



Pulmonary, Critical Care
& Sleep Medicine

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

WHAT IS COPD?

Chronic Obstructive Pulmonary Disease, or COPD, refers to a group of diseases that cause airflow blockage and breathing-related problems. It includes emphysema, chronic bronchitis, and in some cases asthma. COPD can cause coughing that produces large amounts of mucus, wheezing, shortness of breath, chest tightness, and other symptoms.

WHAT CAUSES COPD?

In the United States, tobacco use is a key factor in the development and progression of COPD, but asthma, exposure to air pollutants in the home and workplace, genetic factors, and respiratory infections also play a role. In the developing world, indoor air quality is thought to play a larger role in the development and progression of COPD than it does in the United States.

OVERVIEW

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 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 through the walls of the air sacs. When air reaches the air sacs, the oxygen in the air passes through the air sac walls into the blood in the capillaries. At the same time, carbon dioxide moves from the capillaries into the air sacs. This process is called gas exchange.

The air ways and air sacs are elastic. 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.
- The airways make more mucus than usual, which tends to clog them.

HOW CAN COPD BE PREVENTED?

Early detection of COPD might change its course and progress. A simple test can be used to measure pulmonary function and detect COPD in current and former smokers aged 45 years and older and anyone with breathing problems. Avoid tobacco use or inhaling tobacco smoke, home and workplace air pollutants, and respiratory infections to prevent early development of COPD.

HOW IS COPD TREATED?

Treatment of COPD requires a careful and thorough evaluation by a physician. The most important aspect of treatment is avoiding tobacco smoke and removing other air pollutants from the patient's home or workplace. Symptoms such as coughing or wheezing can be treated with medication. Respiratory infections should be treated with antibiotics, if appropriate. Patients who have low blood oxygen levels in their blood are often given supplemental oxygen.