

## Information for Patients Complaining of Cough

### Question: Is coughing normal or abnormal?

**Answer:** It is normal to cough occasionally. Excessive coughing or coughing that brings up blood or thick, discolored mucus is abnormal. Abnormal coughing can also leave you feeling exhausted or light-headed, cause chest or abdominal discomfort, or even cause you to “wet” yourself.

### Question: What causes cough?

**Answer:** Whether coughing is normal or abnormal, it has a purpose. Coughing is the body’s way of keeping foreign matter from getting down into your lungs—like when you swallow a piece of food “the wrong way” and immediately cough it up. Coughing also helps to clear excessive mucus from your air passages. You may have excessive mucus in your air passages if you are a smoker, if you have a cold or other respiratory infection, or if your normal mucus-clearing mechanisms do not work properly. Even if your coughing is not productive, it is a signal that something is wrong and that you need to see your doctor.

### Question: How does the body know when to make you cough?

**Answer:** The body has a cough “trigger.” Foreign matter or excessive mucus in your air passages irritates special nerve endings in your respiratory tract. When these nerve endings are irritated, they signal the body to cough.

### Question: What is the cause if a person cannot stop coughing?

**Answer:** Doctors divide coughing into three different categories, based on how long the cough has gone on. They call these categories *acute* (for coughing of less than 3 weeks), *subacute* (for coughing of 3 to 8 weeks), and *chronic* (for coughing of more than 8 weeks).

### Acute, Subacute, and Chronic Cough

**Acute Cough (less than 3 weeks):** Most often, caused by a “common cold.” It is usually worse for the first few days of a cold, then gradually goes away in 1 or 2 weeks, as you get over the cold.

**Subacute Cough (3 to 8 weeks):** Often, a cough that lingers after a cold or other respiratory tract infection

is over. A subacute cough may eventually go away without treatment but may need to be treated by a doctor after its cause is diagnosed. An example of a subacute cough that requires treatment is one that persists after whooping cough.

**Chronic Cough (more than 8 weeks):** Due to one or more of the conditions described in more detail below. The most common causes are upper airway cough syndrome (UACS), asthma, and gastroesophageal reflux disease (GERD). Chronic cough is also common in smokers.

### Question: Why is whooping cough (Pertussis) a common cause of subacute cough in adults? Isn't whooping cough a childhood disease of the past?

**Answer:** Most of us think of whooping cough as a disease of childhood, and most of us were vaccinated against it when we were children. However, the commonly used whooping cough vaccine gives protection for less than 10 years. Unless you were revaccinated as an adult, you can probably get whooping cough. US Government health authorities say that 28% of whooping cough cases are in adults.

Whooping cough gets its name from the loud noise that patients make when they cough. A fit of coughing ends with a loud noise when the patient takes a breath. This coughing can cause frequent vomiting.

There is a new safe and effective whooping cough vaccine that is recommended for adults up to 65 years old. You should ask your physician if you should receive it. Antibiotics are effective in whooping cough only when given early in the infection. A vaccine prevents the disease.

### Question: What about the causes of chronic cough?

**Answer:** The most common causes are UACS, asthma, and GERD.

### Common Causes of Chronic Cough

**Upper Airway Cough Syndrome (UACS):** UACS includes conditions that cause cough by affecting the nose, sinuses, or throat. They stimulate cough nerve endings by a combination of postnasal drip, irritation, or inflammation of the tissues. Upper respiratory tract infection, allergies, and exposure to environmental irritants, such as dusts and gases, are the usual cause of UACS.

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**Asthma:** Asthma is a disease in which the air passages of the lungs are inflamed and narrowed. This happens in response to “triggers,” such as allergens (pollen, dust mites, many others), cold air, or infections. Airway narrowing and increased “twitchiness” (or responsiveness to a “trigger”) can make the airway narrow and cause coughing.

**Gastroesophageal Reflux Disease (GERD):** GERD is caused when stomach juice backs up from the stomach into the esophagus, the tube that carries food from your mouth and throat down into your stomach. Stomach juice contains acid and enzymes that help to digest the food you swallow. If it backs up (refluxes) into your throat, it can cause burning pain and cause you to cough. The burning pain is sometimes called “heartburn.” However, most people who have chronic cough from GERD do not have heartburn. This is called “silent GERD.”

### Question: What about smoking as a cause of cough?

**Answer:** “Smoker’s cough” is often due to a lung disease called chronic bronchitis, a disease most commonly caused by cigarette smoking. Irritation from the smoke causes increased mucus production and inflammation of the large air passages of the lungs. Most smokers do not seek medical attention for this cough, because they assume it is from smoking. Sometimes, however, a smoker is coughing from another cause. Just as in nonsmokers, the cough could be from UACS, asthma, or GERD, but it also could be a warning of an even more serious disorder, like lung cancer.

### Question: If you are coughing from cigarette smoking and chronic bronchitis, will the cough go away if you stop smoking?

**Answer:** Typically, it will, but it can take 4 weeks to as long as a few months. If the cough seems different from your usual “smoker’s cough,” or if it persists despite stopping smoking for a month or longer, it definitely should be checked out by your doctor.

### Question: What other conditions cause chronic cough?

**Answer:** There are many other causes, but only a few occur often enough to discuss in this guide. The following are some of these more frequent causes:

- Nonasthmatic eosinophilic bronchitis has some similarities to asthma, but its only significant symptom is cough. It is seen more frequently in countries outside the United States but should be considered, especially if UACS, asthma, GERD, and cigarette smoking have been eliminated as causes of the coughing.
- An important cause of chronic cough is related to a class of medication often used to treat high blood pressure or heart problems. This group of drugs is known as angiotensin-converting enzyme inhibitors, or ACE inhibitors. They can produce a very annoying cough, often associated with throat irritation. The cough may not occur until a person has been on the medication for many months. It will always go away within days to weeks once the medication is stopped.
- Bronchiectasis is a disease in which parts of the lower air passages are damaged, dilated, and prone to recurrent infection. It can cause a cough that persists after a respiratory tract infection, lung cancer, and inflammatory or scarring diseases of the lungs.
- Chronic cough can also be due to heart failure.

There are many uncommon causes of chronic cough, too many to list here. You and your doctor can look them up in this guideline: Diagnosis and Management of Cough: ACCP Evidence-Based Clinical Practice Guidelines. CHEST 2006; 129(suppl):1S-292S.

### Question: Can you have more than one cause of chronic cough at the same time?

**Answer:** Absolutely. In fact, it is common for two causes to be present simultaneously, and, sometimes, even three or more will be present.

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### Question: Is it important to determine the specific cause(s) of a chronic cough?

**Answer:** Yes. Chronic coughing can be more than annoying. It can lead to complications, such as fatigue, sweating, and even broken ribs from really hard coughing. It can make you worry that something may be seriously wrong with your health. The best way to get rid of your cough and these complications is to treat the underlying cause(s).

### Question: What is the best way for a doctor to determine the cause(s) of a cough?

**Answer:** A combination of selected tests and targeted treatments allow the specific cause(s) of a chronic cough to be determined in the vast majority of cases. A lung specialist (pulmonologist) should be able to determine the cause(s) in about 90% of cases. When a cause cannot be determined, a referral and visit to a cough specialist (pulmonologist with particular expertise in cough) will usually result in an answer in the majority of these more difficult cases.

### Question: Does treatment for chronic cough usually work?

**Answer:** Yes. In over 90% of cases, the cough will be greatly improved or disappear entirely with treatment. The key is to use the correct medications at the right dose for each cause of the cough. The length of treatment is also very important. Whether the cause is a UACS, asthma, GERD, or one of the less common causes, it is not unusual for treatment to take weeks, to even months, to be completely successful. This is particularly true for GERD.

### Question: What are the main treatments for causes of chronic cough?

**Answer:** The best treatment for UACS is antihistamines. It is important that the correct antihistamine is used when treating the UACS. This is because all antihistamines are not equal. The older antihistamines are the sedating type—they make you sleepy. The newer antihistamines are the nonsedating type—they do not make you sleepy. A common error is to use one of the newer nonsedating-type antihistamines as part of the treatment of UACS. Unless the cause of the UACS is an allergy (only a small percentage of cases), the old-fashioned, more

sedating, antihistamines work much better. If the dose is gradually increased, and you stay on the medication consistently, the sedating effect is not a significant problem, in most cases.

The cough from asthma responds best to treatment with inhaled corticosteroids.

An important part of the treatment of GERD is a medication called proton-pump inhibitors that reduce or eliminate acid production in the stomach. However, GERD can cause cough even if the acid in your stomach is eliminated. Use of proton-pump inhibitors does not guarantee that the cough will improve or disappear. Changes in diet or elevating the head of your bed on 8-inch blocks may be needed for successful treatment of GERD.

Factors in treatment of other causes include completely stopping smoking, withdrawing ACE inhibitors, if they are found at fault, and eliminating environmental irritants or allergens.

If there is more than one cause of cough, it is critical to treat all the causes with the right medications at the same time.

### Question: Can a chronic cough be due to psychological problems or a habit?

**Answer:** Both “psychogenic” and habit cough can occur, but both are quite uncommon. In most cases, some specific abnormality is causing the chronic cough. A diagnosis of psychogenic or habit cough should usually only be made when other, more common, causes have been eliminated and the psychological (or habit) explanation seems to make sense to both the physician and the patient.

When the cause of chronic coughing is not determined, patients can become anxious and depressed. Because of this, patients and doctors need to understand that anxiety and depression may be *due* to the coughing, rather than *causing* it.

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### Question: Is cough contagious?

**Answer:** There are causes of cough due to infections, such as tuberculosis or whooping cough, that can be contagious. In the overwhelming majority of cases, however, a cough is not a risk to anyone else.

### Question: What about the use of cough medications?

**Answer:** Most so-called cough medications are not very effective. Although, it is usually most effective to treat the specific cause of the cough, cough medications can be helpful. When cough is not due to the common cold, most effective cough medications, by far, are narcotics, such as codeine. They should be used only when there is no effective treatment for the cause of the cough (such as some cancers involving the lung) and the cough is causing the patient a lot of distress (such as inability to sleep).

### Question: What tests are done to diagnose the cause(s) of chronic cough?

**Answer:** A chest x-ray is recommended for all patients with chronic cough. If the x-ray has negative results, your doctor may decide not to order additional tests until he/she has seen your response to therapy. If you do not respond to treatment as expected, your doctor may also order a variety of other tests. These may include breathing tests, blood studies, sputum studies, other x-rays (such as those of the sinuses), barium swallow, and other gastrointestinal tests, such as 24-hour monitoring of the function of the esophagus, a CAT scan of the lungs, or a bronchoscopy.

Breathing tests are done primarily to see if you might have asthma as a cause of cough. If the initial test shows you have normal lung function, then a test may be done to detect overactivity of the air passages of the lungs. This test is called a bronchoprovocation challenge, and it should be done before asthma is ruled out as the cause of your cough. This test involves breathing a medication (most often one called methacholine). You breathe this medication in, and then the breathing test is repeated. If you have asthma, your lung function will decrease at least 20% for a short period of time. The decrease can usually be reversed quickly by inhaling a common asthma medication.

A bronchoscopy involves putting a thin, flexible tube, containing a tiny video camera, through the nose or mouth, down into the air passages of the lungs. This is a relatively painless and safe test when done by a lung specialist. This test can detect tumors, infections, foreign bodies, or other abnormalities of the lower air passages that could be causing chronic cough. It is only needed in a small number of patients who usually have a significant abnormality on the initial chest x-ray. When the initial chest x-ray has normal results, a bronchoscopy result will also typically be normal, and, therefore, it should not be one of the first tests done. However, later in the workup, if the common causes have been eliminated, a bronchoscopy test should be done, because, occasionally, an uncommon cause of the chronic cough is discovered by this test.