

## What Causes Asthma

Since asthma has a genetic origin and is a disease you are born with, passed down from generation to generation, the question isn't really "what causes asthma," but rather "what causes asthma symptoms to appear?" People with asthma have inflamed airways which are super-sensitive to things which do not bother other people. These things are called "triggers."

Although asthma triggers vary from person to person based on if you have allergic asthma or non-allergic asthma, some of the most common include:

- Substances that cause allergies (allergens) such as dust mites, pollens, molds, pet dander, and even cockroach droppings. In many people with asthma, the same substances that cause allergy symptoms can also trigger an asthma episode. These allergens may be things that you inhale, such as pollen or dust, or things that you eat, such as shellfish. It is best to avoid or limit your exposure to known allergens in order to prevent asthma symptoms.
  
- Irritants in the air, including smoke from cigarettes, wood fires, or charcoal grills. Also, strong fumes or odors like household sprays, paint, gasoline, perfumes, and scented soaps. Although people are not actually allergic to these particles, they can aggravate inflamed, sensitive airways. Today most people are aware that smoking can lead to cancer and heart disease. What you may not be aware of, though, is that smoking is also a risk factor for asthma in children, and a common trigger of asthma symptoms for all ages. It may seem obvious that people with asthma should not smoke, but they should also avoid the smoke from others' cigarettes. This "secondhand" smoke, or "passive smoking," can trigger asthma symptoms in people with the disease. Studies have shown a clear link between secondhand smoke and asthma, especially in young people. Passive smoking worsens asthma in children and teens and may cause up to 26,000 new cases of asthma each year.
  
- Respiratory infections such as colds, flu, sore throats, and sinus infections. These are the number one asthma trigger in children.
  
- Exercise and other activities that make you breathe harder. Exercise—especially in cold air—is a frequent asthma trigger. A form of asthma called exercise-induced asthma is triggered by physical activity. Symptoms of this kind of asthma may not appear until after several minutes of sustained exercise. (When symptoms appear sooner than this, it usually means that the person needs to adjust his or her treatment.) The kind of physical activities that can bring on asthma symptoms include not only exercise, but also laughing, crying, holding one's breath, and hyperventilating (rapid, shallow breathing). The symptoms of exercise-induced asthma usually go away within a few hours. With proper treatment, a child with exercise-induced asthma does not need to limit his or her overall physical activity. (See the page on Exercise-Induced Asthma .)
  
- Weather such as dry wind, cold air, or sudden changes in weather can sometimes bring on an asthma episode.
  
- Expressing strong emotions like anger, fear or excitement. When you experience strong emotions, your breathing changes -- even if you don't have asthma. When a person with asthma laughs, yells, or cries hard, natural airway changes may cause wheezing or other asthma symptoms.

- Some medications like aspirin can also be related to episodes in adults who are sensitive to aspirin. Irritants in the environment can also bring on an asthma episode. These irritants may include paint fumes, smog, aerosol sprays and even perfume. People with asthma react in various ways to these factors. Some react to only a few, others to many. Some people get asthma symptoms only when they are exposed to more than one factor or trigger at the same time. Others have more severe episodes in response to multiple factors or triggers. In addition, asthma episodes do not always occur right after a person is exposed to a trigger. Depending on the type of trigger and how sensitive a person is to it, asthma episodes may be delayed. Each case of asthma is unique. If you have asthma, it is important to keep track of the factors or triggers that you know provoke asthma episodes. Because the symptoms do not always occur right after exposure, this may take a bit of detective work.

**What Happens During an Asthma Episode?** During normal breathing, the airways to the lungs are fully open, allowing air to move in and out freely. But people with asthma have inflamed, super-sensitive airways. Their triggers cause the following airway changes, which in turn cause asthma symptoms:

- The lining of the airways swell and become more inflamed
  - Mucous clogs the airways
  - Muscles tighten around the airways (bronchospasm) These changes narrow the airways until breathing becomes difficult and stressful, like trying to breathe through a straw stuffed with cotton.
- Why Does My Asthma Act Up at Night?** For reasons we don't fully understand, uncontrolled asthma -- with its underlying inflammation -- often acts up at night. It probably has to do with natural body rhythms and changes in your body's hormones, as well as the fact that some symptoms appear hours after you come in contact with a trigger. The important thing to know about nighttime asthma is

that, working with your doctor, you should be able to sleep through the night. **The Role of Heredity in Asthma.** Like baldness, height and eye color, the capacity to have asthma is an inherited characteristic. Yet, although you may be born with the genetic capability to have asthma, asthma symptoms do not automatically appear. We do not know for certain why some people get asthma and others do not. However, doctors doing research have found that certain traits make it more likely that a person will develop asthma.

- Heredity. To some extent, asthma seems to run in families. People whose brothers, sisters or parents have asthma are more likely to develop the illness themselves.

- Atopy. A person is said to have atopy (or to be atopic) when he or she is prone to have allergies. For reasons that are not fully known, some people seem to inherit a tendency to develop allergies. This is not to say that a parent can pass on a specific type of allergy to a child. In other words, it doesn't mean that if your mother is allergic to bananas, you will be too. But you may develop allergies to something else, like pollen or mold. In addition, several factors must be present for asthma symptoms to develop:

- Specific genes must be acquired from parents.
- Exposure to allergens or triggers to which you have a genetically programmed response.
- Environmental factors such as quality of air, exposure to irritants, behavioral factors such as smoking, etc.