

APRIA  
**RESPIRATORY** *Assist*<sup>SM</sup>  
PROGRAM

**Patient Education for COPD Management**



APRIA HEALTHCARE®







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*This manual is dedicated to everyone who has a breathing problem. Its purpose is to provide information about the respiratory system and methods of living with lung disease so you can “breathe easier.”*

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## What Is COPD?

C.O.P.D. stands for **Chronic Obstructive Pulmonary Disease**. This is the “umbrella” term used to describe the chronic illness of emphysema, chronic bronchitis or a combination of these illnesses. They are called chronic obstructive lung diseases because the ability to exhale air or to breathe out is partially obstructed.

Most people have a combination of both emphysema and chronic bronchitis, but some may have only one or the other.

Someone with COPD may experience any of the following symptoms:

- Shortness of breath
- Wheezing
- Coughing
- Excess mucus production

### **What Happens to the Lungs When You Have COPD?**

**Emphysema** — is the permanent destruction of air sacs in the lungs. Healthy air sacs squeeze air out like a balloon losing air. Damaged air sacs stretch but cannot contract. Air becomes trapped in the lungs. Breathing problems cause shortness of breath in the patient with emphysema. First, not enough oxygen can get into the air sacs to enter the blood; second, there is difficulty squeezing carbon dioxide out of the lungs and too much builds up in the blood and lungs; and third, overfilled air sacs produce pressure

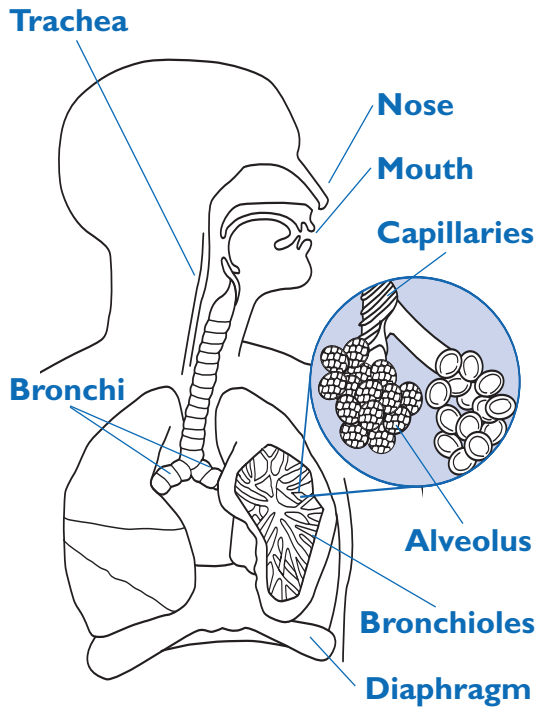
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## What Is COPD? *(continued)*

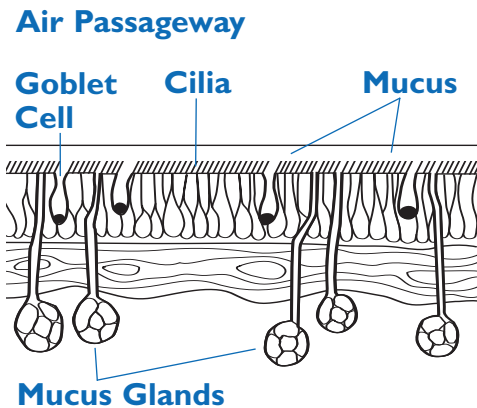
on the bronchi during a forceful cough. This results in collapsed bronchi and trapped mucus and air inside the air sacs.

**Chronic Bronchitis** — Physicians call chronic bronchitis a cough with mucus production that lasts several months and recurs often. Causes of chronic bronchitis are years of exposure to such lung irritants as cigarette smoke, infections, and polluted air. The disease comes on slowly, but there are signs. Too much mucus production during and after a cold may cause long bouts of coughing. Then, over a couple of years, a morning cough may occur. The cough is the result of a build-up of about two tablespoons of mucus while laying flat in bed overnight. A later sign of chronic bronchitis is shortness of breath, caused by permanent lung damage.

# Your Respiratory System and Breathing



*The respiratory system*



*Lining of the bronchioles*

The function of the respiratory system is to take oxygen into the body and remove carbon dioxide. Oxygen is present in the air and is used by the body to produce energy. Carbon dioxide is produced as the body uses oxygen.

Air enters the body through the airways. The airways are composed of many tubes that branch out and become smaller as the air moves down, like the branches of a tree. The largest tube is the trachea, or windpipe. The trachea connects with smaller airways called bronchi and bronchioles. The airways end in tiny air sacs called alveoli.

Blood flows through the air sacs. The blood takes the oxygen from the air sacs and carries it to the tissues where it is used to produce energy. As the oxygen is used by the tissues to produce energy, carbon dioxide is formed. Carbon dioxide is a waste product, which the body must expel. The blood carries the carbon dioxide back to the lungs where it is exhaled.

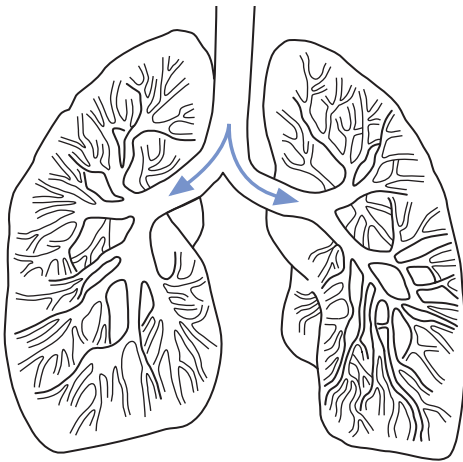
## Respiratory System

### NOSE

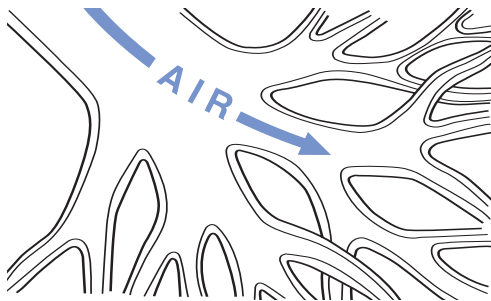
Your nose filters, warms and humidifies the air you breathe into your lungs.

### MOUTH

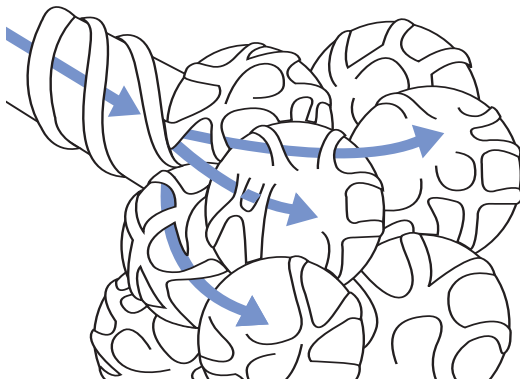
Your mouth is used for talking, eating and other non-respiratory functions. It is better to breathe in through your nose and out through your mouth.



*The lungs*



*Air moves through the airways*



*At the end of the airways are tiny air sacs*

### **TRACHEA**

The trachea is also called the windpipe. It connects the upper airway to your lungs.

### **BRONCHI**

The trachea divides into two bronchi, a right one and a left one.

### **BRONCHIOLES**

The bronchioles are tiny branches, which divide off from the bronchi.

### **CILIA**

Cilia are small, hair-like projections in the bronchioles that help move mucus upward where it can be expectorated.

### **MUCUS GLANDS**

The mucus glands secrete mucus to trap foreign particles so that they do not enter the air sacs.

### **ALVEOLI**

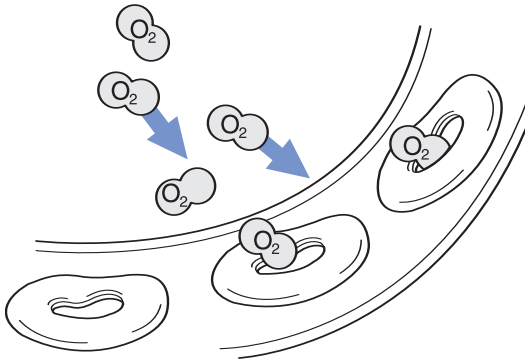
Each bronchiole ends in a very tiny air sac called an alveolus. The alveoli are at the end of the bronchiole in bunches and look much like a bunch of grapes. You have about 300 million alveoli.

### **DIAPHRAGM**

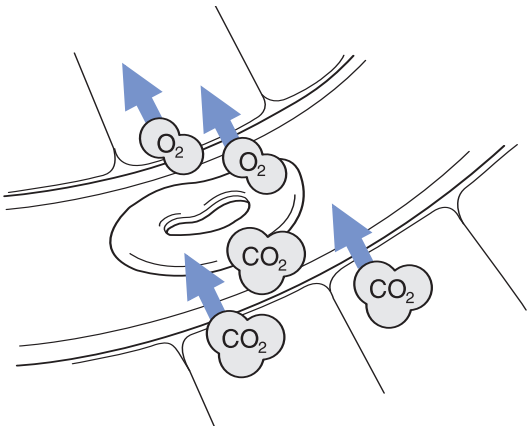
The diaphragm is dome-shaped and the major muscle of respiration.

## The Breathing Process

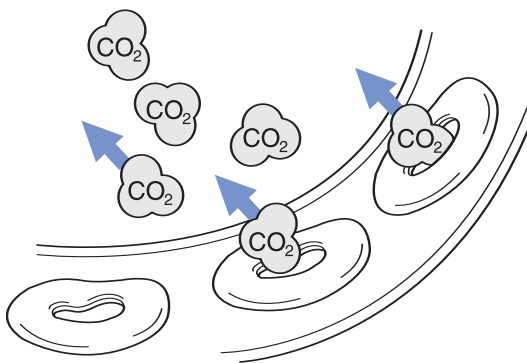
When you breathe in, oxygen comes in as part of the air. It goes through the airways, which get smaller and smaller. The airways end in tiny air sacs called alveoli. The oxygen passes into the blood from the air sacs. Oxygen is released from the blood to the tissue and used to produce energy. Carbon dioxide is formed as the energy is produced. The blood then picks up the carbon dioxide and carries the carbon dioxide back to the lungs where it is exhaled.



*Oxygen moves from the air sacs into the blood*



*Blood releases oxygen and picks up carbon dioxide*

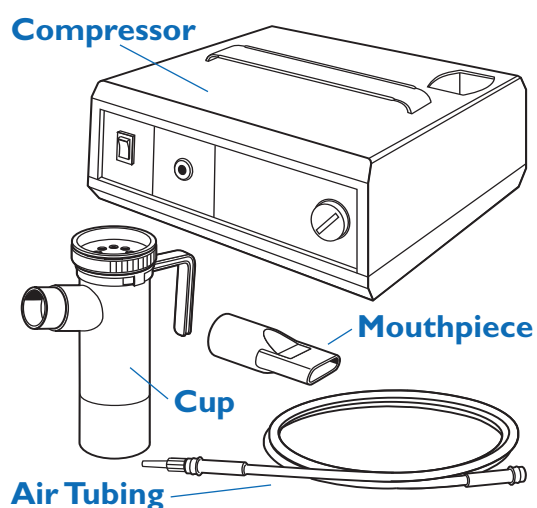


*Blood carries carbon dioxide back to the lungs*

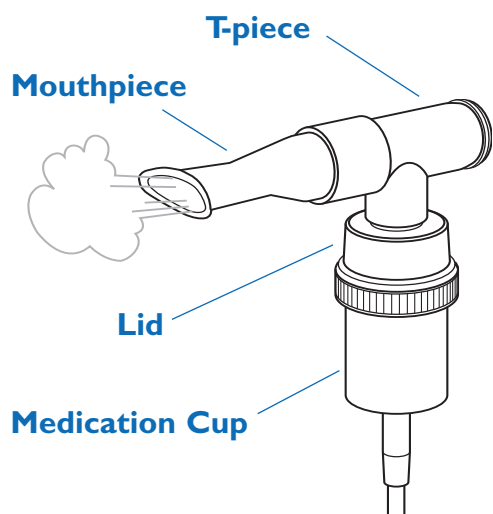
# Inhaled Medications, Nebulizers and Inhalers

Although there is no cure for COPD, there are a number of medications available to help you control your COPD and allow you to live more comfortably.

Your physician will prescribe the best medications for your disease. It is important that you take these medications as ordered and let him/her know how the medications are affecting you.



*Typical small volume nebulizers*



*Typical mouthpiece configuration*

## Using a Nebulizer

A nebulizer is a small hand-held unit, which is used to deliver medication deep into your lungs. The nebulizer device changes liquid medications (called unit dose medications) into a fine mist. This mist is deposited deep into your airways, relieving congestion and opening up your breathing tubes.

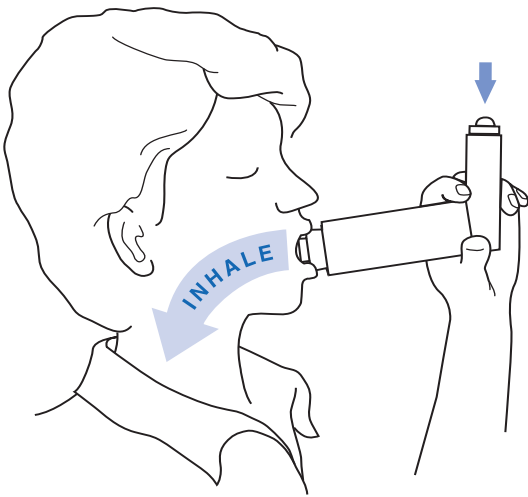
## A Common Question About Inhaled Medications

*Why can't I just use these medications when I am not feeling well?*

Nebulizer medications have an effective period of four to six hours. After that period, your airways return to the same level as before the medication. For diseases with persistent breathing problems, such as COPD, using medications “as needed” is simply not enough to maintain good breathing. To keep your airways open and performing at their best, it is important to take the medication as it was ordered by your physician.

## Using an Inhaler

If you have COPD, your physician may prescribe medication that you inhale using a metered-dose inhaler. An inhaler is a pressurized sprayer that delivers a measured amount of medication. The medication comes in a disk or a canister that fits into the inhaler jacket. Often a tube (spacer) is attached to the inhaler. A spacer helps the medication get farther into your lungs. Follow the steps below:



*Breathe in through your mouth slowly*

**Step 1. Remove the caps** from the inhaler and the spacer. Attach the spacer to the inhaler. Then shake the inhaler well. **Hold the inhaler** with your middle finger on the sprayer. Put your index finger and thumb around the spacer.

**Step 2. Breathe out normally** through your nose. Then put the opening of the spacer in your mouth, between your teeth. Close your lips around it. **Press down once** on the sprayer. This sprays one puff of medication into the spacer. Keep your chin up.

**Step 3.** While keeping the spacer in your mouth, **slowly breathe in** through your mouth as deeply as you can. This should take at least three to four seconds. If you are breathing in too quickly, the spacer may make a whistling sound.

**Step 4. Hold your breath** as you slowly count to 10. Then take the spacer out of your mouth. Pucker your lips as if you were going to blow out a candle. Breathe out slowly.

If you have been prescribed more than one puff of medication at a time, wait at least 30 seconds between puffs — unless told otherwise. Shake the inhaler again. Then repeat steps 2–4.

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# Home Oxygen Therapy

More and more people with COPD (emphysema, chronic bronchitis) as well as congestive heart failure and asthma are using oxygen therapy in the safety and comfort of their own home, permitting them to lead active and productive lives.

Home oxygen therapy may be ordered by your physician to help provide more oxygen to your body for your impaired lungs to work with.

Normal respiration allows the air you breathe to travel from your nose and mouth, through your airways to your lungs. In your lungs, the oxygen in the inhaled air crosses over into your blood. The oxygen-enriched blood then travels from the lungs through your heart and is pumped or distributed to your body's tissues and organs. Blood that has given up its oxygen to the tissues and organs returns to the heart and lungs for a resupply of oxygen. Illnesses such as emphysema, chronic bronchitis and bronchial asthma result in damage to your airways and lungs, making them less efficient and effective in allowing the oxygen in the air you breathe to transfer to your blood.

Home oxygen therapy is just that...extra oxygen therapy for your impaired lungs to function properly with.

Because it is considered to be a medication, to order oxygen for you in your home, your physician must first write a prescription for oxygen therapy.

The prescription will spell out the flow rate, how much oxygen you need per minute, referred to as

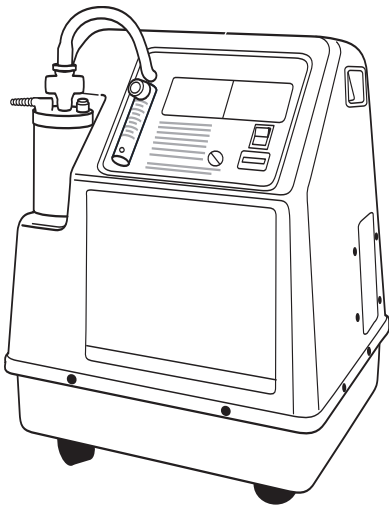
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## Home Oxygen Therapy *(continued)*

liters per minute (LPM), route of administration and when you need to use the oxygen. Some people use home oxygen therapy only while exercising, others only while sleeping, and still others need oxygen continuously. Your physician will order tests to determine what your body's oxygen level needs are. It is important to follow your physician's order and use your oxygen exactly as specified. Do not increase or decrease your oxygen flow rate unless directed by your physician.

### Home Oxygen Therapy Equipment

The most common method of delivering home oxygen to a patient is via a nasal cannula, which is a two-pronged device inserted in the nostrils that is connected to oxygen tubing carrying the oxygen from the home oxygen therapy device that your physician has ordered for you.



*A typical oxygen concentrator*

Each of the most common methods of delivering home oxygen therapy in the home is discussed in more detail.

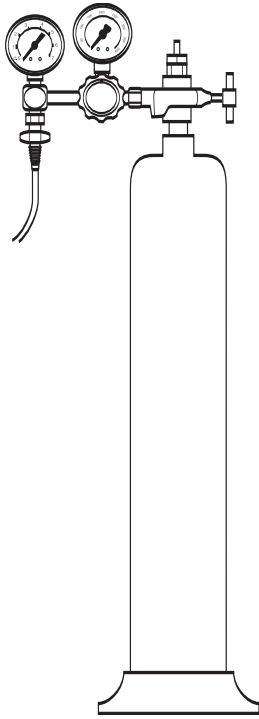
The three most common means of delivering home oxygen therapy in your home are:

1. Oxygen Concentrator
2. Liquid Oxygen
3. Oxygen Cylinder Equipment

**Oxygen Concentrator** — This is an electrically powered device that operates by separating the oxygen out of room air, concentrates and stores the oxygen.

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## Home Oxygen Therapy *(continued)*



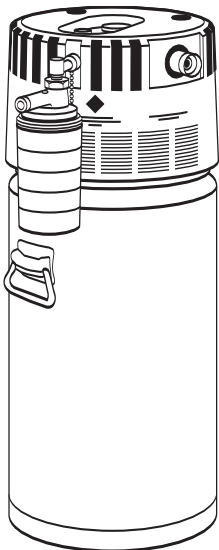
*A typical oxygen cylinder*

The concentrator has several advantages because it does not have to be resupplied and it is less costly to provide than liquid oxygen. Apria Healthcare will provide extra oxygen tubing to permit you to move around your home with minimal difficulty.

**Oxygen Cylinder Equipment** — Oxygen is stored in a cylinder under pressure, which is equipped with a regulator to control the oxygen flow rate. Oxygen can be supplied in a small oxygen cylinder that can be carried with you to travel away from your home.

**Liquid Oxygen** — Liquid oxygen is stored as a very cold liquid in a vessel and, when released, is converted to a gas. You breathe the oxygen gas in just as you would with an oxygen concentrator or compressed cylinder. Liquid oxygen vessels require ongoing home deliveries to patients' homes.

Apria Healthcare will provide you with instructions on the proper care and maintenance of your particular home oxygen therapy equipment.



*A typical liquid oxygen vessel*

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# Exercising

Exercises are very important. Types of exercises include breathing, relaxation and physical exertion. Please consult your physician before engaging in any type of physical activity or exercise.

## Breathing Exercises

Your narrowed airways and damaged air sacs make it more difficult to exhale. Air becomes trapped in your lungs. A breathing technique called pursed-lip breathing is used to allow you to reduce the amount of air that is trapped in your lungs so that more fresh air can be breathed in.



*Purse your lips and slowly breathe out*

## Pursed-Lip Breathing

**Step 1.** Inhale slowly through your nose.

**Step 2.** Purse your lips by pretending that you have a drinking straw between your lips.

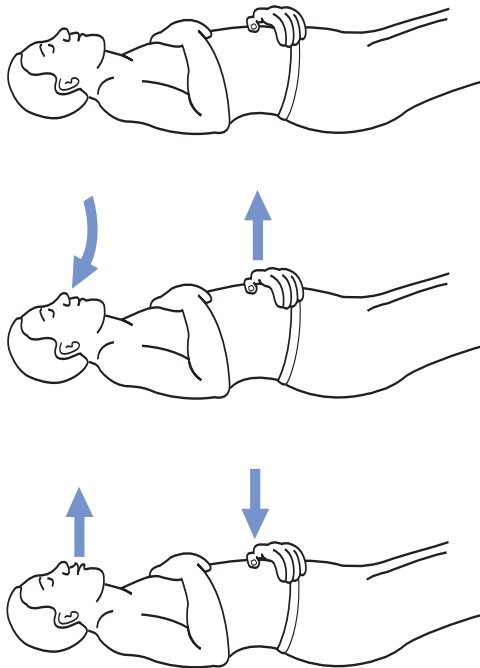
**Step 3.** Breathe out slowly and evenly through pursed lips.

**Step 4.** Try to take twice as long to breathe out as you did to breathe in.

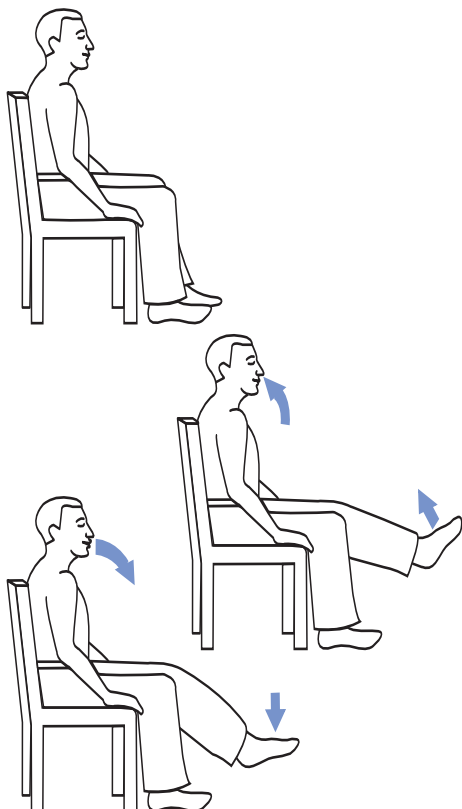
**Step 5.** Practice pursed-lip breathing several times a day.

Perform difficult activities while exhaling through pursed lips for example, take steps up stairs while exhaling through pursed lips and stop to inhale.

Use pursed-lip breathing whenever you do activities which make you breathless.



*Diaphragmatic breathing*



*Leg exercises*

## Diaphragmatic Breathing

Another helpful exercise is diaphragmatic breathing. This exercise is used to strengthen the diaphragm which will bring more fresh air into the lungs.

**Step 1.** Sit in a straight back chair or if your physician agrees, lie on your back on a flat, firm surface and place a pillow under your knees.

**Step 2.** Place one hand below your ribs and the other on your chest.

**Step 3.** Inhale slowly through your nose for a count of two. As you inhale, your hand below your ribs should move out, while the hand on your chest remains as still as possible.

**Step 4.** Exhale slowly through pursued lips for a count of 4. Your hand below your ribs should move in.

**Step 5.** During the exercise, keep your upper chest as quiet as possible and your neck muscles relaxed.

**Step 6.** Do this exercise for three to five minutes twice a day.

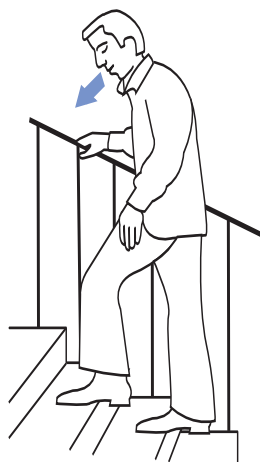
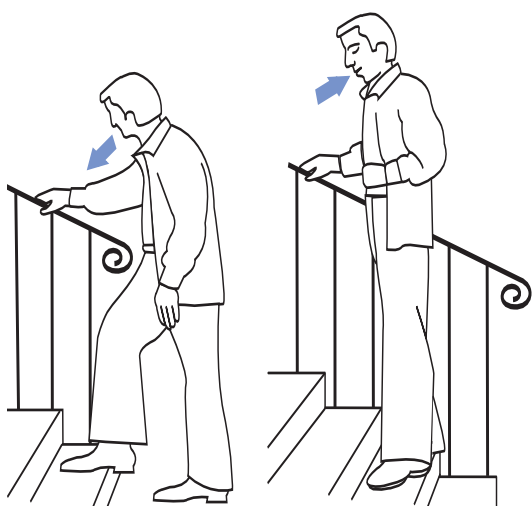
## Leg Exercises

**Step 1.** Sit in a straight back chair.

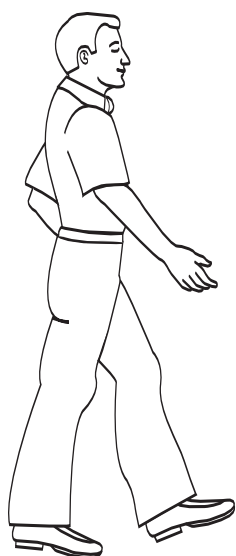
**Step 2.** Slowly raise one leg as you breathe in through your nose.

**Step 3.** Lower the leg slowly as you breathe out through pursued lips.

**Step 4.** Repeat this procedure with the other leg.



*Climbing stairs*



*Walking exercises*

## Climbing Stairs

Be sure to:

- Walk flat-footed
- Hold on to a railing
- Pace yourself

**Step 1.** Exhale and take a step.

**Step 2.** Inhale and rest.

**Step 3.** Exhale and take the next step using the other foot.

## Walking Exercises

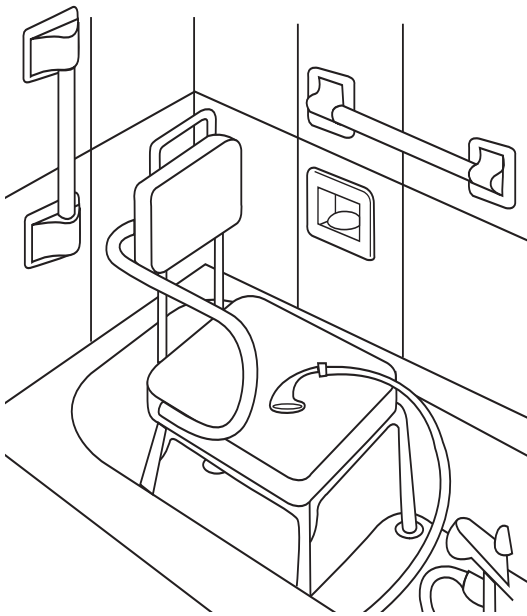
Start by taking a short daily walk. Each day try to walk a little farther. When walking, allow your arms to hang loosely at your side. Keep your chest and shoulders relaxed. Be conscious of your diaphragm and use it to exhale, breathing out through pursed lips. As you walk, use the following rhythm of walking/breathing: a) every two steps, breathe in; b) every four steps, breathe out. Walk at an even speed and pace yourself. Do not hurry.

To save energy, be conscious of your breathing during exercises and activities. Exhale slowly as you lift, push or pull.

## Daily Activities

Here are some suggestions that will help with your activity plans:

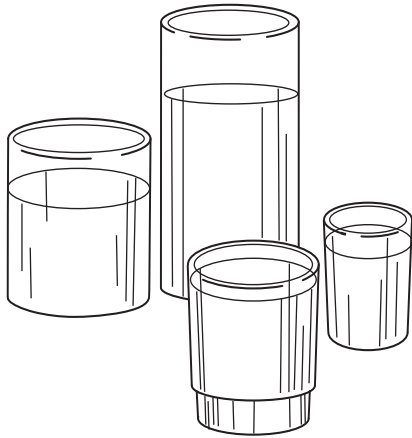
- Wait an hour or so after eating. When you eat, your blood is directed to your stomach to aid in digestion and carry out nutrients. Therefore, there is less blood supply to your muscles leaving them less able to cope with higher demands.
- Plan activities shortly after taking your breathing medications when they are working their strongest.
- Pace yourself, take your time and don't rush!
- Sit to do activities such as cooking or shaving.
- Use pursed lip breathing during activities that require more activity than usual exertion.
- Bath assist devices (such as a shower chair, pictured here) can be used while bathing or showering to prevent falling or slipping in the tub.



*Assistive devices to bathe safely*

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# Keeping Your Airways Clear



*Drink 6–8 glasses every day*

Mucus tends to accumulate in your airways and can be difficult to clear. There are several things you can do to aid in keeping your airways clear.

First, to assist in keeping your secretions thin and easy to cough up, drink six to eight glasses of liquid per day unless otherwise directed by your physician.

Second, when you need to raise secretions, control your cough so that the cough is effective.

## **Control Cough**

**Step 1.** Breathe in deeply.

**Step 2.** Hold your breath for a few seconds.

**Step 3.** Cough forcefully twice in a row. The first cough loosens the secretions and the second helps to bring up the mucus.

## **Breathing Out Hard (Huffing)**

**Step 1.** Breathe in deeply from your diaphragm.

**Step 2.** Breathe out hard through your nose and open mouth, as if you were making mist on a window.

Repeat once or twice.

---

## Diet and Lifestyle Changes

### Diet

Eating nutritious meals is important. Sometimes because of breathlessness you may avoid eating. To minimize becoming breathless during eating, take small bites, chew slowly, breathe evenly and stop to relax as needed. It may be helpful to eat six small meals per day rather than three large ones. In addition, eat foods high in protein to increase energy. Avoid gas forming foods such as broccoli, cabbage, beans, melons and carbonated beverages; these tend to bloat your abdomen.

### Lifestyle Changes

When you have COPD, there are several things that you should do to change your lifestyle.



*Do not smoke or permit smoking near you*

### Smoking

Do not smoke. Ask people around you not to smoke in your presence. Smoke is a very irritating substance and can cause increased difficulty in breathing.

### **STOP SMOKING**

If you have chronic bronchitis, emphysema, or chronic asthma, smoking cigarettes will make your condition worse. That is because smoke causes the airways to become inflamed. If you smoke, quitting is the most important step you can take to help you breathe better and control your disease.

### **WHY QUIT?**

Smoking is the number-one cause of chronic bronchitis and emphysema. Your condition will get worse faster if you smoke as few as two cigarettes a day. Cigarette smoke causes the airways to constrict and the lining of the bronchial tubes to produce excess mucus. Toxic gases in tobacco smoke can also prevent your blood from carrying enough oxygen to your body. Quitting is the best thing you can do to control your lung disease.

### **HOW TO QUIT**

Smoking is a difficult habit to break. But with support and the right attitude, you can do it. You'll have the best chance of success if you join a stop-smoking group and have the support of family and friends. A nicotine patch may also help. Ask your healthcare team about stop smoking aids and clinics, or contact the American Cancer Society or American Lung Association. Set a date to stop. Then tell your family and friends that you're quitting, and let them know how they can help.

### **Air Pollution**

Avoid dirt, dust and fumes such as cleaners, paints and aerosol sprays. These substances can make breathing more difficult. If you live in an area that has air pollution, stay indoors when the air pollution level is high. Check ozone levels and stay indoors when levels are high.

## **Colds and Influenza**

Be sure to wash your hands thoroughly and frequently to avoid infections. Avoid contact with people who have colds and influenza. Attempt to avoid large crowds during the cold and influenza season. In the fall, discuss with your physician the possibility of receiving an influenza and pneumonia vaccination.

## **Weather**

Avoid extremes in temperatures. Changes in weather may cause increased shortness of breath. If you live in a cold climate, when you go outside, wear something over your nose and mouth to warm the air as you breathe in.

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## When Is It Necessary to Call the Physician?

It is important for you to call your physician when the first signs of infection or other respiratory problems occur. The sooner you call the physician the more likely you will avoid complications or hospitalization.

### **Call your physician when you experience any of these symptoms:**

- Increased shortness of breath, difficulty breathing or wheezing.
- Coughing becomes more frequent or it becomes difficult to cough.
- An increase or decrease in mucous production.
- The mucous coughed up is a different color (yellow, rust colored, green or bloody) or becomes thicker.
- Swelling in ankles, legs or around eyes.
- Sudden weight gain (three to five pounds overnight).
- Heart palpitations or faster pulse than usual.
- Unusual dizziness, sleepiness, headaches, vision problems including difficulty focusing, seeing double, irritability or trouble thinking clearly.
- Increase/loss of appetite.
- Dehydration (not getting enough fluids): urine becomes concentrated and skin is usually dry.
- Fever.
- Early morning headaches not relieved by mild headache medicines (such as aspirin, Tylenol, etc.).

# Home Safety Instructions

Area	Check for Safety
Access	<ul style="list-style-type: none"><li>• Accessible entrance and exit.</li><li>• Locks secure and operable in case of emergency.</li></ul>
Mobility	<ul style="list-style-type: none"><li>• Walkways clear of cords, throw rugs, loose carpet, clutter.</li><li>• Doorways and hallways wide enough to accommodate the equipment.</li></ul>
Bathroom	<ul style="list-style-type: none"><li>• Non-slip surface.</li><li>• Grab bars and/or tub rails.</li><li>• Do not use electrical equipment in the tub or shower.</li></ul>
General	<ul style="list-style-type: none"><li>• Keep medications, supplies, and needle containers away from children and pets.</li><li>• Dispose of waste properly.</li></ul>
Fire Safety	<ul style="list-style-type: none"><li>• Smoke detector/fire extinguishers are recommended for each floor of the home.</li><li>• Be careful with space heaters.</li><li>• Have a practice fire drill if possible.</li><li>• It is recommended that the fire department be notified when a disabled person is in the home.</li></ul>

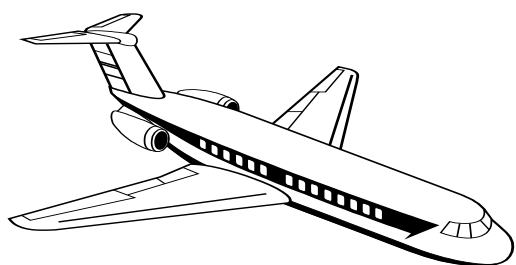
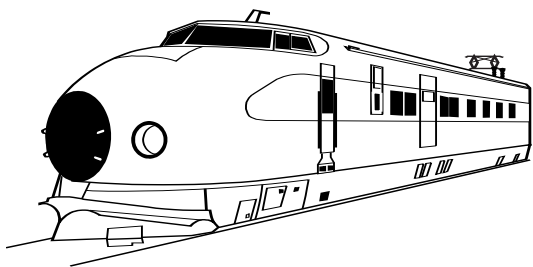
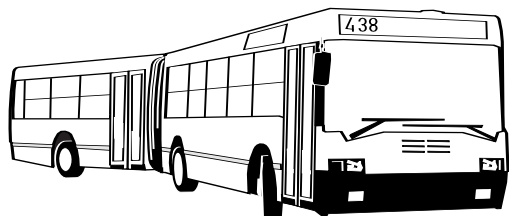
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## Home Safety Instructions *(continued)*

Area	Check for Safety
Utilities	<ul style="list-style-type: none"><li>• When required, Apria Healthcare equipment should be set up at a grounded outlet.</li><li>• Most Apria Healthcare units use “2-prong” power plugs and do not require a 3-prong, grounded AC power outlet. However, if the equipment that has been provided to you has a 3-prong power plug and your home does not have 3-prong power outlets, please notify your Apria branch immediately.</li><li>• Don’t use frayed or cracked cords or multi-plug adapters.</li><li>• Don’t overload circuits.</li><li>• Don’t immerse equipment.</li><li>• Keep items with chargers plugged in whenever possible.</li></ul>

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## Traveling with Oxygen



Because you may have a lung problem, it does not mean you must be confined to your home. You may travel, but some planning is required in advance. The type of arrangements you make will vary depending upon how you desire to travel and your oxygen needs. Here are some specific things you must consider:

1. Discuss your travel plans with your physician and obtain his permission.
2. Obtain a copy of your oxygen prescription from your physician. Photocopy it and carry several copies with you.
3. If traveling by public transport, ask your physician for a letter approving your travel.
4. Contact Apria Healthcare at least eight weeks in advance and tell them your destination and method of travel. Apria will assist in arranging oxygen for your travel.
5. If the area you plan to visit is at a higher elevation, consult with your physician beforehand, as your oxygen flow rate may need to be changed.
6. To answer questions about traveling with oxygen, ask your Apria Healthcare representative for the **Apria Great Escapes** Travel Program Guide.

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# COPD Resource Guide

“Breathe Easy Magazine” — published twice yearly by the American Lung Association and is free of charge. To request, call 1 (800) 273-8985.

## Web Sites

**[www.apria.com](http://www.apria.com)**

**[www.necacommunity.org](http://www.necacommunity.org)** — National Emphysema/ COPD Association

**[www.nlhep.org](http://www.nlhep.org)** — Lung Health Education Program (NLHEP)

**[www.lungusa.org](http://www.lungusa.org)** — American Lung Association

**[www.copdcenter.org](http://www.copdcenter.org)** — COPD Center of the American Lung Association

**[www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)** — National Heart Lung and Blood Institute

This is a brief list of web sites and resources. You can find more at **[www.Apria.com](http://www.Apria.com)**.

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## Feedback on Our Services

Apria Healthcare is among America's most experienced and respected home respiratory care providers, and our patient satisfaction scores are consistently high. It is possible however that you may have a concern and we welcome feedback. To voice a concern, you should take these steps:

1. Call your local Apria branch and ask to speak to the branch manager.  
OR
2. Contact us by e-mail at:  
Patient\_Satisfaction@Apria.com  
OR
3. Visit our Website at [www.Apria.com](http://www.Apria.com)

### **Satisfaction Survey Process**

Our goal is to ensure your satisfaction. You will likely receive an Apria patient satisfaction questionnaire and we hope that you will take a few minutes to fill it out and return it to us. The postage is prepaid by Apria Healthcare.





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[www.Apria.com](http://www.Apria.com)



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