

Managing Your COPD:

Chronic Obstructive Pulmonary Disease



UPMC | University of Pittsburgh
Medical Center



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COPD: Overview

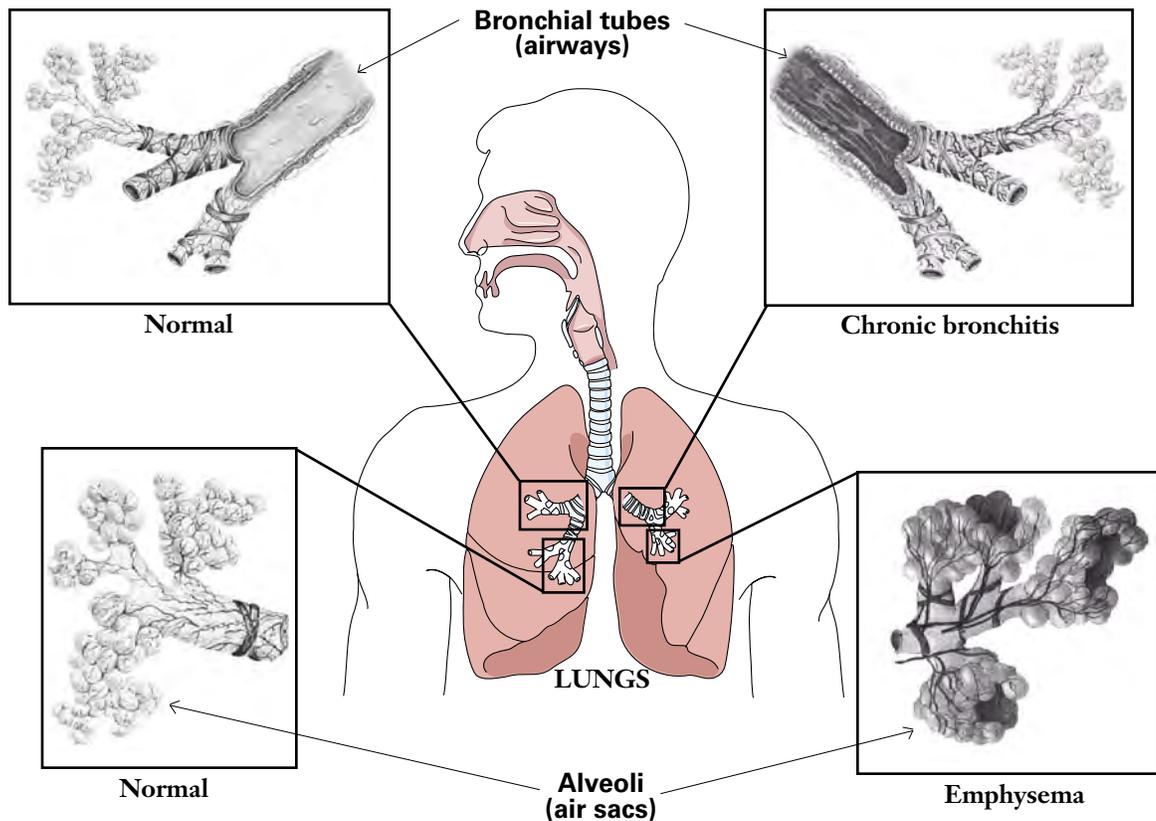
Information for Patients

What is COPD?

COPD is a condition that affects the lungs and airways. Another name for the airways is the bronchial (BRONK-ee-ol) tubes. 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, but you can learn to manage it. **Pulmonary** refers to your lungs and airways. The condition is **obstructive** because it limits the flow of air into and out of your lungs. COPD cannot be fully reversed. There are 2 main diseases that cause this obstruction. Most patients have both.

Chronic bronchitis (brank-EYE-tis) produces excess mucus that blocks your bronchial tubes (airways). The lining of the airways may become irritated or inflamed, and the airway muscles may spasm. A cough with mucus that lasts 3 months for 2 years in a row may be chronic bronchitis.

Emphysema (em-fuh-ZEE-muh) affects the air sacs in your lungs. The air sacs, called alveoli (AL-vee-OL-eye), become enlarged. As air sacs get bigger, the walls between the sacs are stretched thin and cannot spring back to their normal size. Many air sac walls are destroyed. The larger air sacs do not work



well and trap stale air inside. It then becomes difficult for fresh air with oxygen to enter the sacs and blood stream.

The smallest airways, which are called the bronchioles (BRONK-ee-ols), also weaken. They become less able to stretch. When you breathe out (exhale), these very small airways may collapse before they empty out. Then even more air is trapped in the air sacs.

Causes of COPD

Cigarette smoking is the most common risk factor for COPD. Smoking causes 80 to 90 percent of all COPD. The earlier in life you start smoking and the more cigarettes you smoke each day, the more likely you are to develop COPD. The number one way to slow down COPD is to **STOP SMOKING**.

In a small number of people, a rare genetic risk factor causes emphysema. These people lack alpha-1 antitrypsin. Their lungs are less able to protect against damage to the air sacs. COPD can run in families.

Other factors can put you at risk for COPD. They include second-hand smoke, air pollution, and being exposed at work to hazardous substances in the air, like dust and chemicals. Severe chest illnesses when you were a child and over-sensitive airways, or asthma (AZ-muh), also are risk factors. According to the American Thoracic Society, about 14 million people in the United States have COPD. It is the world's fourth leading cause of death.

Symptoms of COPD

Shortness of breath, coughing, producing sputum (mucus), and wheezing are symptoms of COPD. Shortness of breath usually gets worse during exercise, for example, when you walk up steps. However, other diseases can cause the same symptoms. The disease most often confused with COPD is asthma. There is some overlap of asthma with COPD, but asthma also differs from COPD. Between attacks of asthma, the lungs may work normally, and the person may be free of symptoms. Medical tests will help to detect if your condition is COPD.

How is COPD diagnosed?

To learn if you have COPD, the doctor will ask you about health problems. Coughing, wheezing, amount of sputum (mucus), chest discomfort, severe chest illnesses, and shortness of breath are some of the problems the doctor will ask about. He or she will also ask about smoking and exposure to hazards in the environment. Your doctor will give you a physical exam.

If your doctor suspects COPD, he or she may order lab tests and a chest x-ray. The doctor may also order breathing tests. These tests may be called PFTs (pulmonary function tests) or spirometry (spy-RAW-muh-tree). PFTs are a series of short tests that measure the amount of air coming in and out of your airways and lungs. These measurements help to identify whether COPD or another lung disease is causing your symptoms.

In the early stages of COPD (mild COPD), you may not be aware that your lung function is abnormal. When you **STOP SMOKING**, it can greatly slow down COPD.

Ways to control breathing

When you become short of breath, there are several methods you can use to help control your breathing. When you learn to control your breathing, you can get more air in and out of your lungs. The methods are briefly described in this section. To learn how to use these breathing methods, see [COPD: How to Breathe Better and Save Energy](#) on Pages 7-12 in this booklet.

Pursed-lip breathing. This method helps keep your air sacs and smallest airways open longer so that air is not trapped in your lungs. This helps stale air to get out of your lungs so more fresh air with oxygen can get in.

Diaphragmatic (belly) breathing. The main muscle that we use to breathe is called the diaphragm (DIE-uh-fram). Diaphragmatic (DIE-uh-fruh-MAT-ik) breathing helps make this muscle stronger. Then more fresh air can get in and stale air can get out of your lungs. This method is also called belly breathing.

Relaxation. When you become short of breath, it's very easy to panic. Shortness of breath causes fear and anxiety. Eventually, panic can result. To help prevent this cycle, you can learn specific ways to relax. To help yourself relax, try yoga, positive imagery (for example, picturing yourself in a pleasant place), and alternate tensing and relaxing of muscles. Diaphragmatic and pursed-lip breathing (see above) will also help you relax.

Saving energy. You can learn ways to use less energy as you go about daily life. When you manage your energy better, it's easier to stay active.

Clearing mucus. Clearing mucus from your lungs will help keep the airways open and make it easier to breathe. This will help to prevent infections. There are a variety of methods and devices designed to help clear mucus. One method uses a special way to cough and is called controlled coughing.

Avoiding COPD triggers

Some activities and substances can trigger flare-ups of COPD. It is important to take active steps to avoid triggers. The most common triggers are listed below. For more information, see [COPD: Avoiding Triggers](#) on Pages 13-16 in this booklet.

Cigarette smoking. One of the most important steps you can take to control your disease is to **STOP SMOKING**. When you smoke, you breathe in poisonous substances that stay in your lungs and airways. One of these poisons is carbon monoxide. Carbon monoxide makes your blood less able to carry oxygen. Smoke irritates your airways, which then may become inflamed and produce more mucus. Smoke also damages the cilia (SILL-ee-uh), tiny hairs that sweep the airways clear. When the cilia do not work, the airways become clogged with mucus and other matter. Clogged airways provide excellent conditions for infection to develop. Cigarette smoke also damages the air sacs in your lungs.

Why quit now? When you quit smoking — even though destroyed air sacs do not repair — your body starts to repair in other ways. When you quit, COPD does not progress as quickly. You'll be better able to remove mucus from your airways. You'll have fewer infections and fewer periods when symptoms worsen. For more information, see the UPMC patient education sheet [Smoking and Your Lungs](#).

To quit, learn what options are available to you. UPMC offers quit-smoking classes — also called smoking cessation (sess-AY-shun) classes. For information, call 1-800-533-UPMC (8762). For a complete quit-smoking guide, see the UPMC patient education booklet [Journey to a Smoke-Free Life](#).

Infections. Avoid people who have a cold, a sore throat, the flu, or pneumonia. Get a flu shot every year. Get the pneumonia shot, too, as your doctor recommends. Get lots of exercise, fluids, healthy food, and rest. Talk to your doctor about exercise.

Air pollution. Outdoor and indoor air pollution in your lungs can trigger shortness of breath or lead to an infection. Avoid traffic jams, smoke, strong chemicals, aerosol sprays, and the outdoors during air pollution alerts.

Weather. Cold air puts a strain on your lungs. When you are outside in cold weather, breathe through a scarf that covers your nose and mouth.

Second-hand smoke. Breathing second-hand smoke can change how your lungs and airways perform. Airways may become more sensitive to irritants. Your lungs may not work as well.

Nutrition, oxygen, and exercise

Nutrition, oxygen therapy, and exercise can give added support to your treatment. For detailed information, see [COPD: Nutrition, Oxygen, and Exercise](#) on Pages 17-21 in this booklet.

Nutrition. Good nutrition is important to make your body stronger. You need to eat a variety of foods every day. To prevent shortness of breath:

- Eat 6 small meals instead of 3 large meals.
- Select foods that need little preparation.
- Eat slowly.
- Avoid gas-forming foods.
- Ask your doctor for dietary guidelines.

Oxygen. Your doctor may order extra oxygen for you if there's not enough oxygen in your blood. When the blood has too little oxygen, the heart starts to beat faster and harder to get more oxygen to the body's tissues. Oxygen may prevent heart damage and allows you to stay more active.

To decide what you need, the doctor will measure the amount of oxygen in your blood. Your doctor may ask you to have tests that will show how much oxygen you need when at rest, when active, and when asleep. Most insurance companies require these tests before they will cover the cost of providing oxygen. Oxygen cannot help all shortness of breath. Only your doctor can determine if oxygen can help you.

Exercise. You can build up your body and get into better shape with exercise. Exercise conditions your muscles and makes them more efficient. You may then feel less short of breath when you perform activities of

daily living. By exercising, you can gain strength, flexibility, and endurance.

Ways for you to get exercise include activities such as walking, dancing, and stationary biking. But before starting an exercise program, *it's important to talk with your doctor.*

You must proceed *slowly and safely* with an exercise program.

UPMC offers pulmonary rehabilitation (ree-huh-BILL-ih-TAY- shun) programs. If you need help starting to exercise, or if your doctor says your condition should be monitored during exercise, call 1-800-533-UPMC (8762) for information.

Medicines for COPD

Medicines to treat COPD fall into several main groups. They are listed below. For more information about these medicines, see [COPD: Medicines](#) on Pages 23-29 and [COPD: How to Use Inhalers](#) on Pages 31-37 in this booklet.

Bronchodilators (brank-oh-DIE-lay-ters) open airways to increase the flow of air. These medicines come as inhalers, nebulized (NEB-you-lized) liquids, and pills. Some inhaled bronchodilators are “fast-acting,” which means they provide quick relief and last up to 4 to 6 hours. Sometimes they're called rescue inhalers. Other bronchodilators are “long-acting” and last up to 12 hours, but do not provide quick relief during an attack. They are sometimes called maintenance medicines.

Steroids (STEER-oyds) may reduce swelling and inflammation. Steroids come in different forms, such as inhalers (both metered-dose inhalers and dry-powder inhalers), pills, and injections (shots). Steroids are another type of maintenance medicine.

Expectorants (ex-PECK-ter-ents) and **mucoytics** (myu-ko-LIT-iks) may be prescribed to help promote the removal of mucus produced in the lungs and airways. These medicines may help thick, sticky mucus become thin and more liquid, so that it's easier to clear from the lungs and airways.

Antibiotics (an-tee-bye-AH-tiks) are used to treat infections caused by bacteria. They sometimes help when your COPD is worse. Your doctor will choose the medicine that is best to attack the kind of infection you have. Always take antibiotics exactly as prescribed to be sure bacteria are destroyed.

Oxygen therapy may be prescribed if the oxygen levels in the blood are too low. Think of oxygen as a medicine. If your doctor prescribes oxygen for you, be sure to take it as prescribed. For more information about oxygen therapy, see COPD: Nutrition, Oxygen, and Exercise on Pages 17-21 in this booklet.

Follow-up visits

You will have regular doctor visits to see if your treatment plan is helping you. The doctor will make sure you're doing all you can to prevent problems. This includes getting a yearly flu shot and the pneumonia shot. How often you must go to your doctor for follow-up visits depends on your needs. Write down the treatment plan your doctor tells you to follow. It's very important to follow your treatment plan at all times, even when you feel well.

If you have questions

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

When should you seek help?

If any of the following occur, 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.

Other resources

American Lung Association
61 Broadway, 6th floor, NY, NY 10006
Phone: 1-800-548-8252
Web: www.lungusa.org

National Heart, Lung, and Blood Institute
NHLBI Health Information Center
P.O. Box 30105, Bethesda, MD 20824-0105
Phone: 301-592-8573
Web: www.nhlbi.nih.gov

National Library of Medicine
8600 Rockville Pike, Bethesda, MD 20894
Medline Plus: COPD
Phone: 1-888-FIND-NLM
Web: www.nlm.nih.gov/medlineplus/copdchronicobstructivepulmonarydisease.html



COPD: How to Breathe Better and Save Energy

Information for Patients

How COPD affects breathing

When your lungs are healthy and work properly, the air you breathe moves freely in and out. Inside your lungs are airways, which are called bronchial (BRONK-ee-ol) tubes. The airways branch into clusters of air sacs called alveoli (AL-vee-OL-ee). When you breathe in fresh air, it moves into the air sacs, where oxygen is absorbed into the blood stream and carried to all parts of your body. The air sacs also remove carbon dioxide from the blood. When you breathe out, stale air with carbon dioxide passes out of your airways and lungs.

COPD blocks the lungs and airways. When you breathe, air cannot move freely in and out. In chronic bronchitis, the airways are inflamed and produce too much mucus, so they become narrow. The airway muscles also may spasm. In emphysema, the air sacs and airways become less stretchable. The air sacs are slowly damaged. They become less and less able to absorb oxygen and remove carbon dioxide. The airways narrow and may collapse, preventing stale air from moving out of the lungs.

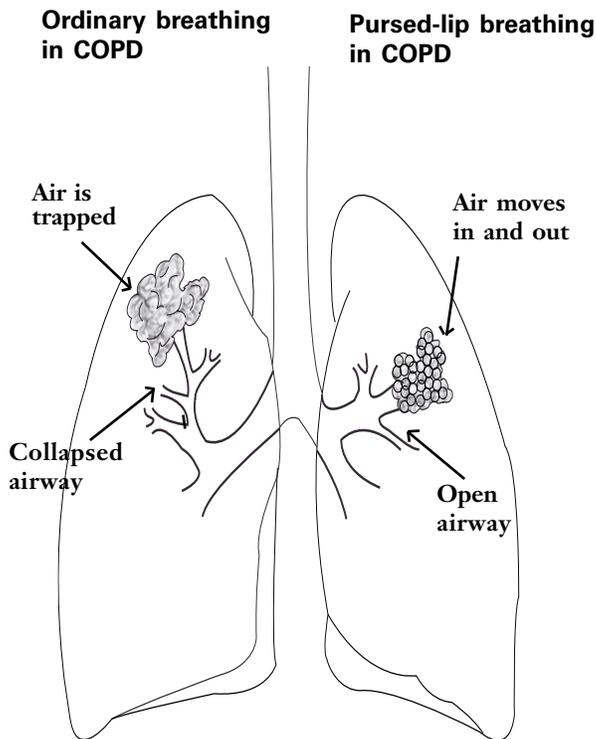
Breathing methods

You can learn several different methods to get more air into your lungs when you breathe.

Pursed-Lip Breathing

This method of breathing helps to keep your air sacs open longer so that air is not trapped in your lungs. It prevents the very small airways from collapsing when you breathe out. Pursed-lip breathing helps more stale air to get out of your lungs so that more fresh air with oxygen can get in. (See figure below.)

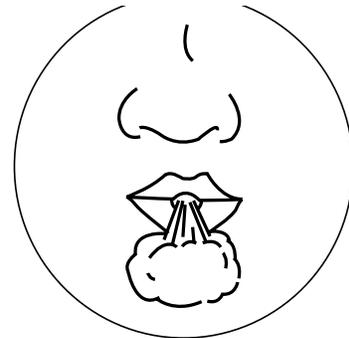
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Pursed-lip breathing may help to control shortness of breath. With this method, you breathe out through pursed lips for twice as long as you breathe in.

Follow these steps:

1. Breathe in (inhale) slowly. This should be a normal breath (not a deep one). It is best to inhale through your nose, with your mouth closed. As you inhale, count “1, 2.”
2. Pucker your lips in a whistling position. Now you have pursed lips.
3. Breathe out (exhale) slowly. Try to exhale twice as long as you inhaled. As you exhale, count “1, 2, 3, 4.” (See figure below.)



4. Relax.
5. Repeat these steps until you no longer feel short of breath. If you get dizzy, rest for a few breaths. Then begin again with Step 1.

Practice this breathing method several times each day so it becomes natural to you. Use pursed-lip breathing when you do things that make you short of breath — like climbing stairs, taking a bath, or doing housework. You also should use pursed-lip breathing for breathless spells.

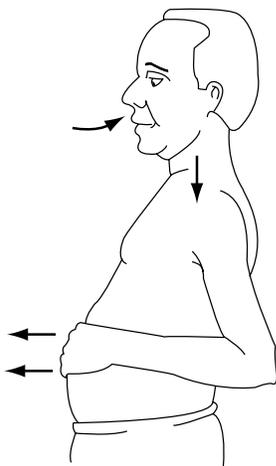
Diaphragmatic (Belly) Breathing

The diaphragm (DIE-uh-fram) is the main muscle we use to breathe. This muscle sits below the lungs and above the stomach. When you have COPD, air gets trapped in the air sacs in your lungs. The extra air makes your lungs push against your diaphragm. Doing diaphragmatic (die-uh-fruh-MAT-ik) breathing may help make your diaphragm stronger.

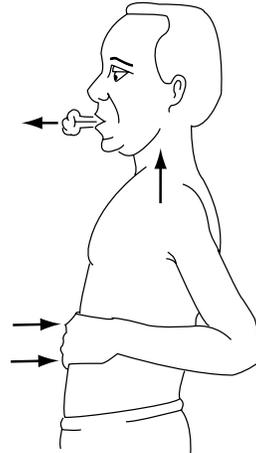
A stronger diaphragm helps you to get more fresh air into your lungs and more stale air out of your lungs. This method is also called belly breathing.

Follow these steps:

1. Place one hand on your belly, just below the ribs. Place the other hand on your chest.
2. Breathe in (inhale) through your nose. As you inhale, let your belly and hand move out. Keep your upper chest relaxed. The hand on your chest should not move or move very little.



3. Purse your lips in a whistling position. Then breathe out (exhale) slowly. Your hand and belly should move inward. Try to exhale twice as long as you inhaled.



4. Relax.

This method of breathing is harder to master than pursed-lip breathing. Practice each day as often as you think of it. At first, practice while you are lying down or sitting. Then begin to practice while you are walking. The more you do it, the easier it becomes. Use diaphragmatic breathing daily while you talk, eat, bathe, and dress. Your diaphragm will become stronger. A stronger diaphragm helps decrease your shortness of breath, strengthen your cough, and remove mucus.

Clearing mucus

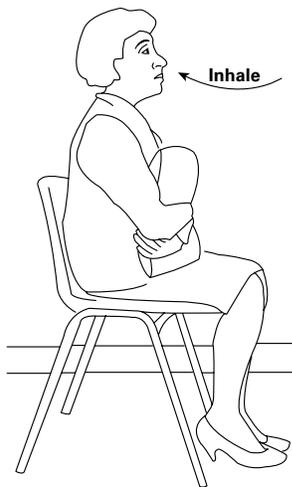
Clearing mucus from your lungs helps keep your airways open. This makes it easier to breathe and helps prevent infections. There are a variety of methods and devices designed to help clear mucus.

Controlled Coughing

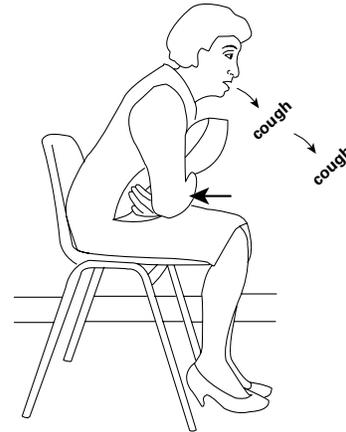
When you learn to control your cough, you can clear mucus more easily.

Follow these steps:

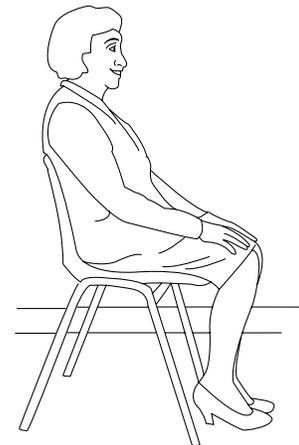
1. Sit in a chair with your feet flat on the floor. Hold a pillow against your diaphragm (upper belly).
2. Breathe in (inhale) and breathe out (exhale) through your nose slowly and deeply.
3. Repeat the above step 3 to 4 times.



4. Inhale again, bend forward, and push the pillow against your belly. Cough 2 or 3 times while pushing against your belly.



5. Relax.



6. Repeat as needed to clear your mucus.

Other Methods and Devices

Some people have very large amounts of mucus and cannot clear their lungs just by coughing. In this case, a method called postural drainage may help. Postural drainage uses gravity to help move the mucus. Your doctor also may tell you to use other methods, such as chest PT, which is short for chest physiotherapy (fiz-ee-oh-THAIR-uh-pee). Devices that are available to help remove mucus include the Flutter device and the Acapella device.

Relaxation

When you become short of breath, it's very easy to panic. Shortness of breath causes fear and anxiety. These feelings are natural, but you can make your shortness of breath worse. When you become anxious, you begin to take small, fast breaths. The breathing muscles tire faster, and fresh air cannot get deep into your lungs.

To help prevent this cycle, you can use methods of relaxation. Positive imagery is one of these methods. Mentally picturing yourself in a situation you enjoy can help relax you physically. For example, if you love the beach, you could close your eyes and picture a sandy beach, the warm sunshine, the ocean waves, and the cries of seagulls.

You could also learn yoga. Remember to practice pursed-lip breathing, which also helps you physically relax.

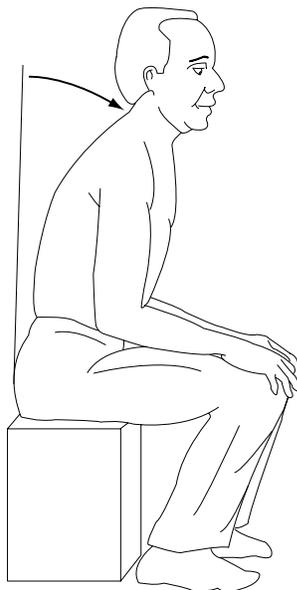
Tensing and Relaxing of Muscles

Follow these steps:

1. Sit upright in a chair, with your arms hanging loosely at your sides. Breathe deeply, slowly, and evenly.
2. Clench your fists while you continue to breathe.
3. Shrug your shoulders, and tighten your fists. Count "1, 2."
4. Let your shoulders fall down. Open your hands, and let your arms hang loosely. Count to 4.
5. Tighten your legs and feet. Count to 2.
6. Completely relax. Let all your muscles go loose. Count to 4.
7. Repeat as needed.

Body Positioning

The way you sit or stand can sometimes make it easier to breathe. When you sit, lean slightly forward. Rest your hands or forearms on your knees or over a table to support your upper body. When you stand, rest against a wall, leaning forward slightly. These positions help you avoid fatigue and shortness of breath.



Saving energy

You can learn to use less energy as you go about daily life. It's important to stay active but also to pace yourself. Adopting a slower, easier pace helps save your energy. The 2 main ways to conserve energy are control of your breathing and planning your daily activities.

Breathing Control

As you learn to control your breathing, you'll be able to do more. You will feel more comfortable. Remember to use pursed-lip breathing and diaphragmatic breathing. When you do a physical task, do the hardest part of the work while you are breathing out.

Lifting. First, breathe in slowly. Then lift and place objects as you breathe out.

Pushing or pulling. First, breathe in slowly. Then push or pull objects as you breathe out. Repeat as needed.

Walking uphill or upstairs. Stop and breathe in slowly. Walk a few steps as you breathe out slowly. Keep your breathing even. Take the same number of steps each time you breathe out.

Daily Planning

You should wait about an hour after you eat before doing any physical activity. While your body uses oxygen and energy to digest food, you have less energy for physical activity.

Never plan a heavy day. Spread your chores over the week. Stop and rest often. Put a restful activity between activities that use a lot of energy. For example, you may get short of breath when you bathe and then dress right away. If so, bathe before breakfast, and dress after breakfast. If you live in a two-story home, plan ahead. Do what you need to do upstairs before you come downstairs.

Move everyday items close to the places where you use them. Gather items needed for a specific task to the same place. This way, you do not need to walk back and forth while doing the task. A small utility cart (with 3 shelves) can help you move things around as you do your tasks. A pair of tongs with long handles can help you reach for things. Remember to stop and rest often. Think about using services in your community for help with meals, housework, and transportation.

Make each of the tasks you must perform easier. Don't stand when you can sit. Don't hold your arms up when you can rest your arms. Here are some examples:

Cooking or ironing. Sit on a high stool, rather than standing.

Shaving or putting on makeup. Put a mirror on a table. Sit and rest your elbows.

Bathing. Use a bath seat. Wash your hair in the shower. A hand sprayer attached to your faucet or shower is helpful. Instead of towel drying, slip on a terry robe after bathing. Heat and humidity can also be a problem while bathing. Use your bathroom exhaust fan or leave the door open when you shower. Use a clear shower curtain if you feel closed in while showering.

Dressing. Wear loose-fitting clothes that do not restrict the movements of your chest or belly. Avoid socks or stockings with tight elastic bands that could restrict your blood flow. It's easier to put on shoes when you have slip-on shoes and a long shoehorn. Wear shoes with non-slip soles to avoid falls.

If you have questions

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



COPD: Avoiding Triggers

Information for Patients

What is a trigger?

A trigger is any activity or substance that can cause your COPD to flare up. It's important to take active steps to avoid triggers. The following sections tell you about the most common triggers.

Infections

The flu and pneumonia are lung diseases that can be dangerous to you. You should get a flu shot every year in the autumn. The flu vaccine can prevent serious illness and death. Get the pneumonia vaccine as your doctor advises. If you had the pneumonia vaccine before age 65, and that was over 5 years ago, you should get the vaccine again.

To stay healthy, you need plenty of exercise, good food, and rest. Drink fluids to keep mucus thin. It is easier to clear thin mucus from your lungs and airways. Clear airways are less prone to infection. **If you retain fluids or have heart failure, you must use caution in drinking fluids.** Follow your doctor's advice about drinking fluids.

Follow rules of good hygiene. **Wash your hands to avoid infections.** Avoid crowded public places during the flu season. Avoid people who have the flu, a cold, or a sore throat. Keep your nebulizers and inhalers clean. Follow instructions for maintaining your oxygen equipment. Call your doctor at the first sign of infection. The following are signs of infection:

- Your mucus changes in color, consistency, or amount.
- Your wheeze, cough, or shortness of breath gets worse.
- You get a fever or chills.

Air pollution

When you get indoor or outdoor air pollution in your lungs, it can trigger shortness of breath or lead to an infection. Avoid smoke, strong chemicals, and aerosol sprays. Use products that come as roll-ons, pump sprays, and liquids that are unscented. Avoid breathing in dust. Dust regularly with a damp cloth. If possible, have someone else do the heavy dusting and vacuuming.

Keep your furnace vents dust free. If you use an air cleaner, be sure you change the filter as the maker recommends. Keep your home free of molds.

During an air pollution or ozone alert, stay indoors, keep the windows closed if possible, and use a fan or air conditioner. Avoid strenuous activity. Air pollution affects you more when you exercise or exert yourself. Breathing faster and deeper makes you inhale more air pollution. Ozone levels are highest in May through September. Ozone levels also are higher in the afternoon. If ozone levels create a problem for you, limit your outdoor activity to early morning and after sunset. If you react to pollen, stay indoors, keep windows closed, and use a fan or air conditioner on high-pollen days. Call your doctor if you develop breathing problems.

Weather

Cold air can be dry and irritating to the lungs. To warm the air you breathe, cover your nose and mouth with a mask or scarf, and breathe through your nose. If there's not a mask or scarf available, cup your hand, and keep it over your nose and mouth.

During the cold weather season, dry indoor air can be a problem. A continuous feed humidifier on your furnace can be helpful. Be sure you clean it as the maker recommends. It is best to keep indoor humidity at about 40 percent. Your doctor may advise you about other methods to keep indoor air moist.

During the summer months, heat and humidity may cause difficulty breathing. On hot, humid days, stay indoors and use an air conditioner. If your COPD includes asthma (AZ-muh), you may need to be careful about allergies.

Second-hand smoke

Everyone should avoid second-hand smoke. Breathing second-hand smoke can change how the lungs and airways work. The airways may become more easily irritated. When people are exposed to second-hand smoke, their lungs may not work as well later in life. **Do not** allow smoking in your home. If anyone wants to smoke, ask him or her to smoke outside.

Cigarette smoking

One of the most important changes you can make is to **QUIT SMOKING**. Cigarette smoking is a major risk to your health. Smoking leads to shortness of breath and lack of energy. Smoking destroys the air sacs in the lungs. When you smoke, you breathe in nicotine and tars. The tars clog your airways and stay in your lungs. Normally, your airways are cleaned by hairs, called cilia (SILL-ee-uh). But smoking paralyzes the cilia. When the cilia do not work, the harmful matter stays in the airways and lungs. You then get less fresh air into your lungs. Clogged airways and lungs also provide perfect conditions for bacteria to grow. The bacteria may cause infections. When you smoke, you also breathe in carbon monoxide, which is a poisonous gas. Your blood then carries more carbon monoxide and less oxygen.

Is it too late to quit? Why quit now? **When you quit, COPD does not progress as quickly.** The destroyed air sacs cannot repair themselves, but your body will start to repair in other ways. The cilia start to work again. When less harmful matter blocks your airways, air flow increases. More oxygen gets into your lungs, and more carbon dioxide is able to get out. Your lungs will work to clean themselves, so you may cough more for a while after you quit. Even if you have some lung damage, more oxygen will be carried to your body tissues. For more information, refer to the UPMC patient education sheet [Smoking and Your Lungs](#).

Action plan to stop smoking

In order to quit smoking, you need to do 3 things: Prepare to quit, take action, and stay smoke free.

1. *Prepare to quit.*

Learn what is available to help you stop smoking. You may choose to quit “cold turkey,” to use nicotine or non-nicotine medicines, to join quit-smoking classes, or all of these. Another name for quit-smoking is smoking cessation (sess-AY-shun). “Cessation” means stopping. To learn more about smoking cessation classes at UPMC, call 1-800-533-UPMC (8762).

Cravings. Nicotine is a powerful drug that raises mood, reduces anxiety, and increases alertness. Nicotine causes changes in your brain that make your brain need nicotine. This is called addiction. When you try to quit smoking, the addiction causes you to have withdrawal symptoms.

The most common withdrawal symptoms are:

- lack of concentration
- irritability
- tiredness
- dizziness
- headaches
- craving for cigarettes

Today there are medicines that act as nicotine replacement. These medicines provide some nicotine to help people when they are craving nicotine. Nicotine replacement comes as a gum, patch, nasal spray, inhaler, or lozenge. Also available is a non-nicotine medicine that works on the brain to produce some of the same effects as nicotine. Ask your doctor about these medicines.

Habits. Craving nicotine is not the only hard part of quitting. Most smokers have had daily smoking habits for a long time. To break the habit, you need to change the way you think about smoking. It’s very helpful to develop a plan. Make a list of the times, places, and situations in which you usually smoke. Here are 3 tips to break the habit:

- Do something else during the times when you usually smoke.
- Avoid tempting situations.
- Stick with your effort.

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2. Take action.

Set a quit date. Destroy all cigarettes the night before your quit date. Throw away all ashtrays, matches, and lighters. For several weeks, avoid the places where you usually smoked, if possible. Each time you get the urge to smoke, tell yourself that the urge will leave soon. Remind yourself why you want to quit. Try keeping your hands busy. Some people play with paper clips, doodle, handle a coin, or do crossword puzzles. If possible, get up and walk when you feel the urge to smoke. If you need to have something in your mouth, take sips of water, chew ice or sugarless gum, or eat fruit or a low-calorie snack.

3. Stay smoke free.

When you are tempted to smoke, ask for help from your family and friends. Employers, communities, and makers of nicotine and non-nicotine medicines may offer telephone support. Telephone support may help you to stay smoke free.

Pennsylvania has a toll-free Tobacco Quitline at 1-877-724-1090. People with hearing impairment should call 1-877-228-4327.

There is no question that quitting is best for your health. Choose the plan that is best for you. For a complete guide to quitting smoking, see the UPMC patient education booklet [Journey to a Smoke-Free Life](#).

If you have questions

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



COPD: Nutrition, Oxygen, and Exercise

Information for Patients

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-fram). 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. Be careful not to get caught or trip on the tubing. 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 Guidelines

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 are wearing oxygen.
- **Do not** allow anyone to smoke around you. Put a “No Smoking” sign on your door.
- **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 very badly burned by an open flame that flares near oxygen. Talk to your doctor if you have an appliance with an open flame.
- Keep yourself and your oxygen equipment and tubing at least 5 feet away from any heat source that could ignite it. Some of these sources are hot pipes, candles, fireplaces, matches, stoves, and space heaters, even when not in use. Talk to your home oxygen supplier about a safe place and safe distance for your oxygen equipment in your home.
- **Do not** use appliances that may create a spark while you are wearing oxygen. These include hair dryers and electric shavers.
- Be careful when you unplug **any** appliances while you are wearing oxygen.
- **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.
- **Do not** use flammable products while wearing oxygen. These include cleaning supplies and aerosol sprays.

- **Do not** store large amounts of paper, fabrics, or plastic near oxygen containers.
- Store oxygen containers upright in an open, well-ventilated area. Be sure the containers cannot tip over.
- 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.
- Be alert for kinks in your tubing.
- Avoid touching pipes and other metal parts on a liquid oxygen system — the frost may injure your skin.
- Install smoke detectors in your home. Check them regularly to be sure they are working.
- Store fire extinguishers where you can easily access them. Make sure they do not become outdated.
- Tell your local fire department that you have oxygen in your home.

These are general guidelines. It's also very **important** to know your particular oxygen system. Work with your oxygen supplier to learn about your equipment. Know its safety guidelines and how to use and care for it.

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 1-800-533-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.

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- 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 [COPD: How to Breathe Better and Save Energy](#) on Pages 7-12 in this booklet.

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 _____.



COPD: Medicines

Information for Patients

Variety of medicines

Several groups of medicines are used to help people with COPD. These medicines cannot prevent long-term decline in lung function. What they can do is help prevent or decrease symptoms and keep people with COPD out of the hospital longer. These medicines include bronchodilators, steroids, expectorants, mucolytics, and antibiotics.

Many of these medicines are inhaled. See [COPD: How to Use Inhalers](#) on Pages 31-37 in this booklet. Some of these medicines are taken by mouth as pills or liquids. Others are taken as nebulized (NEB-you-liezd) liquids. See the “Nebulizers” section on Page 29.

The best medicine for people with COPD may be oxygen. Your doctor can assess your oxygen levels to see if you qualify for oxygen therapy. To learn more, see [COPD: Nutrition, Oxygen, and Exercise](#) on Pages 17-21 in this booklet.

Note: This booklet tells you some basics about COPD medicines. The information is not intended to be complete for every COPD medicine. Please ask your pharmacist and health care team for detailed information about each of your medicines.

Two names

It’s important to know that every medicine has 2 names. A medicine has a **generic** name and a **brand** name. The generic name is the scientific name of the drug. The brand name is the name that a specific company uses when it makes that drug. As an example, look at a common headache medicine. Many people use acetaminophen for a headache. Acetaminophen is the generic name of the drug. The brand names include Anacin Aspirin Free, Bayer Select Headache, Panadol Maximum Strength, and Tylenol.

New medicines

When your doctor prescribes a new medicine for you, you should review all of the medicines you take — both prescribed and over-the-counter — with your doctor. Every time you go to the doctor, take a list of all of your medicines with you, **including inhalers**. If your doctor changes your medicines and you start to feel side effects, call your doctor. To learn more about taking medicine, see the UPMC patient education sheet [Safety Tips: For Taking Your Medicine](#).

Bronchodilators

Bronchodilators (bronk-oh-DIE-lay-ters) relax and open your airways to increase the flow of air. They let you exhale more completely. The preferred way to take these medicines is by inhalers. Others may be taken as pills, liquids, or nebulized liquids. Bronchodilators may be given on an as-needed basis for relief of symptoms that persist or worsen. They may also be given on a regular basis to prevent or reduce symptoms. When you use inhalers, it's **very important** to talk to your doctor about a treatment plan.

Short-Acting Bronchodilators

Inhaled beta-2 agonists. These drugs are short-acting bronchodilators that provide quick relief — they are fast-acting. They start to work in minutes, but last only 4 to 6 hours. These medicines are sometimes called “rescue medicines.” Short-acting bronchodilators include:

Generic name	Brand name
albuterol	Proventil Proventil HFA Ventolin
metaproterenol	Alupent
pirbuterol	Maxair
terbutaline	Brethaire
bitolterol	Tornalate
levalbuterol	Xopenex

Keep one of these inhalers, if prescribed, with you at all times. Use it as prescribed when you have shortness of breath. If you need a fast-acting inhaler more than 12 times a day, call your doctor.

An increased use of rescue medicine may mean that your COPD is not well controlled. Possible side effects of fast-acting bronchodilators include faster heart beat, headache, and shaking (tremors). If you have side effects that bother you, talk to your doctor.

Anticholinergics. Anticholinergic (an-tee-call-in-ER-jik) bronchodilators affect nerve impulses sent by the vagus nerve. A bronchodilator of this type is:

Generic name	Brand name
ipratropium	Atrovent

When the vagus nerve is stimulated, the airways can narrow. Ipratropium helps relieve this tightening of the airways, which is called bronchospasm (bronk-oh-SPAZ-im). Ipratropium helps to keep the airways open. It works in 5 to 15 minutes and lasts for 4 to 6 hours. This drug is short-acting (but **not** fast-acting).

Ipratropium comes both as a metered-dose inhaler (MDI) and as a liquid for a nebulizer. Take this medicine only as directed by your doctor. Usually this means 2 puffs from your inhaler every 4 to 6 hours. Unless your doctor tells you otherwise, you should not take more than 2 puffs more than 4 to 6 times a day. Side effects may increase from too frequent use. Ipratropium is **not** a rescue medicine. Be sure to talk to your doctor about a treatment plan when you use ipratropium.

You should not use ipratropium if you have an allergy to soy products or peanuts. Tell your doctor and pharmacist of all your allergies. Be sure to include any allergies to medicine and food.

Possible side effects of ipratropium include dry mouth and bitter taste. **Do not** allow the spray to get into your eyes. Be very careful. When you activate the inhaler, close your eyes. If you get ipratropium in your eye, it may cause blurred vision or worsen narrow-angle glaucoma. A spacer can help to keep spray out of your eyes. To learn about spacers, see [COPD: How to Use Inhalers](#) on Pages 31-37 in this booklet.

See “Combined Inhaled Medicines,” Pages 27-28, for an inhaler combining ipratropium and albuterol (brand name Combivent).

Long-Acting Inhaled Bronchodilators

Long-acting bronchodilators last about 12 hours or as long as 24 hours. It depends on their type. These medicines help to keep your symptoms under control. So they sometimes are called “controllers.” They’re also called “maintenance” bronchodilators. Usually these medicines are used on a regular basis (**not** “as needed”). They generally do not provide quick relief. **Do not** take them for an attack. They should not be used for immediate relief of breathing problems.

The 2 types of long-acting bronchodilators are beta-2 agonists and anticholinergics.

Generic name	Brand name
salmeterol	Serevent
formoterol	Foradil

Salmeterol. This beta-2 agonist is inhaled by a dry-powder inhaler or a metered-dose inhaler (MDI). Salmeterol is usually taken 2 times a day, 12 hours apart. It begins to work in about 20 to 30 minutes. **Do not** take this medicine for an attack. Possible side effects include headaches in the first few weeks of use, shaking (tremors), higher blood pressure, or faster heart beat.

See “Combined Inhaled Medicines,” Pages 27-28, for the inhaler Advair (brand name), which combines salmeterol with fluticasone. It is another long-acting bronchodilator.

Formoterol. This beta-2 agonist is usually taken 2 times a day. It begins to work in less than 5 minutes, but it is not a rescue medicine. **Do not** take formoterol for an attack. It is sometimes prescribed for people who have tightening of the airways brought on by exercise. This medicine comes as a dry powder in a gelatin capsule. It is taken using a special type of inhaler that is packaged with the medicine. Possible side effects include shaking (tremors), trouble sleeping, faster heart beat, muscle cramps, and nausea.

Generic name	Brand name
tiotropium	Spiriva HandiHaler

Tiotropium. This anticholinergic is especially for COPD. It is taken just once daily. As with other long-acting bronchodilators, **do not** take it for immediate relief of breathing problems. This medicine comes as a powder in a capsule. It is inserted into a special type of inhaler called the HandiHaler. **Do not** swallow the capsule. The only way to take this medicine is with the HandiHaler. Be sure to learn the correct way to use it. Read the package insert that comes with this medicine. On the Web, you can also find Patient’s Instructions for Use at www.spiriva.com.

Possible side effects of this medicine include dry mouth, which may go away with continued use; constipation; faster heart rate; blurred vision; eye pain or redness; and trouble urinating. Be careful not to let the powder get into your eyes. Tell your doctor right away if you have any eye problems. **Do not** take this medicine if

you've ever had a bad reaction to atropine, ipratropium, or ingredients listed on the package insert. If you also are prescribed ipratropium (Atrovent), it's **very important** to talk to your doctor. Ask if you should stop this medicine or how you should continue to use it.

Oral Bronchodilators

Oral bronchodilators are taken by mouth. They are used to aid inhaled medicines. Oral bronchodilators work by relaxing the muscles around the airways.

Theophylline. This drug is an oral bronchodilator that belongs to a group of drugs called methylxanthines (meth-ill-ZAN-theenz). These medicines may also help the diaphragm to work better. Theophylline is sold under several brand names:

Generic name	Brand name
theophylline	Slo-Bid Theochron Theo-Dur Theo-24 Uniphyl

Possible side effects include stomach upset, faster heart beat, trouble sleeping, and hyperactivity in children. Some medicines, foods, and even smoking can change the way your body uses these medicines. You will need to have regular blood tests to check if your dosage is right for you or needs to be changed.

Oral beta-2 agonists. Other oral bronchodilators belong to the group of medicines called beta-2 agonists. These include:

Generic name	Brand name
albuterol	Proventil Volmax VoSpire ER
terbutaline	Brethine

These oral bronchodilators also relax the muscles around the airways. Some of the generic names of these oral beta-2 agonists are the same as those for inhaled beta-2 agonist bronchodilators. The possible side effects are similar and include faster heart beat, headache, trouble sleeping, and shaking (tremors).

Steroids

Steroids (STEER-oyds) may help to reduce swelling and inflammation. Steroids may also be called corticosteroids (KOR-ti-ko-STEER-oyds). Steroids are beneficial for asthma, and experts believe that inhaled steroids may also be beneficial for COPD. Steroids may decrease the number of times that symptoms get worse. In COPD, these episodes are called exacerbations (eg-zass-er-BAY-shuns).

Steroids are available as inhalers, which include metered-dose inhalers (MDIs) and dry-powder inhalers. Steroids also come as liquid for nebulizers, as pills, and as injections (shots).

Inhaled steroids. Of all the types of steroids, inhaled steroids usually cause the fewest side effects because very little enters your blood stream. Most of the inhaled steroid medicine goes to your lungs where you need it. **Do not** use steroids for fast relief of shortness of breath.

Inhaled steroids available today include:

Generic name	Brand name
beclomethasone dipropionate	Beclovent QVAR Vanceril
budesonide	Pulmicort Turbuhaler
flunisolide	AeroBid
fluticasone	Flovent
triamcinolone	Azmacort

Possible side effects of these medicines include hoarseness or a yeast infection in the mouth. There are several things you can do to avoid these side effects. Gargling with mouth wash or even water after taking these steroids helps to prevent side effects. If you use an MDI, attach a spacer to the inhaler. For more information about spacers, see [COPD: How to Use Inhalers](#) on Pages 31-37 in this booklet.

Oral steroid. The oral steroid is:

Generic name	Brand name
prednisone	many brand names

Any steroid medicine may have side effects. Possible side effects with short-term steroid use include:

- bigger appetite
- retaining fluids
- weight gain
- nausea or vomiting
- stomach upset or ulcers
- blood sugar changes

Possible side effects with long-term use include:

- high blood pressure
- thinning bones
- cataracts
- muscle weakness
- easier bruising
- slower wound healing

Oral steroids slow down the work of your adrenal glands. But when COPD symptoms suddenly get worse, oral or intravenous (IV) steroids are often needed. It's **important** to take steroids **exactly** as your doctor says.

Note: You can become seriously ill if you stop taking steroids suddenly. **Do not** stop taking any steroid medicines without talking to your doctor.

Combined inhaled medicines

Many inhaled medicines are available for COPD. Some people with COPD may need to take several of these medicines to manage their disease. To simplify taking these medicines, some have been combined into one inhaler. For example, some inhalers combine a maintenance (controller) inhaler and a rescue inhaler. Others combine 2 maintenance inhalers. Some combined inhalers include:

Generic name	Brand name
albuterol and ipratropium	Combivent
albuterol and ipratropium	DuoNeb (used with a nebulizer)
salmeterol and fluticasone	Advair

Combivent. This medicine combines albuterol and ipratropium. Combined bronchodilators often have a greater effect than either of the drugs used alone at the recommended dosage. Combivent comes as a metered-dose inhaler (MDI). It works quickly to keep the airways open and lasts up to 4 to 6 hours. The usual dosage is 2 puffs, 4 times a day, unless your doctor tells you otherwise. **Do not** increase the dosage or frequency without consulting your doctor.

If Combivent becomes less effective over time in relieving your symptoms, call your doctor. Be careful about taking this medicine with other fast-acting bronchodilators. Combivent already includes a fast-acting rescue medicine. It's **important** to tell your doctor if you are using rescue medicines.

Do not allow the Combivent spray to get into your eyes. Be very careful. When you activate the inhaler, close your eyes. Remember that Combivent contains ipratropium. If you get any spray into your eye, it may cause blurred vision or worsen narrow-angle glaucoma. A spacer can help to prevent this. If you are allergic to soy products or peanuts, **do not** take Combivent. Talk to your doctor about these allergies.

DuoNeb. This medicine also combines albuterol and ipratropium. You take DuoNeb with a nebulizer. It gives the same benefits as Combivent, but it is in liquid (nebulizer) form.

Advair. This medicine is sometimes prescribed for people with COPD. Advair combines 2 controllers: salmeterol (a bronchodilator) and fluticasone (a steroid). Advair offers the long-acting bronchodilator effects of salmeterol and the steroid's ability to reduce swelling in 1 inhaler. It is usually prescribed 2 times a day, morning and evening, about 12 hours apart. **Do not** exceed this dosage.

Note: Advair comes in 3 different strengths that are color-coded. The fluticasone (steroid) dosage is different in each. When you go to the doctor, take your Advair with you. Ask the doctor to check if you are taking the right dosage. Keep in mind that when you change the dosage of any combined medicine, you are changing the dosage of **2** medicines, not just 1 medicine. **Always** follow the advice of your doctor.

Advair does **not** replace fast-acting inhalers (rescue medicines) to treat an attack of severe symptoms. You will usually have a fast-acting rescue inhaler for an attack. Talk to your doctor about how to use your rescue medicine for severe symptoms. If your doctor prescribes Advair, be sure to tell your doctor about any other inhaled medicines you are taking. You should not take salmeterol, formoterol, or inhaled steroids along with Advair, unless your doctor tells you otherwise. Also **do not** take Advair with a spacer device.

Expectorants and mucolytics

Expectorants (ex-PECK-ter-ents) and mucolytics (myu-ko-LIT-iks) are medicines that may help move secretions out of the lungs and airways. How well they work is not clear. For some people, drinking 6 to 8 glasses of water a day can have the same effect, and it costs less. Check with your doctor before trying this. If you retain fluids or have heart failure, you must be careful about drinking fluids.

Expectorants. These medicines increase fluid in your lungs and airways, and this helps secretions to liquefy and thin. These medicines come as pills and liquids. The most common one is:

Generic name	Brand name
guaifenesin	many brand names

Mucolytics

These medicines break down mucus to make it easier to clear the lungs and airways. The most common one is:

Generic name	Brand name
acetylcysteine	Mucomyst

Mucomyst is taken with a nebulizer and is prescribed along with a bronchodilator.

Antibiotics

Antibiotics are used to treat infections caused by bacteria. Your doctor will choose medicine that is best to attack the kind of infection you have. It is very **important** to take all the medicine prescribed. If antibiotics are not taken as directed, the bacteria may become weakened, but not destroyed. This leads to antibiotic resistance. Always take antibiotics as your doctor says to destroy all the bacteria.

Call your doctor at the first sign of infection. The following are signs of infection:

- Your mucus changes in color, consistency, or amount.
- Your wheeze, cough, or shortness of breath gets worse.
- You get fever or chills.

Nebulizers

A nebulizer is a small machine that changes liquid medicine into a fine mist. You then inhale the mist into your lungs. Many different nebulizers are on the market today. Directions for use are supplied by each company that makes these devices. To prevent infection, it is **important** to clean your device as the company recommends. Talk to your doctor about the best way for you to take inhaled medicines. Also check with your insurance company. Some insurance plans require a co-payment for nebulized medicines.

If you have questions

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



COPD: How to Use Inhalers

Information for Patients

Inhaled medicines

Inhaling is often the best way to take medicine for COPD. Inhaled medicines go directly to the airways and cause fewer side effects. There are several types of inhalers. Some common ones are the metered-dose inhaler (MDI), the Aerolizer inhaler, and the dry-powder inhalers (Diskus and Turbuhaler). The metered-dose inhaler has been available for years. The dry-powder inhaler and the Aerolizer are newer.

This booklet does not tell you about all the devices available to inhale medicine. New devices are coming on the market. It is **very important** to learn the correct way to use your inhaling device. For devices not in this booklet, be sure you get detailed instructions. Read the package insert, which may have printed instructions with diagrams. Also ask your health care team to watch how you use the inhaling device.

Metered-dose inhalers

There are 3 different methods for using metered-dose inhalers (MDIs):

- open-mouth method
- closed-mouth method
- spacer method

The spacer method is often preferred. A spacer deposits less medicine in your mouth and the back of your throat. With a spacer, you can inhale more medicine directly into your lungs, where you need it. The next preferred method is the open-mouth method. When mastered, it leaves less medicine in your mouth and throat and more in your lungs. It's **important** to become very familiar with the method you use. This will ensure that you get the most benefit from your medicine.

Open-Mouth Method



Follow these steps:

1. Remove the cap. Hold the inhaler upright.
2. Check to be sure the mouth piece is free of any foreign object (such as a coin).
3. Shake the inhaler.
4. Tilt your head back slightly. Breathe out slowly.
5. Place the inhaler 1 to 2 inches in front of your open mouth (the width of 2 fingers).
6. Press down on the canister firmly as you start to breathe in slowly. (Press down until the medicine is released.)
7. Breathe in slowly for a count of 3 to 5 seconds.
8. Hold your breath for a slow count to 10 (10 seconds).
9. If more puffs are prescribed, the ideal is to wait between doses. This will make the medicine more effective.
 - For bronchodilators that are short-acting beta agonists, it is best to wait 10 minutes between doses. But you may find it more practical to wait 3 to 5 minutes. These fast-acting inhalers begin to open your airways quickly. When you wait after your first dose, the next doses can go deeper into your lungs. See “How to Sequence Inhalers,” Page 37.
 - For other inhalers, try to wait 1 minute between puffs.
10. Rinse and gargle with mouth wash or with water after using any steroid inhaler (even when it’s combined with another medicine).

Note: If you carry your inhaler in a purse or pocket, make sure the cap stays secured. If the cap comes off, be sure to check the mouth piece for foreign objects (such as a coin) before you use the inhaler.

Closed-Mouth Method

Note: This method is **not** preferred over the spacer or open-mouth methods. Less medicine reaches your airways with the closed-mouth method.



Follow these steps:

1. Remove the cap. Hold the inhaler upright.
2. Check to be sure the mouth piece is free of any foreign object (such as a coin).
3. Shake the inhaler.
4. Tilt your head back slightly. Breathe out slowly.
5. Place the inhaler in your mouth. Close your mouth.

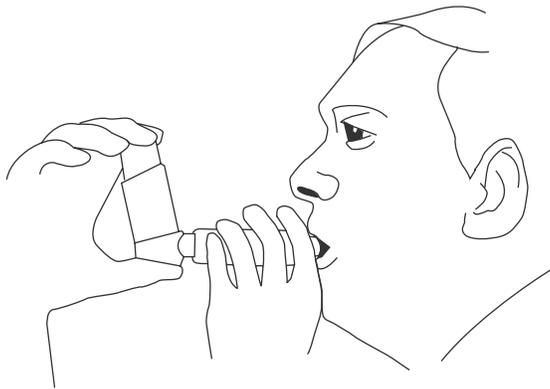
6. Press down on the canister firmly as you start to breathe in slowly. (Press down until the medicine is released.)
7. Breathe in slowly for a count of 3 to 5 seconds.
8. Hold your breath for a slow count to 10 (10 seconds).
9. If more puffs are prescribed, the ideal is to wait between doses.
 - For bronchodilators that are short-acting beta agonists, it is best to wait 10 minutes between doses. But you may find it more practical to wait 3 to 5 minutes. These fast-acting inhalers begin to open your airways quickly. When you wait after your first dose, the next doses can go deeper into your lungs. See “How to Sequence Inhalers,” Page 37.
 - For other inhalers, try to wait 1 minute between puffs.
10. Rinse and gargle with mouth wash or with water after using any steroid inhaler (even when it’s combined with another medicine).

Note: If you carry your inhaler in your purse or pocket, make sure the cap stays secured. If the cap comes off, be sure to check the mouth piece for foreign objects (such as a coin) before you use the inhaler.

Spacer Method

Spacer devices offer several benefits. When you use a spacer, more medicine reaches your lungs, where you need it. Less medicine is deposited on your tongue and the back of your mouth. Side effects also are fewer and milder. For example, you will have less hoarseness and fewer mouth and throat reactions. If it's hard for you to compress the canister and inhale at the same time, your medicine dose may be more effective when you use a spacer.

There are several types of spacers available. It's **important** that you follow the instructions on the package insert for your particular spacer.



Follow these steps:

1. Remove the caps. Check to be sure the inhaler and spacer are free of any foreign object (such as a coin).
2. Attach the inhaler to the spacer.
3. Shake well.
4. Tilt your head back slightly. Sit upright, and breathe out normally.
5. Place the mouth piece into your mouth. Close your lips around it.
6. Press down on the canister firmly until the medicine is released. This will put 1 puff of the medicine into the spacer.
7. Breathe in slowly for a count of 3 to 5 seconds. Many spacers whistle if you inhale too fast.
8. Hold your breath for a slow count to 10 (10 seconds).
9. Remove the spacer from your mouth, and then breathe out slowly.
10. If more puffs are prescribed, the ideal is to wait between doses. This will make the medicine more effective.
 - For bronchodilators that are short-acting beta agonists, it is best to wait 10 minutes between doses. But you may find it more practical to wait 3 to 5 minutes. These fast-acting inhalers begin to open your airways quickly. When you wait after your first dose, the next doses can go deeper into your lungs. See “How to Sequence Inhalers,” Page 37.
 - For other inhalers, try to wait 1 minute between puffs.
11. Rinse and gargle with mouth wash or with water after using any steroid inhaler (even when it's combined with another medicine).

Note: If you carry your inhaler and spacer in your purse or pocket, make sure the caps stay secured. If the cap comes off, be sure that the inhaler and spacer are free of foreign objects (such as a coin) before use.

Doses Left

You can use the math method below to find out how much medicine is left in your MDI.

Number of days. To find out the number of days that you can use a **new** MDI, follow the steps below.

Step 1: Each inhaler is marked with the number of doses it contains. Find the number of doses marked on your inhaler.

Example: 200 doses (or puffs)

Step 2: Add up the number of puffs you use each day.

Example: 2 puffs in the morning **plus** 2 puffs in the evening = 4 puffs per day

Step 3: Take the number of doses (puffs) marked on your new inhaler. Divide it by the number of puffs you use each day.

Example: 200 doses (puffs) **divided by** 4 puffs = 50 days of use

Take the number of days of use in your new inhaler. On your calendar, count that number of days ahead from the first day you will use the inhaler. Mark the date on your calendar that shows when the inhaler will be empty. Refill your inhaler prescription a day or two before the target empty date. Also, write the target empty date on the canister with an indelible marker.

Number of doses. To find out the number of doses left in your MDI, follow the steps below.

Step 1: Count the number of puffs you have used from one inhaler for a certain number of days.

Example: 4 puffs per day **times** 40 days = 160 puffs used

Step 2: Subtract the number of puffs used from the total doses (puffs) marked on the inhaler.

Example: 200 doses (puffs) **minus** 160 puffs used = 40 puffs left

Step 3: Divide the number of puffs left by the number of puffs you will use each day.

Example: 40 puffs left **divided by** 4 puffs per day = 10 days of use left

The math method works **only** if you take a set number of puffs every day from your inhaler. If you use your inhaler “as needed,” this method does **not** work.

Note: There is a device on the market that attaches to your canister and counts the number of doses used.

MDI Care

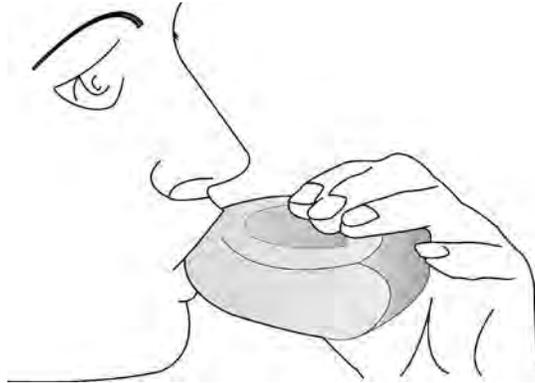
Metered-dose inhalers. Rinse the mouth piece (plastic housing) and cap daily in warm running water. Wash the mouth piece and cap in mild soap and rinse in warm water at least 2 times a week, and more often if you have an infection. The mouth piece and cap must be dry before you use the inhaler again. While the cleaned inhaler is drying, you must use another inhaler.

Spacers. Clean your spacer well. Follow the instructions on the package insert for your specific spacer.

Dry-powder inhaler

The Diskus is a dry-powder inhaler.

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How to Use the Diskus Inhaler

Follow these steps:

1. Hold the Diskus with one hand.
2. Place your thumb on the thumb grip. Then push it as far away from you as it will go. You will now see the mouth piece.
3. Slide the “trigger” away from you until you hear it click. Your dose is now ready to be inhaled.
4. Bring the Diskus opening up to your mouth. Be careful not to tilt the Diskus. It must stay in a level position until after you inhale the medicine.

5. Place the Diskus opening up to your mouth. Take in a slow, deep breath. As you breathe in, count to 5. This allows you to breathe all the medicine into your airways.
6. Hold your breath for up to 10 seconds. Move the Diskus away from your mouth.
7. Breathe out slowly.
8. Close the Diskus by sliding the thumb grip back over the mouth piece.
9. Rinse and gargle with diluted mouth wash, or just with water if you’re not able to use mouth wash. This helps prevent hoarseness and an infection in your mouth from the inhaled steroids.
10. **Never** wash the Diskus after use.

Doses Left

A counter on top of the Diskus shows how many doses are left. Each time you click the trigger, 1 dose is released, and the counter reduces by 1.

Diskus Care

Do not wash Diskus inhalers after use. You may wipe them with a clean, damp cloth to remove any residue. The Diskus must **always** be kept dry.

How to sequence inhalers

Many people use several inhalers at a time. You may wonder which inhaler you should use first. Keep in mind that bronchodilators work faster than inhaled steroids. Use bronchodilators first because these fast-acting inhalers open your airways quickly. Use the inhaled steroids last, so then they can go deeper into your lungs.

The general rules are:

- First, use your fastest-acting bronchodilator, for example, albuterol.
- Next, use any other bronchodilators prescribed for your regular use, for example, Atrovent.
- Last, use your steroid inhaler.

Gargling

It's **very important** that you rinse and gargle after you use inhaled steroids. Rinse and gargle with mouth wash or just water after using any steroid inhaler (even when it's combined with another medicine). This will prevent unwanted side effects that may occur with inhaled steroid use. One of these side effects is called oral thrush. If your mouth or tongue become sore or reddened, call your doctor. You may need special medicine to treat this condition.

When should you seek help?

If any of the following happen to you, take steps to 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 1-800-533-UPMC (8762).

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