

Chronic Obstructive Pulmonary Disease

Chronic obstructive pulmonary disease (COPD) is one of the most common lung diseases. It makes it difficult to breathe. There are two main forms of COPD:

- Chronic bronchitis, defined by a long-term cough with mucus
- Emphysema, defined by destruction of the lungs over time

Most people with COPD have a combination of both conditions.

Causes, incidence, and risk factors

Smoking is the leading cause of COPD. The more a person smokes, the more likely that person will develop COPD although some people smoke for years and never get COPD.

In rare cases, nonsmokers who lack a protein called alpha-1 antitrypsin can develop emphysema.

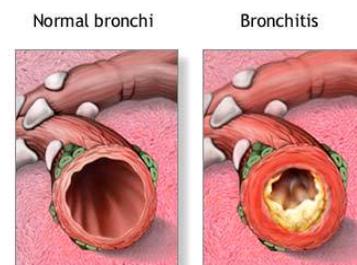
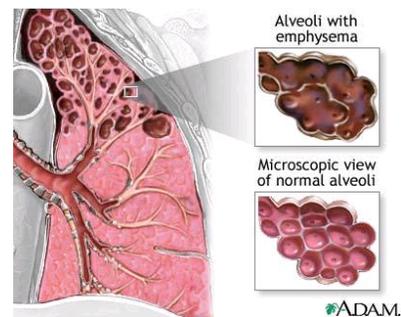
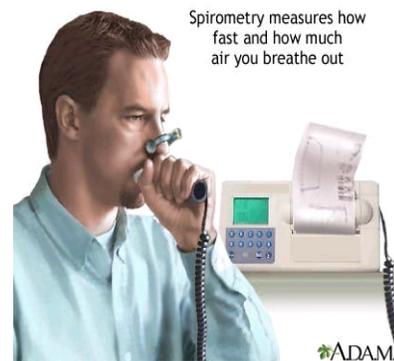
Other risk factors for COPD are:

- Exposure to certain gases or fumes in the workplace.
- Exposure to heavy amounts of secondhand smoke and pollution.
- Frequent use of cooking gas without proper ventilation.

Symptoms

- Cough with mucus
- Shortness of breath (dyspnea) that gets worse with mild activity
- Fatigue
- Frequent respiratory infections
- Wheezing

Since the symptoms of COPD develop slowly, some people may be unaware that they are sick.

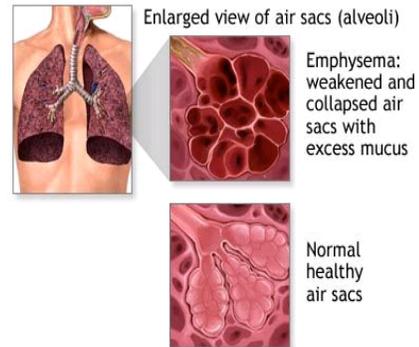


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Signs and tests

The best test for COPD is a simple lung function test called *spirometry*. This involves blowing out as hard as one can into a small machine that tests lung capacity. The test can be interpreted immediately and does not involve exercising, drawing blood, or exposure to radiation.

Using a stethoscope to listen to the lungs can also be helpful, although sometimes the lungs sound normal even when COPD is present.



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Pictures of the lungs (such as X-rays and CT scans) can be helpful but sometimes look normal even when a person has COPD.

Sometimes it is necessary to do a blood test (call a “blood gas”) to measure the amounts of oxygen and carbon dioxide in the blood.

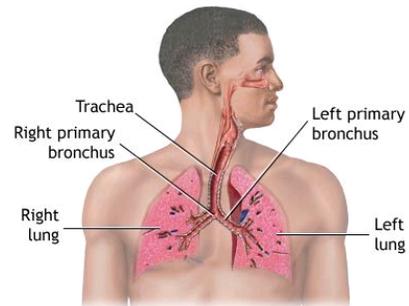
Treatment

There is no cure for COPD. However, there are many things you can do to relieve symptoms and keep the disease from getting worse.

Persons with COPD must stop smoking. This is the best way to slow down the lung damage.

Medications used to treat COPD include:

- Inhalers (bronchodilators) to open the airways, such as ipratropium (Atrovent), tiotropium (Spiriva), salmeterol (Serevent), or formoterol (Foradil)
- Inhaled steroids to reduce lung inflammation



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In severe cases or during flare-ups, you may need to receive steroids by mouth or through a vein (intravenously).

Antibiotics are prescribed during symptom flare-ups, because infections can make COPD worse.

Oxygen therapy at home may be needed if a person has a low level of oxygen in their blood. Pulmonary rehabilitation does not cure the lung disease, but it can teach you to breathe in a different way so you can stay active. Exercise programs such as pulmonary rehabilitation are also important to help maintain muscle strength in the legs so less demand is placed on the lungs when walking. These programs also teach people how to use their medicines most effectively.

Things you can do to make it easier for yourself around the home include:

- Avoiding very cold air
- Making sure no one smokes in your home
- Reducing air pollution by eliminating fireplace smoke and other irritants

Eat a healthy diet with fish, poultry, or lean meat, as well as fruits and vegetables. If it is hard to keep your weight up, talk to a doctor or dietitian about getting foods with more calories.

Surgical treatments may include:

- Surgery to remove parts of the diseased lung, for some patients with emphysema
- Lung transplant for severe cases

Expectations (prognosis)

This condition is a long-term (chronic) illness. The disease will get worse more quickly if one continues to smoke.

Patients with severe COPD will be short of breath with most activities and will be admitted to the hospital more often. These patients should talk with their doctor about the use of breathing machines and end-of-life care.

Complications

- Irregular heart beats (arrhythmias)
- Need for breathing machine and oxygen therapy
- Right-sided heart failure or cor pulmonale (heart swelling and heart failure due to chronic lung disease)
- Pneumonia
- Pneumothorax
- Severe weight loss and malnutrition