

## Asthma

Asthma is a chronic disease that affects a person's airways (the tubes that carry air in and out of the lungs). During asthma attacks, the inside walls of the airways become inflamed or swollen. The inflammation makes the airways very sensitive, and they tend to react strongly to things the patient is allergic to or finds irritating.

During an asthma attack, muscles around the airways tighten up, making the airways narrower and allowing less air to flow through. This causes symptoms like wheezing (a whistling sound when you breathe), coughing, chest tightness and trouble breathing.

Asthma cannot be cured, but most people with asthma can control it so that they experience few and infrequent symptoms while still living active lives.

### Cause

Doctors do not know what specifically causes most cases of asthma because a person's airways can become inflamed due to any number of reasons. If other people in your family have asthma you are more likely to develop it. New research suggests that being exposed to tobacco smoke, pollution, infections and some allergens early in life may increase a person's chances of developing asthma.

There are many things in the environment that can bring about asthma symptoms and lead to asthma attacks. Some of the more common things include exercise, allergens, irritants and viral infections. Some people have asthma only when they exercise or have a viral infection.

The following allergens can cause asthma symptoms:

- Animal dander
- Dust mites (contained in house dust)
- Cockroaches
- Pollen from trees and grass
- Mold (indoor and outdoor)

The following irritants can cause asthma symptoms:

- Cigarette smoke
- Air pollution
- Cold air or changes in weather
- Strong odors from painting or cooking
- Scented products
- Strong emotional expression (including crying or laughing hard) and stress

Other factors that can cause asthma symptoms include the following:

- Medicine, such as aspirin and beta-blockers
- Sulfites in food (dried fruit) or beverages (wine)
- A condition called gastroesophageal reflux disease that causes heartburn and can worsen asthma symptoms, especially at night
- Irritants or allergens that you may be exposed to at your work, such as special chemicals or dusts
- Infections

This is not a complete list of all the things that can bring on asthma symptoms, and people can have trouble with one or more of these items or conditions. It is important for asthma sufferers to learn the things that cause them problems. Doctors can help identify factors and substances that instigate asthma in their patients.

## Frequency of Occurrence

Asthma is the most common long-term disease among children. According to the Centers for Disease Control and Prevention (CDC), over 25 million Americans (adults and children) have asthma.

If a person has a parent with asthma, he or she is three to six times more likely to develop asthma than is a person who does not have a parent with asthma.

## Symptoms and Signs

Common asthma symptoms include:

- Coughing: Coughing from asthma is often worse at night or early in the morning, making it hard to sleep.
- Wheezing: Wheezing is a whistling or squeaky sound that happens when breathing.
- Chest tightness
- Shortness of breath: Some people say they cannot catch their breath, or they feel breathless or out of breath. They feel like they cannot get enough air in or out of their lungs.
- Faster or noisier breathing.

Not all people have these symptoms, and they may vary from one asthma attack to another. Symptoms can differ in how severe they are, from being mildly annoying to serious or life-threatening.

Asthma symptoms also differ in how often they occur. Some people have symptoms only once every few months, while others have them every week. Still, others might experience symptoms every day. With proper treatment, however, most people with asthma can expect to experience few or no symptoms.

## Diagnosis

Doctors investigating a potential case of asthma will ask the patient questions about the following topics:

- Does the patient experience periods of coughing, wheezing, shortness of breath or chest tightness?
- Do they get colds that seem to "go to the chest" or take more than 10 days to get over?
- Do they take medicines to help their breathing?

- Do they have a family history of asthma and allergies?
- Does being around certain substances cause their symptoms or make them worse?

A doctor will listen to the patient's breathing and look for signs of asthma or allergies. They might use a device called a spirometer to check how the patient's lungs are working. The device measures how much air a person can blow out of their lungs after taking a deep breath and how fast the air is expelled.

Other tests to determine if a patient has asthma include:

- Allergy testing to find out if and what allergens affect the patient
- A test in which the patient uses a peak flow meter every day for two weeks to monitor their breathing over time
- A test to see how the airways react to exercise
- Tests to see if the patient has gastroesophageal reflux disease
- A test to see if the patient has a sinus disease

Other tests, such as a chest x-ray or an electrocardiogram, may be needed to find out if a foreign object or other lung diseases or heart disease could be causing the symptoms. A correct diagnosis is important because asthma is treated differently from other diseases with similar symptoms.

## Treatment

Doctors work with patients to develop asthma self-management plans for controlling asthma on a daily basis and an emergency action plan for stopping asthma attacks. These plans will tell patients what medicines they should take, and other things they should do, to keep their asthma under control.

First and foremost, asthma patients must take responsibility for following their treatment plan, and they should always have their asthma medications on hand because nobody can predict when an attack will occur.

Aspects of asthma treatment include:

- Working closely with a doctor to decide on treatment goals and learn how to meet those goals.
- Avoiding things that bring on asthma symptoms or make symptoms worse. Doing so can reduce the amount of medicine the patient needs to control their asthma.
- Using asthma medicines. Allergy medicine and shots can help control asthma in some people.
- Recognizing when symptoms are getting worse and responding quickly to prevent or stop an asthma attack.

There are two main types of medicines for asthma:

- Quick-relief medicine: Taken at the first signs of asthma symptoms for immediate relief. Patients feel the effects of these medicines within minutes. Patients should take quick-relief medicines when they first begin to feel asthma symptoms, such as coughing, wheezing, chest tightness or shortness of breath. They should carry a quick-relief inhaler with them at all times in case of an asthma attack.
- Long-term control medicine: Taken every day, usually over long periods of time, to prevent symptoms and asthma episodes or attacks. Patients will feel the full effects of these medicines after taking them for a few weeks. Inhaled corticosteroids (or steroids for short) are the preferred medicine for

controlling mild, moderate and severe persistent asthma. They are generally safe when taken as directed by a doctor.

## Resources

The following websites contain more information on asthma:

- The Centers for Disease Control and Prevention: [www.cdc.gov](http://www.cdc.gov)
- National Heart, Lung and Blood Institute: [www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)

Information on this page was collected from the website for the National Heart, Lung and Blood Institute, one of the National Institutes of Health. Their website is located at [www.nhlbi.nih.gov](http://www.nhlbi.nih.gov).

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