

# CHRONIC OBSTRUCTIVE PULMONARY DISORDER



## Definition

Chronic obstructive pulmonary disease (COPD) refers to a group of lung diseases that block airflow and make breathing difficult.

Emphysema and chronic bronchitis are the two most common conditions that make up COPD. Chronic bronchitis is an inflammation of the lining of your bronchial tubes, which carry air to and from your lungs. Emphysema occurs when the air sacs (alveoli) at the end of the smallest air passages (bronchioles) in the lungs are gradually destroyed.

Damage to your lungs from COPD can't be reversed, but treatment can help control symptoms and minimize further damage.

## Symptoms

Symptoms of COPD often don't appear until significant lung damage has occurred, and they usually worsen over time. For chronic bronchitis, the main symptom is a cough that you have at least three months a year for two consecutive years. Other signs and symptoms of COPD include:

- Shortness of breath, especially during physical activities
- Wheezing
- Chest tightness
- Having to clear your throat first things in the morning, due to excess mucus in your lungs
- A chronic cough that produces sputum that may be clear, white, yellow or greenish
- Blueness of the lips or fingernail beds (cyanosis)
- Frequent respiratory infections
- Lack of energy
- Unintended weight loss (in later stages)

People with COPD are also likely to experience episodes called exacerbations, during which their symptoms become worse and persist for days or longer.

## Causes

The main cause of COPD is tobacco smoking. However, in the developing world, COPD often occurs in women exposed to fumes from burning fuel for cooking and heating in poorly ventilated homes. Only about 20 percent of chronic smokers develop COPD. Some smokers develop less common lung

conditions. They may be misdiagnosed as having COPD until a more thorough evaluation is performed.

## How your lungs are affected

Air travels down your windpipe (trachea) and into your lungs through two large tubes (bronchi). Inside your lungs, these tubes divide many times — like the branches of a tree — into many smaller tubes (bronchioles) that end in clusters of tiny air sacs (alveoli). The air sacs have very thin walls full of tiny blood vessels (capillaries). The oxygen in the air you inhale passes into these blood vessels and enters your bloodstream. At the same time, carbon dioxide — a gas that is a waste product of metabolism — is exhaled.

Your lungs rely on the natural elasticity of the bronchial tubes and air sacs to force air out of your body. COPD causes them to lose their elasticity and partially collapse, which leaves some air trapped in your lungs when you exhale.

## Causes of airway obstruction

- Emphysema. This lung disease causes destruction of the fragile walls and elastic fibers of the alveoli. Small airways collapse when you exhale, impairing airflow out of your lungs.
- Chronic bronchitis. In this condition, your bronchial tubes become inflamed and narrowed and your lungs produce more mucus, which can further block the narrowed tubes. You develop a chronic cough trying to clear your airways.

## Cigarette smoke and other irritants

In the vast majority of cases, the lung damage that leads to COPD is caused by long-term cigarette smoking. But there are likely other factors at play in the development of COPD, such as a genetic susceptibility to the disease, because only about 20 percent of smokers develop COPD.

Other irritants can cause COPD, including cigar smoke, secondhand smoke, pipe smoke, air pollution and workplace exposure to dust, smoke or fumes.

## Alpha-1-antitrypsin deficiency

In about 1 percent of people with COPD, the disease results from a genetic disorder that causes low levels of a protein

called alpha-1-antitrypsin. Alpha-1-antitrypsin (AAt) is made in the liver and secreted into the bloodstream to help protect the lungs. Alpha-1-antitrypsin deficiency can affect the liver

as well as the lungs. Damage to the liver can occur in infants and children, not just adults with long smoking histories.

For adults with COPD related to AAt deficiency, treatment options are the same as those for people with more common types of COPD. Some people can be treated by replacing the missing AAt protein, which may prevent further damage to the lungs.

## Risk factors

Risk factors for COPD include:

- **Exposure to tobacco smoke:** The most significant risk factor for COPD is long-term cigarette smoking. The more years you smoke and the more packs you smoke, the greater your risk. Pipe smokers, cigar smokers, marijuana smokers and people exposed to large amounts of secondhand smoke also are at risk.
- **People with asthma who smoke:** The combination of asthma, a chronic airway disease, and smoking increases the risk of COPD even more.
- **Occupational exposure to dusts and chemicals:** Long-term exposure to chemical fumes, vapors and dusts in the workplace can irritate and inflame your lungs.
- **Age:** COPD develops slowly over years, so most people are at least 35 to 40 years old when symptoms begin.
- **Genetics:** An uncommon genetic disorder known as alpha-1-antitrypsin deficiency is the source of some cases of COPD. Other genetic factors likely make certain smokers more susceptible to the disease.

## Complications

Complications of COPD include:

- **Respiratory infections:** People with COPD are more susceptible to colds, the flu and pneumonia. Any respiratory infection can make it much more difficult to breathe and produce further damage to the lung tissue. An annual flu vaccination and regular vaccination against pneumococcal pneumonia help prevent some infections.
- **High blood pressure:** COPD may cause high blood pressure in the arteries that bring blood to your lungs (pulmonary hypertension).
- **Heart problems:** For reasons that aren't fully understood, COPD increases your risk of heart disease, including heart attack.

- **Lung cancer:** Smokers with chronic bronchitis have greater risk of developing lung cancer than do smokers who don't have chronic bronchitis.
- **Depression:** Difficulty breathing can keep you from doing activities that you enjoy. And dealing with serious illness can contribute to development of depression. Talk to your doctor if you feel sad or helpless or think that you may be experiencing depression.

## Lifestyle and home remedies

If you have COPD, you can take steps to feel better and slow the damage to your lungs:

- **Control your breathing:** Talk to your doctor or respiratory therapist about techniques for breathing more efficiently throughout the day. Also be sure to discuss breathing positions and relaxation techniques that you can use when you're short of breath.
- **Clear your airways:** With COPD, mucus tends to collect in your air passages and can be difficult to clear. Controlled coughing, drinking plenty of water and using a humidifier may help.
- **Exercise regularly:** It may seem difficult to exercise when you have trouble breathing, but regular exercise can improve your overall strength and endurance and strengthen your respiratory muscles.
- **Eat healthy foods:** A healthy diet can help you maintain your strength. If you're underweight, your doctor may recommend nutritional supplements. If you're overweight, losing weight can significantly help your breathing, especially during times of exertion.
- **Avoid smoke and air pollution:** In addition to quitting smoking, it's important to avoid places where others smoke. Secondhand smoke may contribute to further lung damage. Other types of air pollution also can irritate your lungs.
- **See your doctor regularly:** Stick to your appointment schedule, even if you're feeling fine. It's important to steadily monitor your lung function. And, be sure to get your annual flu vaccine in October or November to help prevent infections that can worsen your COPD. Ask your doctor when you need the pneumococcal vaccine.

## Coping and support

Living with COPD can be a challenge — especially as it becomes harder to catch your breath. You may have to give up some activities you previously enjoyed. Your family and friends may have difficulty adjusting to some of the changes.

It can help to share your fears and feelings with your family, friends and doctor. You may also want to consider joining a support group for people with COPD. And you may benefit from counseling or medication if you feel depressed or overwhelmed.

## Prevention

Unlike some diseases, COPD has a clear cause and a clear path of prevention. The vast majority of cases are directly related to cigarette smoking, and the best way to prevent COPD is to never smoke — or to stop smoking.

If you're a longtime smoker, these simple statements may not seem so simple, especially if you've tried quitting — once, twice or many times before. But, keep trying. It's critical to find a tobacco cessation program that can help you quit for good. It's your best chance for preventing damage to your lungs.

Occupational exposure to chemical fumes and dust is another risk factor for COPD. If you work with this type of lung irritant, talk to your supervisor about the best ways to protect yourself, such as using respiratory protective equipment.

*Source: The Mayo Clinic*

## Contact us

Please feel free to contact your Aon Healthcare Consultant if you have any concerns. You may also contact the **Aon Resolution Centre on 0860 835 272 or e-mail: [arc@aon.co.za](mailto:arc@aon.co.za)** for further information.

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