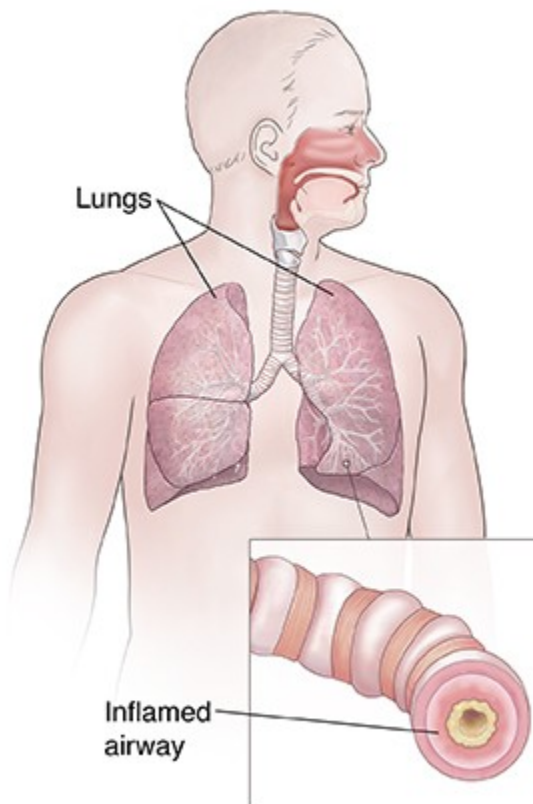


Understanding Asthma

Asthma is a long-term (chronic) lung condition. It involves the airways (bronchial tubes). It happens when a trigger causes your airways to swell and become narrow. The muscles around your airways start to tighten. When your airways start to narrow, air can't move in and out of your lungs very well. Mucus also builds up along the airways. This makes it even harder to move air in and out of your lungs.

Experts are not exactly sure what causes asthma. It may be caused by a mix of inherited and environmental factors. People with asthma may have no **symptoms** until they are exposed to an allergen or trigger.



Healthy lungs

Inside your lungs there are branching airways made of stretchy tissue. Each airway is wrapped with bands of muscle. The airways get smaller as they go deeper into the lungs. The smallest airways end in clusters of tiny balloon-like air sacs (alveoli). These clusters are surrounded by blood vessels. When you breathe in (inhale), air enters the lungs. It travels down through the airways until it reaches the air sacs. When you breathe out (exhale), air travels up through the airways and out of the lungs. The airways make mucus that traps particles you breathe in. Normally, the mucus is then swept out of the lungs by tiny hairs (cilia) that line the airways. The mucus

is swallowed or coughed up during your day.

What the lungs do

The air you inhale contains oxygen. When oxygen reaches the air sacs, it passes into the blood vessels around the sacs. Your blood then sends oxygen to all of your cells. As you exhale, carbon dioxide is removed in a similar way from the blood around the air sacs, and then from your body.

When you have asthma

People with asthma have very sensitive airways. This means the airways react to certain things called triggers. Triggers can include pollen, dust, or smoke. Triggers cause inflammation. This makes the airways swell and become narrow. This is a long-lasting (chronic) problem. Your airways may not always be narrow enough so that you notice breathing problems.

Symptoms of chronic inflammation include:

- Coughing (chronic)
- A feeling of tightness in your chest
- Feeling short of breath
- Wheezing (a whistling noise, especially when breathing out)
- Low energy or feeling tired

In some people, over time chronic mild [inflammation](#) can lead to lasting (permanent) scarring of airways and loss of lung function.

Asthma flare-ups

When sensitive airways are irritated by a trigger, the muscles around the airways tighten. The lining of the airways swells. Thick, sticky mucus increases and partly clogs the airways. All of this makes it harder to breathe.

Symptoms of flare-ups may include:

- Coughing, especially at night. You may not be able to sleep because of coughing.
- Getting tired or out of breath easily
- Wheezing
- Chest tightness
- Faster breathing when at rest

Flare-ups can be mild or life-threatening. In a severe flare-up, the muscle tightening, swelling, and mucus are worse. It's very hard to breathe. Your body can't get enough oxygen and can't remove carbon dioxide. Waste gas is trapped in the alveoli. Gas exchange can't occur. The body is not getting enough oxygen. Without oxygen, body tissues, especially brain tissue, begin

to get damaged. If this goes on for long, it can lead to severe brain damage or death.

Call 911 (or have someone call for you) if you have any of these symptoms and they are not relieved right away by taking your quick-relief medicine as prescribed:

- Trouble breathing
- Feeling too short of breath to talk or walk
- Lips or fingers turning blue
- Feeling lightheaded or dizzy, as though you are about to pass out
- Peak flow less than 50% of your personal best, if you use a peak flow meter

Managing your asthma

Asthma is a long-term condition. So it's important to work with your healthcare provider to manage it. If you have asthma, you can prevent flare-ups. Develop an Asthma Action Plan with your [healthcare provider](#). It can help control your asthma and manage your symptoms. An Asthma Action Plan also tells you and your family or friends what to do if your asthma flares up or gets worse. Wear a medical alert bracelet or necklace with information about your asthma, especially when traveling.

Take your medicine as prescribed. Also learn about your asthma triggers. Knowing what causes your asthma to flare up in the first place can help you prevent future breathing problems.

If you smoke, get help to quit. Don't use e-cigarettes or vaping devices because they have been linked to lung injury.

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