# ASTHMA

Asthma is a chronic condition in which the airways that carry air to the lungs are inflamed and narrowed.

Inflamed airways are very sensitive, and they tend to react to things in the environment called triggers, such as substances that are inhaled. When the airways react, they swell and narrow even more, and also produce extra mucus, all of which make it harder for air to flow to the lungs. The muscles around the airways also tighten, which further restricts air flow.



### ****Asthma symptoms****

When the airways react to asthma triggers, people can experience what's called an asthma flare-up or [asthma attack](https://www.livescience.com/39205-asthma-attacks-back-school-kids.html). Symptoms of an asthma attack include: coughing, chest tightness, wheezing and trouble breathing, according to the [Centers for Disease Control and Prevention](http://www.cdc.gov/ASTHMA/).

Some people have mild asthma symptoms, or only experience asthma symptoms in response to certain activities like exercising. Other people have more serve and frequent symptoms, which may need treatment with medication.

### ****What causes asthma?****

The underlying cause of asthma is not known, but it's thought to be due to a combination of genetic and environmental factors. People with asthma may have genetic risk factors that make them more susceptible to the disease, and certain environmental factors, such as exposure to allergens or certain viral infections in infancy, may increase the risk of developing the disease, [according to the National Heart, Lung and Blood Institute (NHLBI)](http://www.nhlbi.nih.gov/health/health-topics/topics/asthma/causes.html).

Symptoms of asthma can be caused by triggers. Common asthma triggers include: tobacco smoke, dust mites, air pollution, pollen, mold, respiratory infections, physical activity, cold air and allergic reactions to some foods.

### ****Asthma diagnosis****

Asthma shows up in different ways in different people, said Dr. David Beuther, of the Division of Pulmonary, Critical Care and Sleep Medicine at National Jewish Health Hospital in Denver. People sometimes first discover they have asthma because they have a persistent cough or wheeze and shortness of breath that won't go away, which brings them to the doctor, Beuther said.

Asthma can sometimes be missed because people think they are just getting frequent colds or other respiratory infections, but they actually have poorly controlled asthma, Beuther said. A patient who has frequent chest colds probably needs to be evaluated for asthma, he said.

In other cases, people are misdiagnosed with asthma when they actually don't have the condition, Beuther said.  For example, people with [obesity](https://www.livescience.com/34787-obesity-high-bmi-causes-diabetes-heart-disease.html) can have symptoms that mimic asthma, he said, because extra weight can make the chest stiffer and heavier, which in turn makes breathing more difficult. People with acid reflux or nasal allergies can also have symptoms that mimic asthma, he said.

To diagnose asthma, doctors perform a lung function test called spirometry, to see if there's a problem with the way the lungs are working, Beuther said. This test measures how much air people are able to blow out of the lungs, and how quickly they do this, [according to the American Lung Association](http://www.lung.org/lung-disease/asthma/learning-more-about-asthma/symptoms-diagnosis-and-treatment.html).

### ****Asthma treatment****

There is no cure for asthma. People who experience asthma symptoms should speak with their doctor about how to best treat and manage their condition.

Managing asthma usually involves avoiding asthma triggers, and taking medications to prevent or treat symptoms.

The goal of asthma therapy is for the patient to be symptom-free, Beuther said. "We want you to be able to do what you want to do, without limitation," and with the fewest side effects from treatment, Beuther said. "[People] feel like they have to suffer through symptoms, but our goal is to eliminate or nearly eliminate symptoms," he said.

### ****Asthma medication****

There are two types of medications to treat asthma: quick-relief medications and long-term medications.

Quick-relief medications provide relief from acute asthma symptoms. A common quick-relief medication is inhaled short-acting beta2-agonists, which help relax muscles around the airways, allowing more air to flow through them. People with asthma should have a quick-relief inhaler with them at all times to case they need it, [according to the NHLBI](http://www.nhlbi.nih.gov/health/health-topics/topics/asthma/treatment.html).

Long-term medications are typically taken daily to help prevent asthma symptoms from starting in the first place. A common medication is inhaled corticosteroids, which reduce airway inflammation and make airways less sensitive. Other long-term medications include omalizumab, a shot given one or two times a month to prevent the body from reacting to asthma triggers, and inhaled long-acting beta2-agonists, which help open airways, according to NHLBI.

If patients are taking long-term medications, they should meet with their doctor frequently to assess how well the medications are working, or if the dose needs to be adjusted, Beuther said.

It's important that people who are taking long-term medications do not suddenly stop taking the medications if they feel well, because symptoms can return, Beuther said. People who consistently take their medication end up taking less over the long term because their condition improves, and the dose can be lowered, he said.

### ****Childhood asthma****

Anyone can have asthma, but it most often starts in childhood. Of the 25 million asthma sufferers in the United States, 7 million are children, [according to the NHLBI](http://www.nhlbi.nih.gov/health/health-topics/topics/asthma/atrisk.html).

Most children with asthma develop it before age 5, [according to the American Academy of Allergy Asthma & Immunology (AAAAI)](http://www.aaaai.org/conditions-and-treatments/asthma.aspx). In children, asthma can appear as wheezing or whistling sound when breathing, coughing, rapid or labored breathing, complaints of chest pain and feeling weak or tired, the academy says

In children, asthma is the leading cause of emergency room visits, hospitalizations and missed days of school, [according to the Mayo Clinic](http://www.mayoclinic.org/diseases-conditions/childhood-asthma/basics/definition/con-20028628). A child's asthma symptoms may continue into adulthood, the Mayo Clinic says.

Some children with asthma will "grow out" of it as they get older, meaning the condition goes away completely, Beuther said. This may happen because as people grow up, their lungs become larger and more open, he said, and people experience hormone changes that may also affect asthma risk. On the other hand, people who develop asthma as an adult tend to have the condition for life, he said.

Some studies suggest that [inhaled corticosteroids may slightly restrict children's growth](https://www.livescience.com/46850-asthma-medications-restrict-kids-growth.html). A 2014 review study, published in the journal The Cochrane Library, found that children who took daily doses of the medication grew about 0.2 inches (0.5 cm) less during a year than those who took a placebo or nonsteroidal medications. However, the researchers said that this effect "seems minor" compared with the known benefits of the drugs.

"Without [these drugs], poorly controlled asthma is quite a big risk," said Beuther, who was not involved in the study. The NHLBI says that inhaled corticosteroids are generally safe when taken as prescribed.