



## FROM THE DESK OF THE DDSN MEDICAL CONSULTANT

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# COUGH (Part I)



Cough is an annoying symptom with many causes. Some are not serious, but a cough can be a sign of a serious problem. A cough is a defense mechanism to help clear excessive secretion or foreign matter from the airways leading to the lungs. A cough can be a factor in the spread of infections if the droplets coughed up spread carrying the infectious agents (bacteria or viruses). Coughing can be irritating and exhausting, and may lead to loss of sleep, hoarseness or a sore chest. However, it is a safety mechanism that protects our lungs, and rather than immediately taking a pill to stop the cough, we need to find its cause and deal with it. In our care of our consumers, we need to consider its cause and deal with the cough, its cause, and any complications.

## HOW A COUGH WORKS



A cough involves a complex chain of responses to a respiratory irritant. Receptors in the respiratory system send messages to the medulla region of the brain. A defensive cough is the response. The person takes a deep breath, then the airway is closed at the level of the vocal cords and the diaphragm and chest wall muscles coordinate to increase the pressure inside the chest. The vocal cords open and the muscles push the air out through the airways in a rush, which carries the mucus and matter out. If the respiratory muscles are weak or the mucus particularly sticky, then the clearance is not as effective as a defense. If the airway has irritants invading or has excessive secretions, the clearance from coughing is helpful in preventing the condition from getting worse.

## THINGS THAT MAKE US COUGH



Irritants that may provoke a cough response include smoke, dust or fumes. Tobacco smoke is a common cause. It may lead to a cough as it is a direct irritant or because it leads to a reaction that produces excessive secretions that need clearance by coughing.

The cough reflex protects the airways that lead to the lungs. In some circumstances, these airways get secretions that come from the sinuses, nose or mouth. This can happen if we have sinus or nose allergies or infections, and the secretions from the sinuses and nasal passages spill down the back of the throat causing a post nasal drip. The fluid irritates the trachea and a cough reflex with the sinus discharge is part of a “post nasal drip syndrome”.

Material that is in the gastrointestinal tract is dangerous if it enters the lungs and a cough will help clear it, reducing the chance of lung inflammation and infection. The material that is a concern is food coming down from the mouth and gastric contents coming up from the stomach. Usually, when we swallow it is coordinated to close the airway, but many of our consumers have swallowing problems and food may enter the airways or “go down the wrong way”. This will usually lead to a cough to clear the airway. If a person coughs during a meal, please stop feeding until they have settled and check for advice on safe feeding methods.

Many of our consumers also have Gastroesophageal Reflux Disorder (GERD), where stomach contents return up the esophagus and may spill into the airways to the lungs. If this occurs, coughing will help protect the lungs, but we also need to reduce the risk by using reflux management and precautions.

If food, secretions or gastric (stomach) contents enter the lungs, it is possible they can lead to aspiration pneumonia, which can be very serious. We need to be alert to coughs associated with eating.

*“Irritants that may provoke a cough response include smoke, dust or fumes. Tobacco smoke is a common cause.”*

## THINGS THAT MAKE US COUGH (cont'd)

Irritants in the airways may cause inflammation with swelling of the lining, extra secretions, and immune responses. This will lead to a cough reflex. If the irritant is a virus or bacteria we may get an infection in the bronchi (tubes in the lungs) causing bronchitis, or the lung spaces, causing pneumonia. In both of these cases, a cough may be the clue that the person has a respiratory illness. If it is acute, there will also be fever and rapid breathing.

Some people respond to irritants with marked narrowing of the smaller airways into the lungs, and we say they have reactive airways disease or asthma. These persons may get a cough with their wheezing during episodes of the reactive airways response to allergies, infection, fumes, smoke, or for some exercise or cold air.

Sometimes the airway irritation is from outside the passage with pressure from lymph nodes, aneurysms of blood vessels or tumors. Any of these may cause a cough.

Tuberculosis (TB) is still present in our communities, and we need to be aware that the old fashioned infection may be a cause for cough. That is why we test with PPD regularly to see if people have been exposed to the tuberculosis bacterium.

Another infection that may cause a prolonged and serious cough is Pertussis or whooping cough. We all need to be immunized against Pertussis, that is why we include it in the infant immunization shots.

Finally, some medications can provoke a persistent cough often without coughing anything up. If a person is on ACE inhibitors or beta-blockers, they may have a cough from the drug side effects.

*“Tuberculosis (TB) is still present in our communities, and we need to be aware that the old fashioned infection may be a cause for cough.”*

## PATTERNS OF COUGH



A cough may occur in a single episode. It may be acute and last less than 3 weeks. It may be a chronic symptom present for 3 - 8 weeks or longer.

A single episode of coughing may be due to exposure to an irritant in the environment or the person may have had a near choking episode with swallowing difficulty – check for this.

An acute episode is most likely due to a cold and post-nasal drip, particularly if the person has sneezing, runny nose (and possibly eyes), but no fever or body aches. However, it may signal a significant infection or other problems if there is fever, rapid breathing or difficulty breathing, chest pain or wheezing.

Chronic cough is often due to several factors in the environment and in the health of the person. Our management aims to reduce irritants (particularly tobacco smoke), and improve the person's well being by treating underlying conditions or infections.

**Clues to when we should worry about a cough. See part II.**

*“Chronic cough is often due to several factors in the environment and in the health of the person.”*

