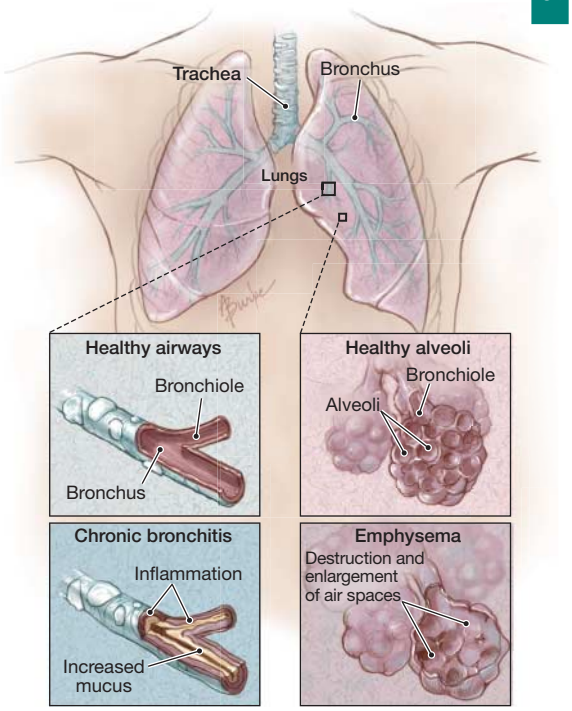
Chronic Obstructive Pulmonary Disease

Chronic obstructive pulmonary disease (COPD) is one of the most common lung disorders in adults and includes **chronic bronchitis** and **emphysema**. In COPD, the airway passages (known as **bronchi** and **bronchioles**) become obstructed because of inflammation and excess sputum (phlegm) production. With emphysema, the **alveoli** (tiny air sacs of the lung where oxygen is absorbed and carbon dioxide is released) are partially destroyed. These problems result in difficulty breathing and decreased amounts of oxygen delivered to the body's tissues. COPD affects between 12 million and 24 million persons and is a leading cause of death in the United States. COPD affects both men and women, and the most common cause is smoking (accounting for 80%-90% of cases). The September 26, 2012, issue of *JAMA* includes an article about COPD. This Patient Page is based on one previously published in the June 16, 2010, issue of *JAMA*.



SYMPTOMS

- Shortness of breath
- Cough
- Sputum (phlegm) production
- Wheezing
- Decreased blood oxygen levels and increased carbon dioxide levels
- Exercise intolerance

DIAGNOSIS AND TESTING

COPD may be mild and unrecognized for several years until symptoms worsen. Your doctor may measure breathing volumes, a test called **spirometry**. Sometimes a bronchodilator (inhaled medication to widen the airways) is given during this test. The oxygen level can be measured indirectly using **pulse oximetry**, which measures the oxygen saturation of hemoglobin through the surface of the skin or fingernail, or directly by a sample of blood from the artery. A chest x-ray can help determine the amount of lung damage and can also indicate pneumonia or other lung diseases.

TREATMENT

- Stop smoking! This is the most important step in treating any lung disease, including COPD.
- Medications may include bronchodilators (to widen the air passages), steroids (to reduce inflammation), and antibiotics (to treat infection if it is present). Often, many medications are used in combination.
- Some persons need oxygen at night, with activity, or all the time.
- Pulmonary rehabilitation, including exercise, may help improve **functional status** (the ability to do daily activities).
- Vaccines can help prevent or minimize other diseases, such as influenza or pneumococcal disease.
- Try to avoid pollution. You can find pollution forecasts from weather reports and at www.epa.gov/airnow.

Sources: American Lung Association; National Heart, Lung, and Blood Institute; American Thoracic Society

FOR MORE INFORMATION

- American Lung Association
  www.lung.org
- National Heart, Lung, and Blood Institute
  www.nhlbi.nih.gov,
  COPD.nhlbi.nih.gov
- American Thoracic Society
  www.thoracic.org

INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page link on *JAMA*'s website at www.jama.com. Many are available in English and Spanish. A Patient Page on evaluating lung function was published in the May 16, 2007, issue; one on adult asthma was published in the July 21, 2004, issue; and one on smoking cessation was published in the December 8, 2010, issue.

Janet M. Torpy, MD, Writer
Denise M. Goodman, MD, MS, Writer
Alison E. Burke, MA, Illustrator
Edward H. Livingston, MD, Editor

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