, and a poor appetite.

Night-time Dry Cough in Kids: Your child has had an annoying cough off and on. It gets worse every night and any time he runs around.

Miserable Cough: For the first time in her life, your child is too wiped out to play. She's got a weak, hoarse cough, as well as a high fever, muscle aches, and sniffles.

Medicines for Wet Cough

- **Self-help:** If your children have a productive or wet cough, try the following measures:
 - Give plenty of fluids to drink, which can help thin the mucus and make it easier to cough up;
 - Give a hot, steamy shower to help break down the mucus (phlegm) and make it easier to cough up; and
 - Make them have plenty of rest.
- Medicines: Cough and cold medicines should NOT be given to children younger than 6 years of age. Ask your doctor or pharmacist about whether cough medicines should be given to children aged 6 to 11 years. Medicines that can be used to treat productive or wet coughs include expectorants and mucolytics.
- **Expectorants** are substances that help to loosen and expel mucus from the lungs. They include guaifenesin, ammonia, senega, sodium citrate and ipecacuanha. Side effects can include nausea, vomiting, diarrhea, dizziness, headache and rash.
- **Mucolytics**, such as bromhexine and acetylcysteine, help break down thick, sticky chest phlegm, making it easier to cough up. Side effects can include nausea, vomiting, diarrhea, dizziness, headache, rash and chest tightness.
- Things you should NOT do when your child has a productive cough include the following:
 - Do not give a cough suppressant as this suppresses the cough, causing a build-up of mucus (phlegm) in the lungs and increasing the risk of infection.
 - Do not give sedating antihistamines, as these tend to dry up the secretions and leave them in the lungs.
 - Do not give combination cough mixtures such as a cough suppressant and an expectorant.

Medicines for Dry Cough

- Self Help: If your child has a dry cough, try the following measures:
 - Honey can help treat a dry cough by coating and soothing the back of the throat (pharynx) and relieving the irritation that triggers a dry cough. Try giving the child warm water containing honey and lemon or taking one to 2 teaspoons of honey 30 minutes before bedtime. Note that honey should not be given to children younger than 12 months of age due to the risk of infant botulism (a rare bacterial infection).
 - Give them plenty of liquids.
 - Gargling salt water (in older children and adults) may also help with a dry cough associated with a cold and sore throat.
- Medicines: Cough and cold medicines should NOT be given to children younger than 6 years of age. Ask your doctor or pharmacist about whether cough medicines should be given to children aged 6 to 11 years.
- Medicines that can be used for dry coughs include cough suppressants.
- Cough suppressants, sometimes known as antitussives, can sometimes be used for the short-term treatment of dry coughs in adults. Cough suppressants work by suppressing the urge to cough, and include any of the active ingredients pholcodine, dextromethorphan, codeine, dihydrocodeine, and pentoxyverine. They are available as:
 - lozenges (which may also contain an antibacterial to help soothe a sore throat); or liquid or linctus (cough mixture).

When to see a doctor

When to See a Pediatrician for a Child's Cough



Frequent, persistent cough



Dry nighttime cough



Short, fast cough (with "whooping" sound)



Productive cough with persistent mucus, sneezing and nose-blowing



Loud, wet cough with faster breathing than normal







Wheezing cough



Key points to remember

Cough is a very common problem for children and is usually caused by respiratory tract infections.

Most young children get respiratory tract infections 6 to 12 times a year.

Most coughs don't require treatment and will not respond to antibiotics.

Cough medicines are of no proven benefit and may be harmful to children under the age of six years. **Ask your doctor or pharmacist** about whether cough medicines should be given to children aged 6 to 11 years.

Honey may be helpful but should only be used in children over 12 months old.



References

- 1. "Balminil DM, Benylin DM (dextromethorphan) dosing, indications, interactions, adverse effects, and more". Medscape Reference. WebMD. Retrieved 15 May 2020.
- 2. "Children's Cough Strips". C.Health, canoe.com. Retrieved 19 May 2020.
- 3. "Cough". https://www.rch.org.au/kidsinfo/fact_sheets/Cough/, retrieved 09 June 2020.
- 4. "Cough: dry cough" .
 https://www.mydr.com.au/respiratory-health/cough-drycough. retrieved 09 June 2020.
- 5. "Chesty cough". https://www.mydr.com.au/respiratory-health/chesty-coughs. retrieved 09 June 2020.



Thankyou



