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## Cough

### **What Is a Cough?**

A cough is a reflex that your body uses to clear your airways of mucus and/or other irritants such as dust or smoke. Coughing occurs when the irritant stimulates nerves in your respiratory tract. This sends the cough impulse to your brain which then signals you to inhale deeply and then use the muscles of your abdomen and diaphragm to forcefully push air from your lungs to expel the irritant.

Coughs may either be “productive” or “dry.” A productive cough is one that brings up mucus. Dry coughs do not produce anything. A cough can be voluntary, letting you control when you cough, or involuntary. You may also cough repeatedly.

Occasional coughing is normal. However, a cough that does not go away within several weeks or one that produces bloody mucus may indicate an underlying condition that requires medical attention. A cough itself rarely requires emergency care, but a very severe bout of coughing can break a rib or cause other injury to the chest or abdomen.

Completely suppressing a cough can be bad. If you need to cough but cannot, mucus can build up in the lungs, interfering with breathing and leading to infection and pneumonia.

## What Causes a Cough?

Most coughs are caused by viral or bacterial infections and clear up on their own. The following conditions often cause coughing:

- ❖ Respiratory tract infections such as the common cold, influenza (flu), laryngitis, bronchitis, pneumonia, or whooping cough
- ❖ Allergic rhinitis such as hayfever
- ❖ Smoking
- ❖ Postnasal drip (mucus dripping down the throat from the back of the nose, caused by a condition such as rhinitis)
- ❖ Asthma
- ❖ Chronic obstructive pulmonary disease (COPD)
- ❖ Gastroesophageal reflux disease (GERD)
- ❖ Some prescribed medicines (for example ACE inhibitors)

Rarely, a cough is a symptom of a more serious condition such as lung cancer, heart failure, a pulmonary embolism (a blood clot on the lung), or tuberculosis, a bacterial infection of the lungs.

## Who Is at Risk of a Cough?

Anyone can develop a cough, but the following factors make you more susceptible to developing a chronic (persistent) cough:

### Smoking

Smoking or being exposed to secondhand smoke can lead to many respiratory problems, including chronic cough, and can make a viral or allergic cough worse.

### Pollution

Environmental pollutants such as engine exhaust, ozone, pollens, dust, mold, and airborne chemicals can cause chronic coughing in both children and adults. Many people develop a cough each spring when there is a lot of pollen in the air.

## How Does a Cough Affect Me?

Occasional coughing is normal and it is how the body gets irritants or excess mucus out of the lungs. But persistent coughing can be a signal of something more serious. Frequent coughing can be exhausting, and may interfere with your daily routine and disrupt your sleep. A chronic cough or a severe bout of coughing can also cause the following symptoms:

- ❖ Headaches
- ❖ Dizziness
- ❖ Urinary incontinence
- ❖ Fractured ribs, especially in people with fragile bones or osteoporosis
- ❖ A broken blood vessel in the eye
- ❖ A nosebleed

## What Are the Signs and Symptoms of a Cough?

A chronic cough can occur with other signs and symptoms, which may include any of the following discomforts:

- ❖ A runny or stuffy nose
- ❖ A sensation of liquid running down the back of your throat
- ❖ Wheezing and shortness of breath
- ❖ Heartburn or a sour taste in your mouth
- ❖ In rare cases, coughing up blood



## How Is a Cough Diagnosed?

If your cough is associated with a cold, flu, or allergies, you probably will not need to have any tests done to diagnose it. However, depending on the severity of your cough, your doctor may have you undergo one or more of the following tests:

## **Chest X-ray**

Although a routine chest X-ray does not reveal the most common reasons for a cough, such as postnasal drip, acid reflux or asthma, it may help diagnose pneumonia or check for lung cancer and other lung diseases.

## **Computerized Tomography (CT scan)**

A CT scan takes X-rays from many different angles and then combines them to form cross-sectional images. This technique can provide more detailed views of your lungs. CT scans also may be used to check your sinus cavities for pockets of infection.

## **Lung Function Tests**

These involve breathing into a device and they measure how much air your lungs can hold and how fast you can inhale and exhale.

## **An Asthma Challenge Test**

This checks how well you can breathe before and after inhaling a drug called methacholine.

## **Endoscopic Tests**

These tests use an endoscope (or scope), which is a thin, flexible tube equipped with fiberoptics, a light, and camera that can be used to see structures within your body. You may be given sedatives or pain relievers to make the procedure less uncomfortable:

- ❖ Nasal endoscopy: the scope is inserted into your nostrils to better assess the state of the nasal mucosa and the openings to your sinuses
- ❖ Endoscopy: the scope is passed down your throat into your esophagus to check for signs of acid reflux in your stomach and esophagus
- ❖ Bronchoscopy: the scope is passed down your windpipe to check your bronchial tubes for signs of infection or obstruction

## What Are Common Treatments?

Treating a cough that has a known cause is usually straightforward. Your doctor may prescribe a cough suppressant or a type of medication that relaxes the air passages in your lungs. This will relieve your coughing. In many cases it is preferable not to suppress the cough which itself represents the body's defense mechanism. Cough suppressant medications include dextromethorphan and codeine. If your lungs are congested with mucus due to a cold, your doctor may prescribe an expectorant, which thins the mucus so that you can cough it up more easily. One expectorant is guaifenesin. Some cough medicines that you can buy without a prescription include both a cough suppressant and an expectorant.

When the cause of the cough cannot be determined, treatment may become more involved. You and your doctor may decide on any of these treatment options:

### Antihistamines and Decongestants

These are the standard treatment for allergies and postnasal drip and are usually given in combination. Antihistamines include loratadin, desloratadine, fexofenadine, cetirizine, pheniramine, and diphenhydramine. Some decongestants are ephedrine and pseudoephedrine, naphazoline, and oxymetazoline.

### Inhaled Corticosteroids

These anti-inflammatory drugs are the most effective treatment for asthma and asthma-related coughs, but the use of inhaled bronchodilators may also be required. These include flunisolide, fluticasone, triamcinolone, beclomethasone, and budesonide.

### Medications to Treat Acid Reflux

When lifestyle changes do not remedy acid reflux, you may be treated with a proton pump inhibitor to block acid production and allow your esophagus time to heal. Proton pump inhibitors include esomeprazole (Nexium®), lansoprazole (Prevacid®), omeprazole (Prilosec®), pantoprazole (Protonix®) or rabeprazole (Aciphex®).

If you have a cough, try to drink more water. It helps to dilute the mucus in your lungs and make coughing it up easier. You may also benefit from taking a hot shower or using a vaporizer.

### **Can a Cough Be Prevented?**

One of the best ways to reduce your risk of developing a serious cough is by stopping smoking and avoiding second-hand smoke. If you have asthma, COPD, or other lung conditions, you should also try to avoid areas with heavy air pollution. If your house is moldy or prone to mildew, you should try to fix these problems, since mold and mildew can provoke coughing.

### **Should I Call My Doctor?**

You should contact your doctor if your cough lasts longer than four weeks or if you have coughing with any of the following additional symptoms:

- ❖ A large amount of mucus
- ❖ Fever and chills
- ❖ Difficult, shallow, fast breathing with shortness of breath or wheezing
- ❖ Yellow or green mucus coming up from the lungs that lasts longer than two days.
- ❖ Vomiting
- ❖ Chest pain that is worse when you breathe deeply

### **For More Information**

For more information, refer to the following medical resources:

<http://www.webmd.com/cold-and-flu/tc/coughs-topic-overview>

<http://www.nlm.nih.gov/medlineplus/cough.html>

The content in this document is neither intended nor recommended as a substitute for seeking professional medical advice, diagnosis or treatment. It is recommended that you seek the advice of your physician or other qualified healthcare professional regarding any medical questions related to the topics contained within this document, your health or conditions.