



# COPD: Nutrition, Oxygen, and Exercise

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University of  
Pittsburgh  
Medical Center  
Information  
for Patients

*COPD is a condition that affects the lungs and airways. COPD stands for chronic (KRON-ick) obstructive (ob-STRUCK-tiv) pulmonary (PULL-muh-nair-ee) disease.*

***Chronic** means the condition is long term. You will have it the rest of your life. COPD usually gets worse over time, but you can learn how to manage it. **Pulmonary** refers to the lungs and airways. The condition is **obstructive** because it limits the flow of air into and out of your lungs.*

This patient education sheet tells you about aspects of your treatment in addition to your medicine. These aspects are good nutrition, oxygen therapy, and exercise and rehabilitation (REE-huh-bill-ih-TAY-shun). For other information about COPD, see the patient education sheet [COPD: Chronic Obstructive Pulmonary Disease](#).

## Good nutrition

Good nutrition means healthy eating. You need good nutrition to make your body stronger. You should eat a variety of foods every day. When you have COPD, preparing food and eating large meals may lead to shortness of breath. Here are some ways to help prevent shortness of breath.

### ***Eat 6 small meals each day, instead of 3 large meals.***

Chewing and digesting food uses up oxygen. When you eat a small meal, you use up less oxygen than when you eat a large meal. In addition, a large meal fills your stomach. A full stomach presses on your diaphragm (DIE-uh-gram). The diaphragm is the main muscle we use to breathe. When your stomach presses on your diaphragm, it is harder for you to breathe.

### ***Eat foods that need little preparation.***

Here are some of the foods that are both nutritious and easy to prepare:

- canned fruit and fruit juice
- fresh or dried fruit
- cereals, crackers
- cheese
- eggs
- liquid nutrition supplements (brand names include Boost, Ensure, Instant Breakfast)
- milk, yogurt, ice cream
- sandwiches
- tuna (salt-free)

If you are short of breath in the morning, plan a liquid breakfast.

***Eat slowly, and breathe evenly.***

Breathe evenly while you are chewing. Chew your foods well. If you feel the need, stop and relax. Take a few breaths. Then start again.

***Avoid gas-forming foods.***

Some foods form gas that can cause pressure against your diaphragm. Avoid these foods:

- all beans (except green beans)
- broccoli
- brussels sprouts
- cabbage
- cauliflower
- cucumbers
- melons
- onions
- raw apples
- turnips

***Ask your doctor for diet guidelines.***

Some people may need to lose weight because extra weight can increase shortness of breath. Other people may need to gain weight. Your doctor will tell you the type of diet that is best for you or will refer you to a nutritionist. Other conditions you may have, such as diabetes or heart disease, will affect your diet guidelines. If you feel the need for more help, you can ask your doctor to refer you to a nutritionist or dietitian. If you have a rapid gain or rapid loss in your weight, be sure to tell your doctor.

**Oxygen therapy**

If there is not enough oxygen in your blood, your doctor will order oxygen for you. When there is too little oxygen in the blood, the heart starts to beat faster and harder to get more oxygen to the body's tissues. When the heart beats faster and harder over time, it may become damaged. Oxygen prevents heart damage and allows you to be more active.

When you do not have enough oxygen in your blood, you may have one or more of the following symptoms:

- shortness of breath
- tiredness
- irritability
- confusion
- headache

You may need oxygen but not have any symptoms.

***Testing***

To decide if you need oxygen, the doctor will measure the amount of oxygen in your blood. A pulse oximeter (ox-IM-ih-ter) measures oxygen through a clip on your finger or a sensor placed on your forehead. Another test, called a blood gas, uses a sample of your blood. Your doctor may also do further testing to learn what amounts of oxygen you need when resting, when active, and when asleep. Most health insurance plans require that you have these tests before they cover the cost of oxygen. Some insurance plans require a co-payment.

### *Oxygen Devices*

Your doctor will prescribe the type of oxygen device, the flow rate, and how and when to use it. You should think of oxygen as a medicine. Use it as your doctor prescribes. You need to wear the oxygen as prescribed even when you feel fine. Talk to your doctor about changes in your oxygen prescription.

With any oxygen device, you can use 50 feet of tubing to move easily around your home. The following describes 3 types of oxygen devices.

**Liquid.** Liquid oxygen is the most portable type. This system is the easiest method for people with an active lifestyle. The device you carry weighs only about 7 pounds and allows you to move easily. You keep a base tank at home that must be refilled every 7 to 10 days. You fill the portable tank from the base tank as needed. How long the portable tank lasts depends on its size and the amount of oxygen you use. (The oxygen used is measured in liters per minute.) You must learn to plan ahead. You cannot let your portable tank become empty when you are away from the base tank.

**Compressed gas.** This type of oxygen is compressed into a cylinder and stored as a gas. The cylinders come in different sizes and must be replaced when almost empty. When you leave the house, there are smaller, portable cylinders of oxygen (“take-out” gas) to carry with you. You must plan ahead for how long the oxygen in your portable cylinder will last. Your home oxygen company will help you to calculate how much you need. In most cases, these cylinders cannot be refilled at home. They must be replaced. Be sure to store and safely secure all compressed oxygen cylinders.

**Concentrator.** This device stays in your

home. It pulls oxygen from the air, concentrates it, and stores it. There is no need to have tanks refilled. Concentrators run on electricity and may increase your electric bill. Keep a compressed oxygen cylinder at home as a back-up in case of a power outage.

### *Traveling*

Don't let your need for oxygen stop you from traveling. You can travel by air, car, bus, train, or boat **when you plan ahead**. Your doctor and home oxygen company can help you to arrange for travel. Before taking a plane trip, it's very important to talk to your doctor about extra oxygen for your flight. Special arrangements with the airline will be necessary. You also need to give advance notice for travel by bus, train, or cruise ship to arrange for oxygen with the carrier. You may need to get a prescription from your doctor. Request seating in a no-smoking area. For travel by car, **do not** allow smoking in the car.

### *Oxygen Safety Rules*

Oxygen itself does not catch fire, but it **supports** fire. If anything near the oxygen source ignites, it will flame very quickly.

- **Never** smoke while you wear oxygen.
- **Do not** use oxygen while cooking with an open flame. Appliances such as gas stoves, gas grills, and charcoal grills have an open flame. You can be severely burned by an open flame that flares near oxygen. Talk to your doctor if you have an appliance with an open flame.
- Keep oxygen equipment 10 feet away from any source of ignition, such as hot pipes, candles, fireplaces, matches, stoves, and space heaters, even when not in use.
- **Do not** use any oil-based creams or lotions, vapor rub, petroleum jelly, or hair

dressings such as hair spray or gel when you are using oxygen.

- Store oxygen containers upright in an open, well-ventilated area. In a car, secure the container in an upright position. Keep the windows cracked. Never store oxygen in the trunk or leave it unattended in the car — wear your oxygen.
- **Do not** allow the oxygen tubing to kink.
- Avoid touching pipes and other metal parts on a liquid oxygen system — the frost may injure your skin.

### **Exercise and rehab**

You can benefit from exercise training at all stages of COPD. Exercise is **important**. It builds your endurance, strength, and flexibility. Some people try exercise and become short of breath, so they stop. They may think shortness of breath, fatigue, or muscle weakness makes exercise impossible. The truth is the less active you are, the weaker your muscles become. Your muscles then need more oxygen, and you become more short of breath. But you can work to get your body into better shape. Regular exercise can condition your muscles and make them more efficient. You then may feel less short of breath when you perform activities of daily living.

No matter how active or inactive a person is, exercise is important. Ways for you to get exercise include activities such as walking, dancing, and stationary biking. You need to find an activity that is right for you. Pick an activity you enjoy, then talk with your doctor about an exercise plan that may work for you. Ask how you should use your inhalers with exercise. **Be**

### **sure to talk to your doctor before starting an exercise program.**

Several UPMC facilities offer formal exercise programs for people who have lung problems. These programs are called “pulmonary rehabilitation.” Rehab programs include exercise training, nutrition counseling, and education. To learn about rehab programs, if you need help starting to exercise, or if your doctor wants you to be monitored during exercise, call 800-533-UPMC (8762) for information.

### ***Guidelines for Exercise***

When you exercise, you need to consider these important guidelines:

- Set up a regular program of exercise, and stay with it.
- Set goals that are realistic for you. This partly depends on how severe your COPD is. Start slowly. Some people may start only with 10 minutes of exercise once a day. Others may start with only 2 minutes a few times a day. Do what is right for you.
- Build up gradually. You can slowly increase your exercise time. Then you can slowly increase the intensity.
- Clear your lungs of mucus before each exercise period.
- Practice relaxation and deep breathing.
- Learn how you should use your inhalers before and during exercise.
- If you are prescribed oxygen with exercise, be sure to use it.
- Start your exercise period with a warm-up. Stretching and reaching are good ways

to warm up. End the exercise period with cool-down activity. This means activity that is less intense or easier.

- Pay attention to what your body tells you. If you become very short of breath at any time, stop and relax. After a few minutes, resume your exercise.
- If your COPD flares up or worsens (exacerbates), your overall condition may decline. You may be unable to exercise at the same level. You will need to slowly work back to your prior condition and level of exercise. Follow your doctor's advice.
- If you become ill, reduce or stop exercise until your doctor says you may resume.

Many people start with a walking plan. To begin, you can start with a short walk each day. Go only as far as you can without shortness of breath. Keep your arms hanging loose and your shoulders relaxed. A walker is helpful for some people. A walker can support your arms or carry an oxygen device.

When you walk, breathe slowly. Breathe with your diaphragm. Use pursed-lip breathing: Inhale 1-2, and then exhale 1-2-3-4. Keep the pace easy and even. Try to walk a little farther each day. **Do not** push too hard. When you become short of breath, always stop and rest. Refer to the patient education sheet [COPD: Ways to Breathe Better and Save Energy](#).

## **When should you seek help?**

If any of the following happen to you, get medical care:

- Your mucus changes in color, consistency, or amount.
- Your wheeze, cough, or shortness of breath gets worse, even after you take your medicine and it has time to work.
- Your breathing gets difficult.
- You have trouble walking or talking.

**Call 911 right away** if any of the following occur:

- You get confused.
- You have trouble staying awake.
- Your lips or fingernails are blue or gray.

## **If you have questions**

If you have any questions, call your doctor or nurse at \_\_\_\_\_.



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For help in finding a doctor or health service that suits your needs, call the UPMC Referral Service at 412-647-UPMC (8762) or 800-533-UPMC (8762).

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