



## **What is COPD?** **(Chronic Obstructive Pulmonary Disease)**

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### **What Is COPD?**

COPD, or Chronic Obstructive Pulmonary Disease, is a disease that makes it hard to breathe. This is a progressive disease, meaning it gets worse over time. COPD can cause coughing that produces large amounts of a slimy substance called mucus, wheezing, shortness of breath, chest tightness, and other symptoms.

Other names for COPD are chronic bronchitis; or emphysema.

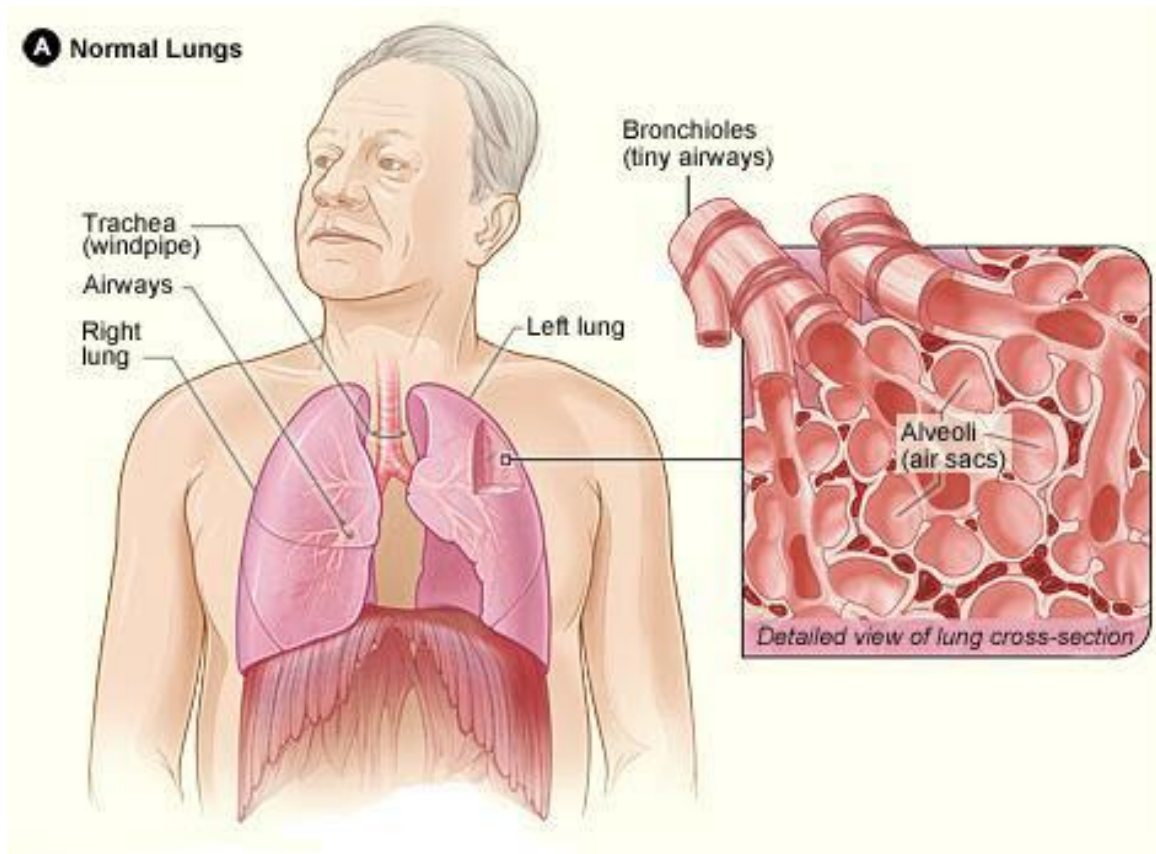
### **What are the causes of COPD?**

The leading cause of COPD is cigarette smoking is. Most people who have COPD smoke or used to smoke. However, 1 out of 4 people (25%) of people with COPD never smoked. Long-term exposure to other lung irritants—such as air pollution, chemical fumes, or dusts—also may contribute to COPD. In a few cases, COPD is caused by a rare genetic condition called alpha-1 antitrypsin (AAT) deficiency.

### **What happens to the lungs of a person has COPD?**

To understand COPD, it helps to understand how the lungs work. The air that you breathe goes down your windpipe into tubes in your lungs called bronchial tubes or airways.

Within the lungs, your bronchial tubes branch many times into thousands of smaller, thinner tubes called bronchioles. These tubes end in bunches of tiny round air sacs called alveoli.



Small blood vessels called capillaries run along the walls of the air sacs. When air reaches the air sacs, oxygen passes through the air sac walls into the blood in the capillaries. At the same time, a waste product, called carbon dioxide (CO<sub>2</sub>) gas, moves from the capillaries into the air sacs. This process, called **gas exchange**, brings in oxygen for the body to use for vital functions and removes the CO<sub>2</sub>.

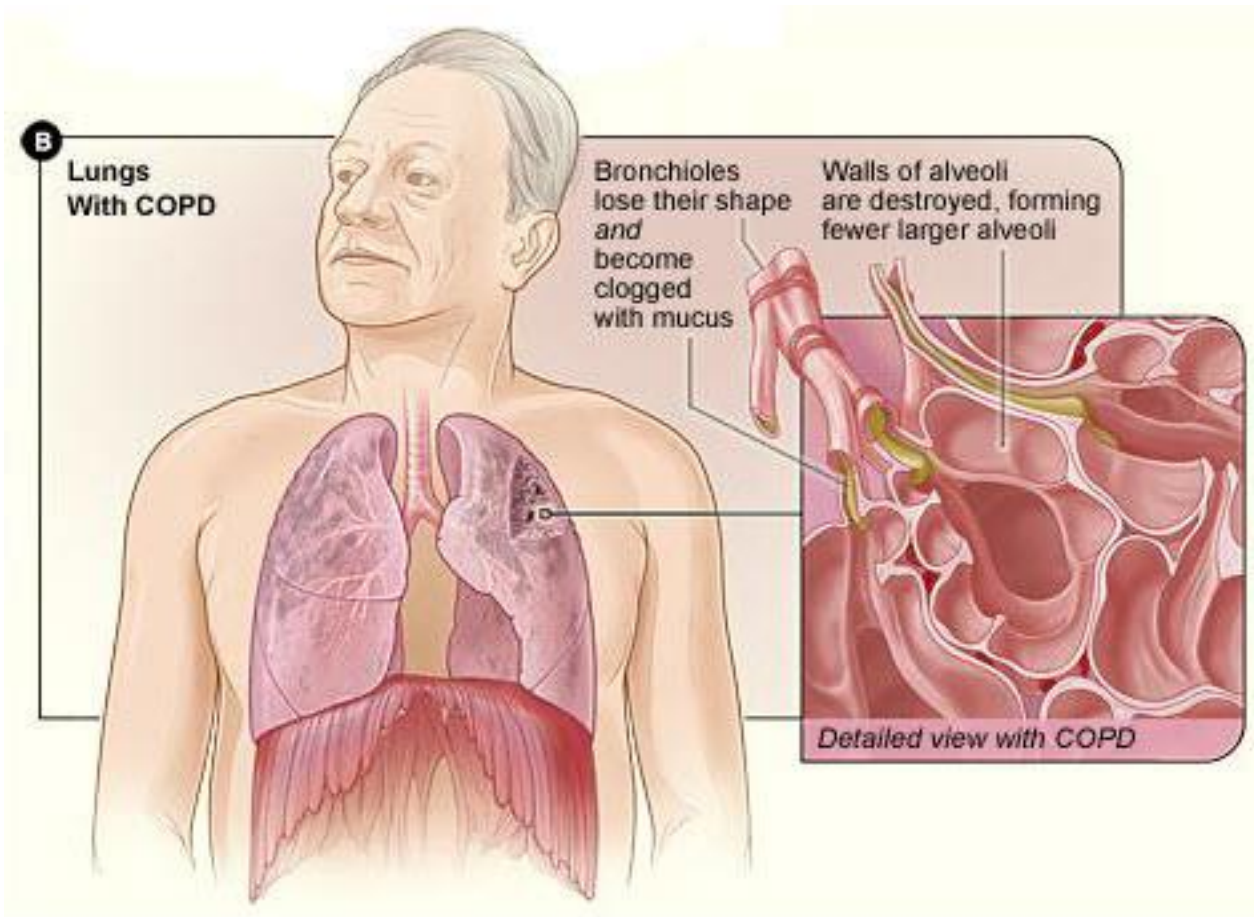
The airways and air sacs are elastic or stretchy. When you breathe in, each air sac fills up with air, like a small balloon. When you breathe out, the air sacs deflate and the air goes out.

In COPD, less air flows in and out of the airways because of one or more of the following:

- The airways and air sacs lose their elastic quality.
- The walls between many of the air sacs are destroyed.
- The walls of the airways become thick and inflamed.

What is COPD?

- The airways make more mucus than usual and can become clogged.



In the United States, the term COPD includes two main conditions: emphysema and chronic bronchitis.

- In **emphysema**, the walls between many of the air sacs are damaged. As a result, the air sacs lose their shape and become floppy. This damage also can destroy the walls of the air sacs, leading to fewer and larger air sacs instead of many tiny ones. If this happens, the amount of gas exchange in the lungs is reduced.
- In **chronic bronchitis**, the lining of the airways stays constantly irritated and inflamed, and this causes the lining to swell. Lots of thick mucus forms in the airways, making it hard to breathe.

What is COPD?

Most people who have COPD have both emphysema and chronic bronchitis, but the severity of each condition varies from person to person. This is why using the general term COPD is more accurate.

### **What is the outlook?**

COPD is a major cause of disability, and it is the third leading cause of death in the United States. Currently, 16 million people are diagnosed with COPD. Many more people may have the disease and not even know it.

COPD develops slowly. Symptoms often worsen over time and can limit your ability to do routine activities. Severe COPD may prevent you from doing even basic activities like walking, cooking, or taking care of yourself.

Most of the time, COPD is diagnosed in middle-aged or older adults. The disease is not contagious, meaning it cannot be passed from person to person.

COPD has no cure yet, and doctors do not know how to reverse the damage to the lungs. Treatments and lifestyle changes can help you feel better, stay more active and slow the progress of the disease. Following your doctor's advice and taking your medicines can greatly improve your condition and ability to participate in your favorite activities.

### **Where can I learn more?**

Visit: <http://careguides.med.umich.edu/COPD>

to access patient education materials your health care provider recommends.

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Patient education handout associated with Michigan Medicine Clinical Care Guidelines.  
Adapted from: NHLBI. COPD. <https://www.nhlbi.nih.gov/health-topics/copd>

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