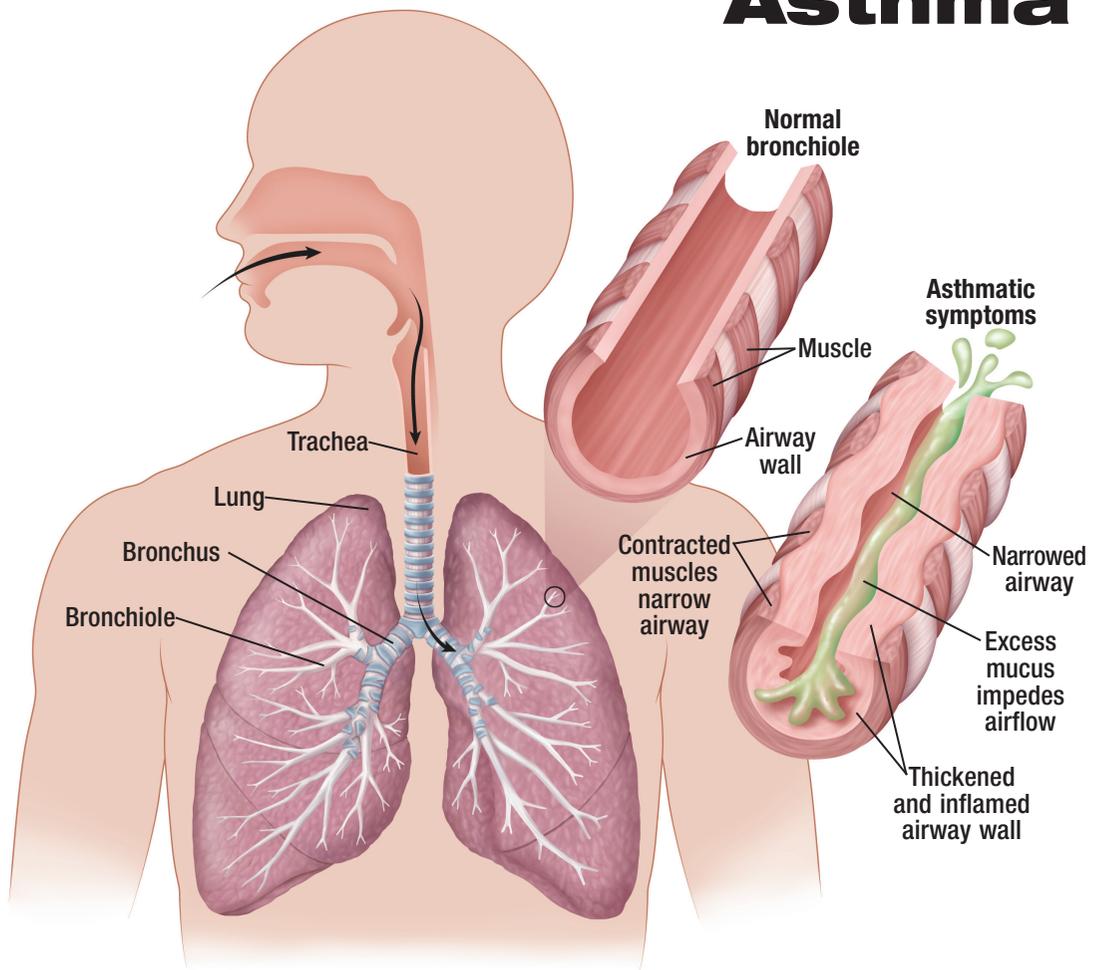


Asthma



Reactive Airway Disease

Asthma is a disease of the lungs caused by inflammation and narrowing of the airways, which results in symptoms of shortness of breath, coughing, wheezing, and a burning or tight sensation in the throat or chest. Asthma is sometimes referred to as “reactive airway disease” because it responds to certain triggers (e.g., allergies, upper respiratory tract infections, drugs, exercise), causing the muscles around the airways to tighten and making it even more difficult to breathe. Excess mucus production and cough are also common problems.

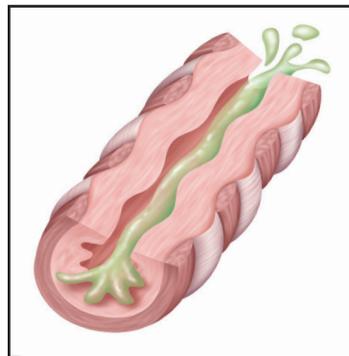
Asthma can be diagnosed using the history of symptoms along with a physical examination and breathing test (spirometry). Spirometry testing can compare how well the lungs work before and after inhaling medicine that dilates (widens) the airways.

Although asthma is a chronic condition without a cure, it can be controlled through proper diagnosis, avoiding triggers, immunotherapy (allergy shots), and treatment with inhaled or oral medication. If asthma is well controlled, it has little impact on lifestyle. Uncontrolled or poorly treated asthma can seriously affect a person’s well-being or even be fatal.

The proper maintenance medication will control asthma symptoms over a long period of time. In addition, every patient with asthma should have a personal action plan for treating symptom flare-ups, including instructions on the use of a personal peak flow meter as well as how and when to use inhaled and oral medications to treat an acute asthma attack. When asthma symptoms are managed with maintenance medications and acute flare-ups are treated early by following an asthma action plan, the risk of serious complications is significantly lowered.

Chronic But Manageable Respiratory Condition

Asthma is a common condition in the United States, with more than 20 million sufferers. Symptoms are often noticed in early childhood, although asthma can develop at any age. Those most likely to develop asthma have a history of allergies or a family member with asthma or allergies, known as *atopic asthma*. *Occupational asthma* is caused by workplace hazards such as inhaled chemicals or dust. There are also people who develop asthma symptoms during vigorous exercise, a condition known as *exercise-induced asthma*. A person can have more than one cause or trigger for asthma symptoms.



Inflammation of the airway linings causes swelling, which narrows the breathing passages and results in shortness of breath, coughing, and wheezing.

Diagnosis and Spirometry Testing

Regardless of the cause, people with asthma share a common problem—they have difficulty breathing as a result of reactive airways, which tighten during an asthma attack due to inflammation and swelling of the airway lining, and muscle reactivity, which narrows the airways even further. Individual symptoms and triggers may vary, and as a result, diagnosis can be difficult without further testing.

Asthma is diagnosed using a history of symptoms and their triggers, a physical examination, and spirometry testing. *Spirometry* is a breathing test in which the patient blows as hard and as long as possible into a tube connected to a computer. The test is repeated two or three times to increase the accuracy of the readings. Spirometry reveals the amount of air that can be forced out of the lungs and how fast the air is pushed out. This test can be used for diagnosis and monitoring asthma, as well as checking during office visits to see how well asthma medications are working to improve breathing.

Asthma patients are often advised to use a pocket-sized version of the spirometer, called a *peak flow meter*, to determine their personal best lung function at home. Three readings on the peak flow meter, twice a day for several weeks, can be charted by the patient and used to determine baseline breathing capacity. This information is useful to monitor asthma during a flare-up. A peak flow meter is an important part of an asthma action plan; it can alert patients to begin early treatment of an asthma attack before symptoms become serious.

Maintenance and Rescue Medications

Medications used to treat asthma fall into two categories: maintenance medications or quick-relief medicines. Maintenance medications are taken every day to control asthma symptoms and avoid flare-ups. These are long-acting medications that treat the inflammation (corticosteroids), narrowing of airways (bronchodilators), or both. They are available in inhaled or oral forms. They are not intended to work during an acute asthma attack. Leukotriene inhibitors, another category of oral medications, are also used to stop airway inflammation.

Quick-relief medications, sometimes called *rescue medications*, are short-acting inhaled bronchodilators. These medications are intended to work quickly when asthma symptoms worsen. They do not take the place of maintenance medications. They should be carried at all times by a patient with asthma, especially when away from home. They are also used just prior to physical activity in people who have exercise-induced asthma.

Asthma is a life-long illness, but if managed properly, it does not have to interfere with a normal life style. Staying healthy with asthma means avoiding triggers known to worsen symptoms. Maintenance medications should be taken as directed, an asthma action plan should be followed when asthma symptoms worsen. Regular office visits should be scheduled for accurate monitoring of asthma using spirometry testing and adjustment of medications, if needed.