

Understanding Chronic Obstructive Lung Disease

Chronic obstructive pulmonary disease (COPD), also called chronic obstructive lung disease, describes two related respiratory conditions: chronic bronchitis and emphysema. Often, these diseases occur together. Both conditions slowly get worse over time and eventually stop your lungs from functioning. COPD is a complex lung disease that has several components: inflammation; tightening or constriction of the bronchial tubes - the structures that take air in and out of the lungs; and structural changes in the airways that restrict airflow.

COPD Basics

Every time you exhale, your lungs remove carbon dioxide waste from the bloodstream. When you inhale, they return a refreshed, oxygen-rich stream of blood to your heart. When your lungs are healthy, this process happens with ease. When COPD develops, breathing becomes an effort and eventually impossible.

Resources

American Lung Association
1-800-586-4872

<http://www.lungusa.org>

Offers resources on lung disease diagnosis, treatment and support, including information on how to quit smoking.

Freedom From Smoking® Online
<http://www.lungusa.org>

The American Lung Association's free online quit-smoking program provides support to stop smoking with an easy-to-use structured guide.

National Heart, Lung, and Blood Institute
Division of Lung Diseases
6701 Rockledge Drive, MSC 7952
Suite 10018

Bethesda, MD 20892-7952

<http://www.nhlbi.nih.gov>

Provides information and resources on lung, heart and vascular diseases.

Chronic bronchitis causes the bronchial tubes to become inflamed (swollen and irritated) and clogged with mucus, which narrows the airways and makes it more difficult to get air into and out the lungs. At the same time, muscles around the airways constrict (bronchoconstriction), which squeezes the airways and makes them even narrower. According to the American Lung Association, women have significantly higher rates of chronic bronchitis than men. Symptoms of chronic bronchitis include chronic cough, increased mucous, frequent clearing of the throat and shortness of breath.

Emphysema causes irreversible lung damage by weakening and destroying air sacs (alveoli) within the lungs. Deformed or destroyed alveoli interfere with the exchange of oxygen and carbon dioxide: oxygen in the blood decreases while carbon dioxide increases. Also, because damaged alveoli do not "anchor" the bronchial tubes as well as they do in healthy lungs, these airways tend to collapse, restricting airflow and making breathing difficult. Symptoms of emphysema include cough, shortness of breath and limited tolerance to exercise.

Though these conditions often occur together, a person with COPD may experience more symptoms of either bronchitis or emphysema.

What Causes COPD?

Long-term and heavy smoking is the most frequent cause of COPD, accounting for 80 to 90 percent of all cases. However, age, genetic, environmental and occupational factors, (exposure to secondhand smoke or air pollution, for example) and a history of childhood respiratory infections also contribute to the development of COPD.

Diagnosing COPD

There are no tests to predict who will develop COPD or to detect it in early stages before the lungs have been damaged. Several assessments are used to evaluate lung function. These include measurements of:

- lung volume
- the ability to move air in and out of the lung
- the rate at which oxygen and carbon dioxide diffuse between the lung and blood
- blood levels of oxygen and carbon dioxide.

To make the correct diagnosis, a health care professional usually will compare the results from several different tests and repeat specific tests to see if the conditions are improving or getting worse.

Treating COPD

COPD is usually preventable, but there is no cure for the condition if it develops. Both lifestyle changes and medical therapy can help people with COPD better manage their symptoms to lessen the impact these lung diseases can have on their lives. However, as the disease progresses, quality of life diminishes as breathing becomes more difficult.

Questions to Ask Your Health Care Professional

1. What tests will you use to diagnose my symptoms?
2. How long will it take to get the test results?
3. Will I need to see a specialist for any of these tests and, if so, what kind of medical specialist?
4. (If you smoke): Can you recommend a program or medical therapy to help me stop smoking?
5. Will I have to take medications to manage my symptoms and/or prevent them from getting worse?
6. How long will I need to take any medications you prescribe?
7. Please explain the benefits and potential side effects of the medications you're prescribing.
8. Can I exercise with COPD?
9. Which type of physical activity can I do? What activities should I avoid?
10. How often should my symptoms be evaluated and by whom?

Lifestyle Approaches

Quitting smoking is the only known approach to slow the rate of decline of lung function in COPD. However, many individuals with advanced disease will have persistent symptoms (such as productive, chronic cough, chest tightness and increased effort to breathe) despite smoking cessation and will require medical therapy.

Physical activity, avoiding cigarette smoke and other air pollution, and eating a balanced diet may help to minimize some chronic symptoms of bronchitis. Working closely with a health-

care team specializing in pulmonary (lung) rehabilitation may also help individuals with COPD cope with disabling symptoms.

Medical Approaches

Medications that open the bronchial tubes (known as bronchodilator medications) to make breathing easier are the primary treatment used for COPD. Other treatments include oxygen therapy and glucocorticosteroids. However, none of the existing medical treatments has been shown to alter the long-term effects of COPD-decline in lung function or to reverse damage to the lungs.

COPD Facts to Know

- More than 20 million Americans are estimated to have COPD and most of them also have chronic bronchitis.
- A cigarette smoker is 10 times more likely than a nonsmoker to die of COPD.
- COPD is currently the fourth leading cause of death in the U.S.-killing more than 119,000 Americans each year. It is projected to be the third leading cause by 2020.
- In 2001, for the first time, more women and particularly African-American women died from COPD than men. However, more men than women develop COPD. The overall death rate for COPD increased 67 percent between 1980 and 2000.
- COPD cost the U.S. economy more than \$32 billion in 2002 – \$18.0 billion in health care expenditures and indirect costs of \$14.1 billion.

References

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