

Living Well With COPD

Chronic Bronchitis and Emphysema

YOUR PATIENT WORKBOOK



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As the global leader in providing education in cardiopulmonary, critical care, and sleep medicine, the ACCP will promote diversity to optimize health, advance patient care, and support research while fostering health equity.

The ACCP mission is to promote the prevention, diagnosis, and treatment of chest diseases through education, communication, and research.



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Additional copies of this Patient Education Guide, Product Code 5032, may be purchased from the American College of Chest Physicians.

This update provided by
The COPD Alliance



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What Is COPD?

- COPD stands for **Chronic Obstructive Pulmonary Disease**

Health-care providers use the term COPD to describe a slowly progressive disease involving the airways in the lungs or the lung tissue, or both. What this means is this it is a long-term disease, which does not completely go away and can get worse as time goes on.

- The two diseases that make up COPD are called **emphysema** and **chronic bronchitis**. Many people with COPD have a combination of these two diseases. In addition, some people with COPD may also have asthma-like symptoms or **reactive airway disease**. People with COPD may have worsening attacks from time to time, called acute **COPD flare-ups (exacerbations)**.

COPD is a common lung disease. It affects more than 5% of the adult population and is the third leading cause of death in the United States, with 12 million Americans diagnosed and 12 million more undiagnosed, and the number is growing.



Long-term cigarette smoking causes nearly all cases of COPD, and it takes many years for COPD to develop before people need medical help.

- Most people begin to feel the disease symptoms between 50 and 70 years of age.

Who Gets COPD?

Between 1998 and 2009, many more women than men had COPD. For 2007 to 2009, 6.1% of women (7.4 million) had COPD compared with 4.1% of men (4.4 million)

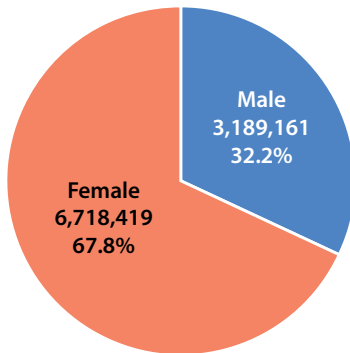
COPD rates are highest among women aged 65 to 74 (10.4%) and 75 to 84 (9.7%) and among men aged 75 to 84 (11.2%).

COPD rates are highest among non-Hispanic white and Puerto Rican adults and among adults with family income below the poverty level.

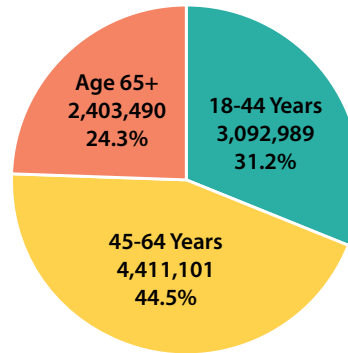


Chronic Bronchitis – Percentage by Sex, Age, Ethnic Group, and Geographic Region, 2009

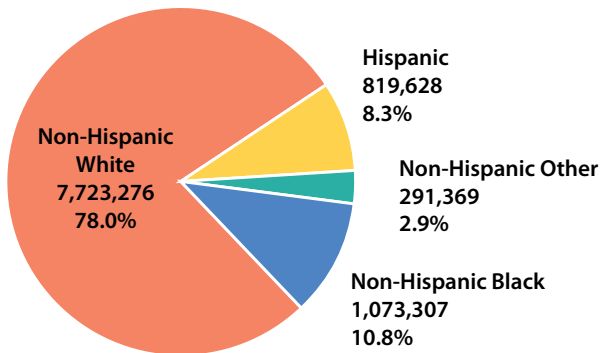
SEX



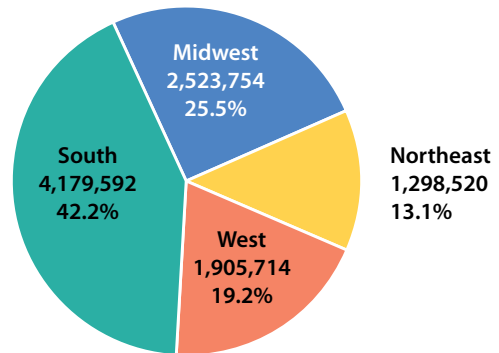
AGE



ETHNICITY



GEOGRAPHIC REGION

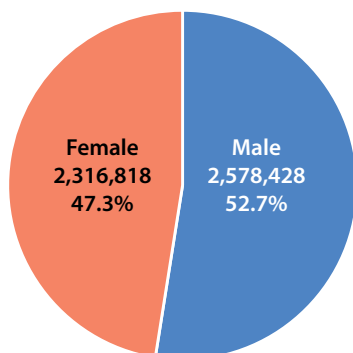


CHRONIC BRONCHITIS 9,907,580 CONDITIONS

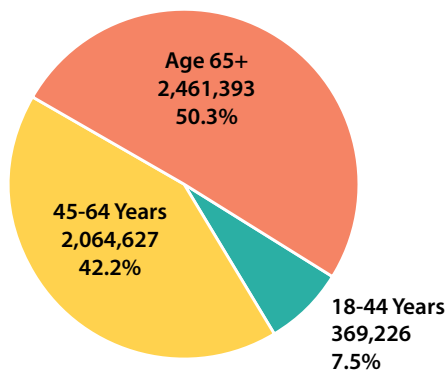
Source: National Center for Health Statistics, National Health Interview Survey, 2009

Emphysema – Percentage by Sex, Age, Ethnic Group, and Geographic Region, 2009

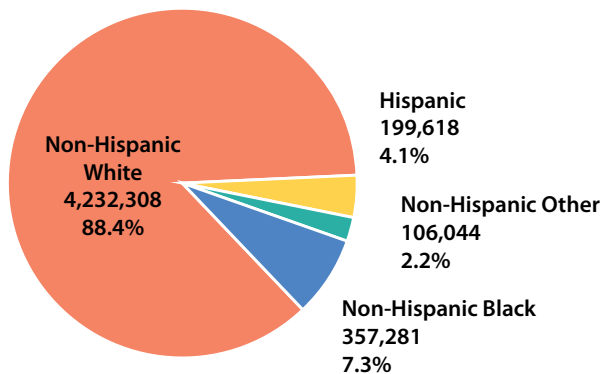
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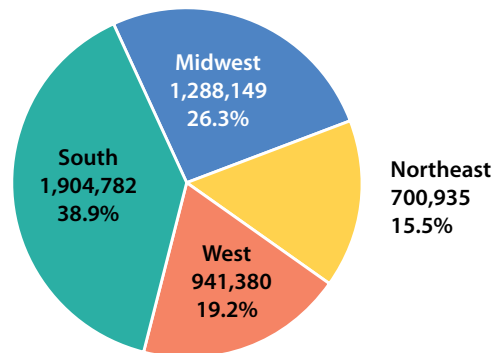
AGE



ETHNICITY



GEOGRAPHIC REGION



EMPHYSEMA 4,895,246 CONDITIONS

Source: National Center for Health Statistics, National Health Interview Survey, 2009

Living Well With COPD

COPD is a serious illness that can greatly affect your entire way of life, but, it doesn't have to mean the end of enjoying your life. Together with your health care provider, you can learn ways to improve your breathing and fitness and prevent quick and serious worsening of your disease. It takes a commitment to improve your health, and it takes effort to use your medicines and therapies correctly. You might see the expression "people suffering with COPD." Instead, we like to say, "people living well with COPD," and this can be YOU.

You can live well with COPD. It's up to YOU to take control.

Inside Your Lungs

Healthy Lungs – Breathing in and out.

We have two lungs, a right one and a left one. They are located in the chest, and are protected by ribs. In a healthy lung, air flows freely into the nose, mouth, **windpipe (trachea)**, through the **airways (bronchial tubes)**, and to the **air sacs (alveoli)** located deep within the lungs.

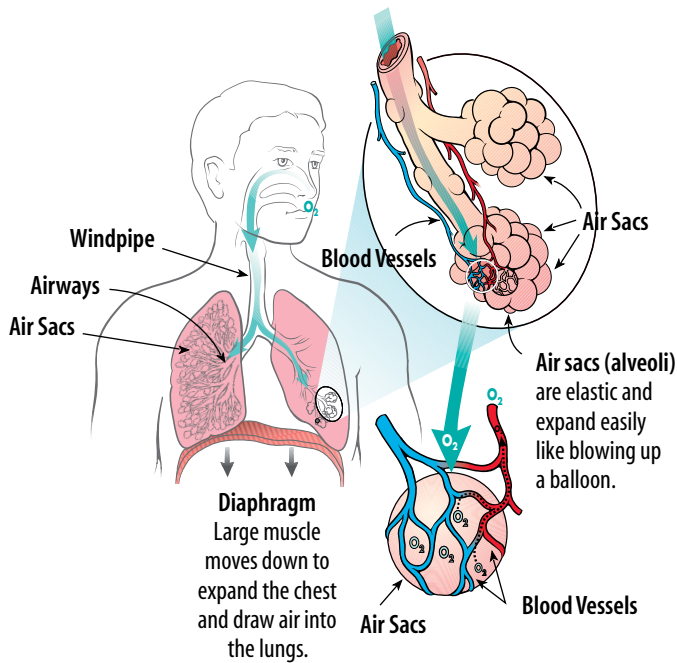
Oxygen (O₂) from the air passes through the **air sacs** and into the blood vessels. The blood then carries the **oxygen** to all parts of the body. At the same time, **carbon dioxide (CO₂)** passes out of the blood vessels into the **air sacs** and is blown out of the lungs when you exhale.

How Do Your Lungs Work?

Inhale

Healthy Lungs – Breathing in

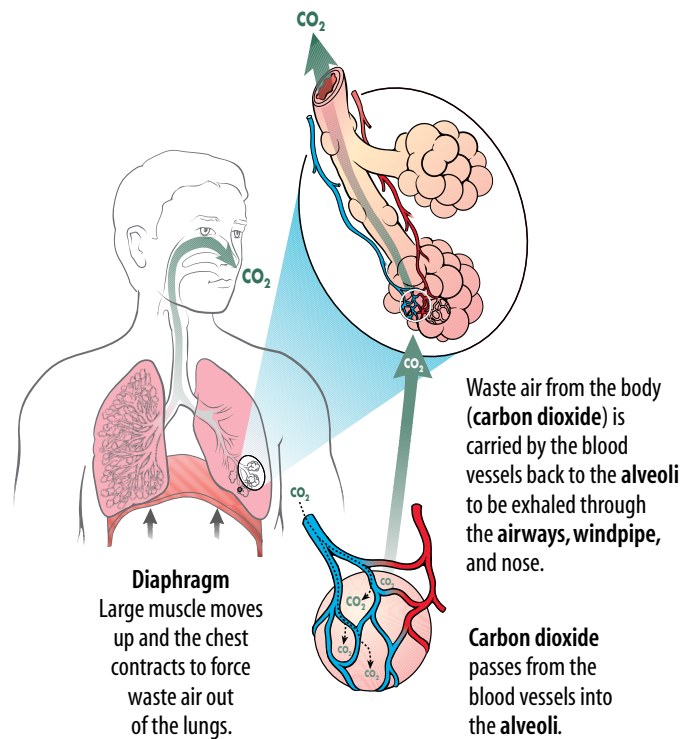
In a healthy lung, air flows freely into the windpipe (trachea), through the airways (bronchial tubes), and to the air sacs (alveoli) located deep within the lungs.



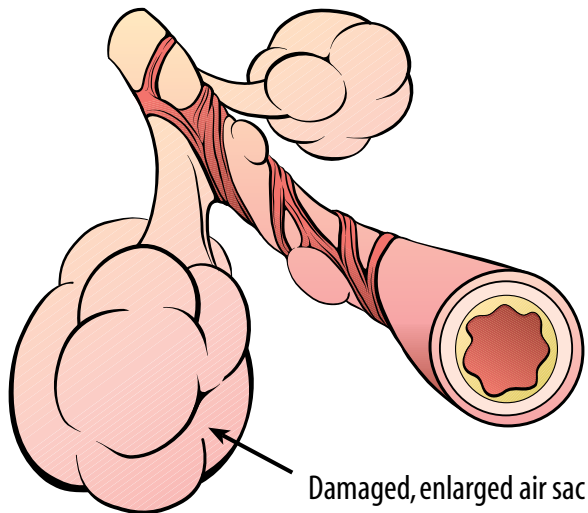
Oxygen from the air passes through the air sacs and into the blood vessels. The blood then carries the oxygen to all parts of the body.

Exhale

Healthy Lungs – Breathing out



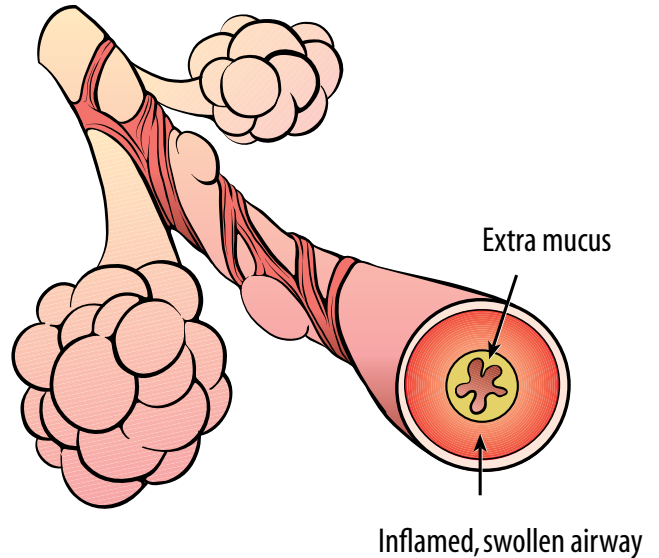
Lungs With Emphysema



Emphysema

With emphysema, the **air sacs (alveoli)** and **small airways (bronchioles)** are damaged and lose their elasticity (if you think of the **air sacs** as little balloons, they are worn out and never able to return to their normal size). When you breathe out, stale air becomes trapped inside the **air sacs**. This makes it harder for fresh air (**oxygen**) to come in and **carbon dioxide** to go out. The blood vessels around the **air sacs** are also damaged, which prevents fresh air (**oxygen**) from reaching the bloodstream and **carbon dioxide** from going out of the body.

Lungs With Chronic Bronchitis



Chronic Bronchitis

With chronic bronchitis, the **airways (bronchial tubes)** become swollen and inflamed and produce large amounts of **mucus**. The swollen tissues and **mucus** can make breathing difficult, because the inside of the tubes become narrow or closed in. The **airways (bronchial tubes)** often become easily infected, because it is difficult to cough out the excess **mucus**.

Lungs With Emphysema

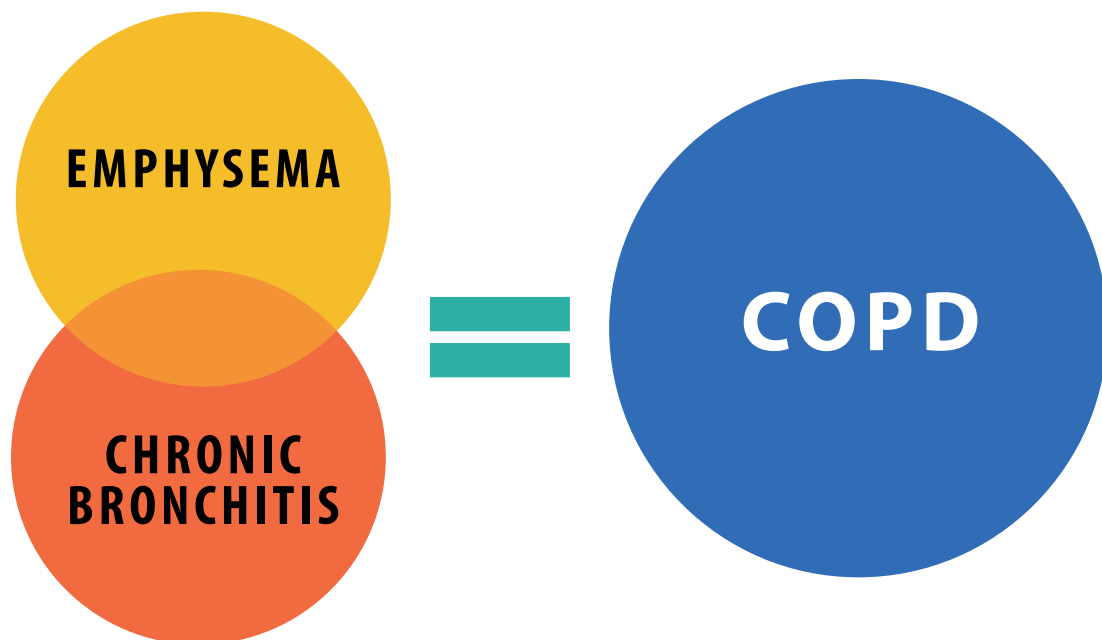
Emphysema

- With emphysema, the **air sacs (alveoli)** and **small airways (bronchioles)** are damaged and lose their elasticity.
- When you breathe out, stale air becomes trapped inside the **air sacs**.
- This makes it harder for fresh air (containing **oxygen**) to come in and **carbon dioxide** to go out.
- The blood vessels around the **air sacs** are also damaged, which prevents fresh air with **oxygen** from reaching the bloodstream and **carbon dioxide** from going out of the body.

Lungs With Chronic Bronchitis

Chronic Bronchitis

- With chronic bronchitis, the **airways (bronchial tubes)** become swollen and inflamed and produce large amounts of **mucus**.
- The swollen tissues and **mucus** can make breathing difficult, because the inside of the tubes become narrow or closed in.
- The **airways (bronchial tubes)** often become easily infected, because it is difficult to cough out the excess **mucus**.



- COPD is made up of two diseases: **emphysema** and **chronic bronchitis**.
- **Emphysema** is caused by damage to the **air sac** walls.
- **Chronic bronchitis** is caused by swelling, inflammation, and scarring in the **bronchial tubes**.
- The two diseases often overlap, which means that many people with COPD have both.

Causes of Chronic Obstructive Pulmonary Disease (COPD)

The most common cause of chronic obstructive pulmonary disease (COPD) is cigarette smoking, although only about 20% of smokers develop lung disease.

Other elements that may lead to the development of COPD are:

- Work-related dusts and chemicals (vapors, irritants, and fumes) and things in the environment, such as coal dust or silica
- Indoor air pollution from fuels used for cooking and heating in poorly ventilated homes
- Secondhand smoke may add to breathing problems and COPD.
- Some patients who develop COPD have a rare inherited disorder called **alpha1-antitrypsin deficiency**; this condition can be diagnosed by a blood test.
- Childhood respiratory infections (colds and viruses) may be linked to less lung function and more breathing problems in adulthood.

Test Your Knowledge

Here are some questions to help you understand COPD. If you do not know the answer, look back in this section to find out. It may be helpful to show this test to family and friends to help them understand your condition better.

What does COPD stand for?

When you inhale, what do you breathe into your lungs?

When you exhale, what do you breath out from your lungs?

What are the two diseases that make up COPD?

What causes most cases of COPD?

How did you do on this test? Check your answers in the previous section.

Notes

How many people do you know who smoke?

Write down their ages and how long they have been smoking.

Symptoms of COPD

- Shortness of breath with activity
- Frequent cough
- Cough with **mucus (phlegm)**
- Inability to maintain activity levels due to fatigue or shortness of breath
- More frequent colds and nose and throat infections
- Knowingly or unknowingly limiting your activities because you get out of breath or tired more easily

Although there is no cure for COPD, symptoms can be controlled to improve the quality of life.

The lung and airway damage cannot be repaired, but ALL of the symptoms of COPD can be reduced if you take action.

Your quality of life can be improved, and the length of your life can be extended.



You can live well with COPD. It's up to YOU to take control.

COPD and Heart Disease

In COPD, **oxygen** levels in the blood may fall, and **carbon dioxide** levels may rise, which can cause tiredness, poor concentration, and heart strain. The strained heart may enlarge and lead to swelling of the ankles and legs, called edema. People with COPD are also at risk for heart disease. COPD and heart disease often go together, because long-term cigarette smoking is one of the biggest risks for both diseases.

Making the Diagnosis

The first step to find out if you have COPD is scheduling an appointment with your health-care provider and getting a good examination, including a detailed medical and work history and physical examination. The health-care provider may do a number of tests to evaluate your breathing.

These may include:

- Breathing tests (also called **pulmonary function tests** or **spirometry**)
- Chest x-ray
- **Oxygen** level measurements
- Blood tests
- **Mucus (phlegm)** culture
- Exercise tests

What does “health-care provider” mean?

These days, there are many different kinds of health-care providers.

*A health-care provider could be a physician, (a Doctor of Medicine or MD, a Doctor of Osteopathy or DO), Nurse Practitioner (NP), or Physician Assistant (PA). Specialized physicians who take care of lung problems are called **pulmonologists**. Depending on where you live and what kind of insurance you have, all of these medical professionals can take care of people with COPD.*

More Test Questions

True or false: COPD can be cured.

What tests can you expect from your health-care provider to diagnose COPD?

Can symptoms of COPD be controlled with medication?

True or false: People with COPD have less heart disease.

What is the kind of medical doctor who specializes in lung problems?

How did you do on this test? Check your answers in the previous section.

What can YOU do about your COPD?

There are many things that people with COPD can do to feel better and lead productive and happy lives. The key is: **IT'S UP TO YOU**. You are in the driver's seat and must stay in control. Here are some general ideas to make it happen:

- Find a health-care provider who you can talk easily with. This will be an important relationship for you, since we know that COPD is a progressive disease (it does not go away).
- Your chosen health-care provider will prescribe medications, perhaps oxygen if you need it, and help you if you become sicker. This is now a **PARTNERSHIP**, and you are one half of it!
- Make an **action plan** with the help of your health-care provider. This will help you stay on the path to wellness by setting real goals.
- Get support from family and friends. They can help you achieve your goals.

Now here are some real and practical ways that you can improve and live well with COPD:

- Quit smoking
- Get flu and pneumonia shots
- Understand your COPD medicines
- Exercise and get good nutrition
- Conserve your energy
- Reduce stress
- Control your breathing
- Use oxygen therapy if your health-care provider thinks it is necessary
- Manage acute **COPD flare-ups (exacerbations)** - worsening episodes caused by infections



ACTION PLAN

A series of steps and goals that you will plan with your health-care provider to help you succeed in living well with COPD.

Quit Smoking

If you have not quit, do it now. It is the best move you can make to improve your life with COPD.

According to experts, these methods can help:

- **Nicotine Replacement**
 - nicotine patch
 - nicotine gum
 - lozenge
 - inhalers
 - nasal spray



These products can help lessen the urge to smoke. Check with your health-care provider first to make sure the one you choose will not interfere with other medicines and to select the correct dosage. Be especially careful if you have heart or blood vessel problems. Ask your health-care provider about prescription medications that can also help.

- **There are oral medications that can help you control the urge to smoke.**
 - Wellbutrin (brand name), bupropion (generic)
 - Zyban (brand name), bupropion (generic)
 - Chantix (varenicline) – (no generic available)

Speak with your health-care provider to see if these medications would be right for you. While these medications have proven to be very helpful in helping patients stop smoking, they do come with side effects that need to be understood when making the decision to use them. Ask your health-care provider and/or pharmacist to discuss the risks.

Get support and encouragement.

- **Learn how to handle and limit stress and urges to smoke**

Check your local hospitals and health clinics, libraries, civic groups, and community centers to see if they offer smoking cessation counseling programs.

For more information on how to quit, go to www.onebreath.org.

Remember, your best chance of success is with the help of others.

Avoiding Getting Sick With Flu (Influenza) and Pneumonia

Many people with COPD become very ill every year during flu season. The flu can greatly increase your chances of coming down with pneumonia.

- Avoid germs! Stay away from people with colds and flu. The droplets in coughs and sneezes are full of germs. These germs end up on handrails, doorknobs, shopping carts, and all the kinds of things other people touch.
- Wash your hands often to prevent the spread of germs. Carry alcohol-based hand sanitizer gel with you if you cannot get to soap and water. These are available in many kinds of stores, even in small containers that fit into a purse or a pocket.
- Always ask your health-care provider about getting a flu shot every year at the end of September or in early October, because flu types change every year. **Just because you had a flu shot last year does not mean you are protected this year.**
- Flu and pneumonia shots are not the same, but they are both very important for people who have COPD.
- If you are unable to get the flu shot (for example, people who are allergic to eggs cannot have a flu shot), make sure you get treatment as early as possible (there are special medicines available that are active against the flu virus).



Discuss with your health-care provider whether a pneumonia vaccine is wise for you; generally, the vaccine is given every 5 to 7 years and is active against a common type of pneumonia.

Other Irritants and Allergens

- Avoid fumes, smoke, and strong odors.
- Stay inside and/or decrease strenuous activity when air pollution levels are high.
- Correct dampness problems in your home that promote mold growth.
- Cover your mouth and nose when going out in very cold or windy weather.
- If you have allergies in addition to COPD, try to stay away from pollens or other things that give you allergies.

Learn what things you are sensitive to, and take steps to avoid or control them.

Test Questions

True or false: Only a patch can help with stopping smoking.

What kinds of medications can you get to help you stop smoking?

True or false: If you are trying to stop smoking, it is best to “go it alone.”

What are the two important vaccines (shots) that people with COPD need to get?

True or false: You only need a flu shot one time because it lasts for many years.

True or false: Everyone can get a flu shot even if they have certain allergies.

True or false: If you do get the flu, there is no medication you can take.

How did you do on this test? Check your answers in the previous section.

COPD Medicines

Understanding your medicines and how to take them regularly and effectively is a very important step in living better with COPD.

Medications are taken as inhalers, **nebulizers**, and a variety of pills that can include medications that relax the muscles around the airways, or decrease swelling in the airways, or **antibiotics** to clear up infections. The flu and pneumonia vaccines are also important medications to get in the treatment of COPD.

Medications are generally put into two categories, maintenance and rescue medications.

Maintenance medications are taken regularly on a daily basis, whether or not you think you have symptoms, and work to control symptoms over the long run.

Rescue medications are added to your maintenance medication when you have increased COPD symptoms or **flare-ups**. Usually, when your **flare-up** is over, you will return to your “usual dose” of maintenance dose of medication.

Understand Your COPD Medicines

Tell your health-care provider about your problems, activities, family, and lifestyle; that will help determine the best plan.

Your health-care provider will ask about the medicines you take, including over-the-counter medicine and any complementary or herbal medicines.

The health-care provider will want to know how well the medicine works and any side effects you are having.

Be sure to tell the health-care provider about any medication allergies that you have. Remember to report any problems, no matter how minor.

Write down any concerns and questions before your health-care provider appointments, so you will not forget to ask them.

To best care for yourself while taking COPD medicine:

- Always carry a current list of medications with you. Include on that list all of the over-the-counter vitamins and supplements you may be using. Include your medication and food allergies on the list.
- If possible, obtain your medications from only one pharmacy; the pharmacist will know your full medication and allergy history and be able to advise both you and the health-care provider about medication or food interactions.
- ALL medications can have some side effects, but the benefits may outweigh the side effects. Some people may experience no side effects, and others may have many side effects. Make sure you ask your health-care provider or pharmacist about the specific side effects of the medicine you are taking.
- Always ask your health-care provider about new medicines that may be available for your lung disease.



Inhaled Medications

- Open airways by relaxing tight muscles around them, or by decreasing swelling in the airways.
- Available as metered-dose inhalers, dry powder inhaler, or as a liquid in **nebulizers**.
- Medications must be used correctly in order for them to be effective. If you are not comfortable with the device or unable to work it, discuss these issues with your health-care provider. Many medications are available in different forms, just ask.

It is important to take your medication as prescribed; it is the best way to protect your health and maintain your quality of life.

Organize your medication with a pill box, a chart, or around routine events like meals or brushing your teeth.

For instructions on how to use inhaled medication devices, go to www.chestnet.org/accp/patient-guides/patient-instructions-inhaled-devices-English-and-Spanish.

Brand Name	Generic	Type	Delivery System
Atrovent HFA	No	Short-Acting Anticholinergic	Metered-dose Inhaler
Atrovent (ipratropium)	Yes	Short-Acting Anticholinergic	Nebulized Medication
Combivent HFA (ipratropium and albuterol)	No	Combination Short-Acting Anticholinergic and Beta ₂ -agonists Bronchodilator	Nebulized Medication
DuoNeb (ipratropium and albuterol)	Yes	Combination Short-Acting Anticholinergic and Beta ₂ -agonists Bronchodilator	Nebulized Medication
Proventil (albuterol)	No	Short-Acting Beta ₂ -agonists Bronchodilator	Metered-dose Inhaler
ProAir (albuterol)	No	Short-Acting Beta ₂ -agonists Bronchodilator	Metered-dose Inhaler
Ventolin (albuterol)	No	Short-Acting Beta ₂ -agonists Bronchodilator	Metered Dose Inhaler

Brand Name	Generic	Type	Delivery System
Maxair (pirbuterol)	No	Short-Acting Beta ₂ -agonists Bronchodilator	Metered-dose Inhaler
Xopenex (levalbuterol)	No	Short-Acting Beta ₂ -agonists Bronchodilator	2 Formulations: Metered-dose Inhaler and Nebulized Medication
Brand Name	Generic	Type	Delivery System
Metaproterenol	Yes	Short-Acting Beta ₂ -agonists Bronchodilator	Nebulized Medication
Spiriva (tiotropium)	No	Long-Acting Anticholinergic	Inhaled Dry Powder
Foradil (formoterol)	No	Long-Acting Beta ₂ -agonists Bronchodilator	Inhaled Dry Powder
Serevent (salmeterol)	No	Long-Acting Beta ₂ -agonists Bronchodilator	Inhaled Dry Powder
Advair HFA and Diskus (fluticasone/salmeterol)	No	Combination Long-Acting Steroid and Beta ₂ -agonists Bronchodilator	2 Formulations: Metered-dose Inhaler or Inhaled Dry Powder
Symbicort (budesonide/formoterol)	No	Combination Long-Acting Steroid and Beta ₂ -agonists Bronchodilator	Metered-dose Inhaler
Brand Name	Generic	Type	Delivery System
Dulera (mometasone/formoterol)	No	Combination Long-Acting Steroid and Beta ₂ -agonists Bronchodilator	Metered-dose Inhaler
Brovana (arformoterol)	No	Long-Acting Beta ₂ -agonists Bronchodilator	Nebulized Medication
Perforomist (formoterol)	No	Long-Acting Beta ₂ -agonists Bronchodilator	Nebulized Medication
Pulmicort Respules (budesonide)	Yes	Long-Acting Steroid	Nebulized Medication and
Pulmicort Flexihaler	No	Long-Acting Steroid	Inhaled Dry Powder
Alvesco	No	Long-Acting Steroid	Metered-dose Inhaler
QVAR	No	Long-Acting Steroid	Metered-dose Inhaler
Asmanex Twisthaler	No	Long-Acting Steroid	Inhaled Dry Powder

Oral Medications

Oral Bronchodilators

- Open the airways by relaxing tight muscles around them.
- Taken as pills

Brand Name	Generic	Type	Delivery System
Daliresp (roflumilast)	No	PDE4 inhibitor	Pill

Other Examples:

- Uniphyll and Theo -24 (theophylline)

REMEMBER

Always take steroids exactly as your health-care provider directs, even when you feel better or do not believe they are helping you. Don't stop taking steroids on your own because your breathing can get worse.

Taking steroids can raise your blood sugar. If you are diabetic, you will need to monitor your blood glucose more closely and, perhaps, adjust your diabetes medication.

Expectorants

Expectorants (mucolytic medicines) are sometimes used to treat the increased or thicker **mucus** that can occur with COPD. These medicines may help keep **mucus** thin and more easily cleared from the **airways**. These are taken as pills or liquids. The expectorant most commonly used for COPD is guaifenesin.

Steroids

- Reduce inflammation and swelling of the **airways**
- **These are not the same as anabolic steroids, which are muscle-building steroids often misused by athletes and others.**

Antibiotics

See your health-care provider as soon as you think you have an infection, so he or she can determine if you need antibiotics.

Ideas for getting your medications

Check with your insurance plan to see what are the preferred drugs on the plan, and see if your health-care provider thinks your disease can be managed well with those drugs.

If your drug insurance plan has a 90-day mail away benefit, use it. You will save money.

Nebulized medications are sometimes less convenient to use but many times less expensive to use, so explore the option of using nebulized medication with your health-care provider. Contact your insurance company to determine the cost of the medication.

Contact drug manufacturers for patient assistance programs, if needed.

Ask your health-care provider for samples

Set aside money for COPD medicine, and renew and buy more to use before you run out.

Enroll in a research study. Becoming part of a research study or clinical trial may be a way to get medication and to get extra care. Ask your health care provider if he or she knows about any research studies in which it would be good for you to participate. Always ask your own health-care provider about the details of any clinical trial, since often new, untried medications are being tested.

How to Take COPD Medicines

Each medication comes with a package insert that shows how to correctly take your medication. Ask questions! Don't be shy if you don't understand. It is very important that these medications be taken correctly.

Over-the-Counter Medicines

You may have tried some of the short-acting inhalers available without a prescription at drug stores. These medicines may cost less than the bronchodilator inhalers your health-care provider prescribes, but they don't save you money in the long run. They are much less effective and must be used more often to get the benefit prescription medicines provide. They can also be dangerous. It's best not to use over-the-counter inhalers without the guidance of your physician.

Test Questions

True or false: If you cannot afford COPD medicine, there are no other ways to get them.

What is the difference between maintenance medication and rescue medication?

Can any medication cure COPD?

Why do people with COPD take steroids?

How did you do on this test? Check your answers in the previous section.

Exercise and Good Nutrition

COPD makes the lungs and heart work harder to carry oxygen to all parts of the body.

Because of this, you should control your weight to reduce heart and lung strain.

Pulmonary Rehabilitation

Pulmonary rehabilitation may help you reduce the impact of COPD by helping to control or reduce breathlessness and recondition the body so that you feel less shortness of breath.

Pulmonary rehabilitation offers:

- Structured and monitored exercise training
- Nutrition advice
- Techniques for reducing and controlling breathing problems
- Education about maintaining and improving function
- Help to quit smoking
- Information about your disease and ways to cope
- Emotional and psychological support



You can benefit tremendously from pulmonary rehabilitation. Discuss it with your health-care provider.

Good Nutrition

Maintaining good health is impossible without eating the right foods.

Some people with COPD have trouble keeping weight on, and it is easy to lose muscle mass when you lose weight.

Many people with COPD find it helpful to:

- Eat several smaller meals throughout the day instead of three large ones.
- Drink plenty of fluids to keep airway **mucus** thin and free-flowing.
- Slow down when you are eating.



Conserve Your Energy and Control Stress

Most people with COPD must learn to pace themselves to avoid getting worn out throughout the day. Conserve energy with these practical tips, and you'll get more accomplished without getting short of breath.

- Move slowly to conserve energy and avoid breathlessness.
- Use a cart with wheels to move dishes, tidy up, work in the garage, put away clean laundry, and so on.
- Sit to dress, undress, shave, put on makeup, and cook. Sit for as many tasks as possible.
- Arrange your house so that most things you use are at waist level or within easy reach.
- Take rests after meals when your body is working hard to digest food.
- Invest in a shower stool and hose sprayer for bathing.
- Use assistive (“helping”) devices, such as a long-handled reacher, for pulling on socks and shoes and for reaching things in high places.



Control stress

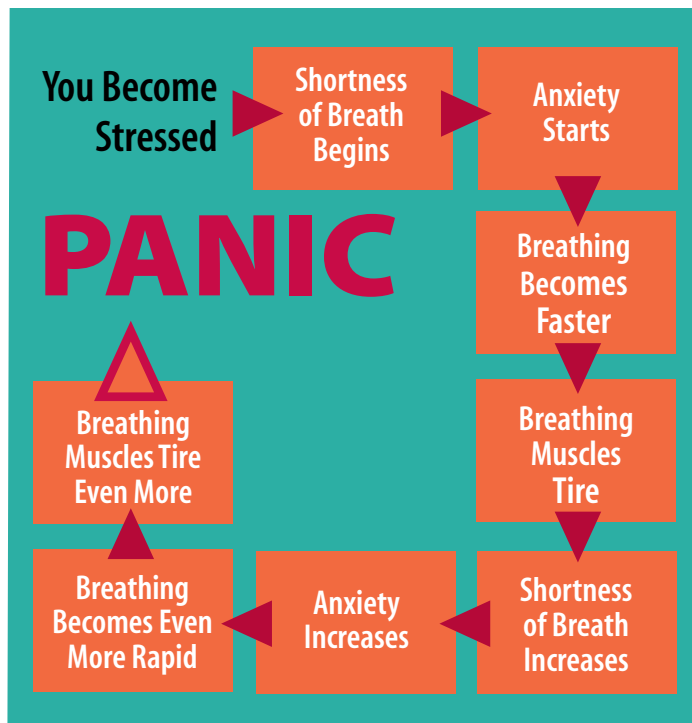
Feeling stressed can make breathlessness much worse.

Learn to relax

Stress is less likely to build to anxiety if you know how to relax yourself when you start to feel tense.

Find what works for you.

- Try yoga, prayer, meditating, or listening to relaxing music.
- Some people like to get comfortable, and concentrate on the things that relax them.
- Slowly tense and relax each part of your body. Start with your toes and work all the way up to your scalp. Breathe in as you tighten, and breathe out as you relax.



Control Your Breathing

Pursed-Lip Breathing

Pursed-lip breathing not only helps you relax, but it also helps you get more **oxygen** into your lungs and prevents shortness of breath. Practice this breathing technique until it works well for you.



STEP 1:

Relax your neck and shoulder muscles. Inhale (breathe in) slowly through your nose, and count to 2 in your head.



STEP 2:

Pucker your lips as if you are whistling. Exhale (breathe out) slowly and gently through your lips while you count to 4 or more in your head. Always exhale (breathe out) for longer than you inhale (breathe in). This allows your lungs to empty more effectively.

Diaphragmatic Breathing (Abdominal Breathing)

With COPD, trapped air in the damaged **air sacs** often causes the lungs to over expand.



STEP 1:

Get into a comfortable position. Relax your neck and shoulder muscles.



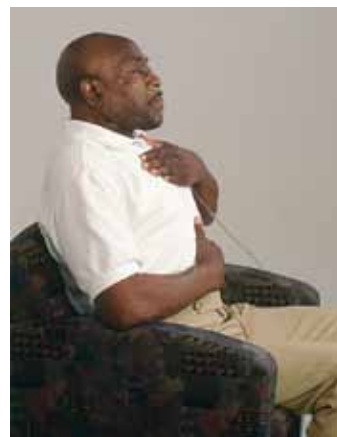
STEP 2:

Put one hand on your abdomen and one on your chest.



STEP 4:

Inhale (breathe in) slowly through your nose to the count of 2. Feel your abdominal muscles relax. Your chest should stay still.



STEP 5:

Tighten your abdominal muscles, and exhale (breathe out) while you count to 4. Feel your muscles tighten. Your chest should stay still.

Techniques to Help Clear Mucus From Your Lungs

Ask your health-care provider about different methods to help you cough up **mucus**. The Acapella™ and the Flutter® devices are two handheld devices that assist in clearing **mucus** from the lungs. Learning how to use these devices will make it easier to get rid of **mucus** in the lungs.

HUFF Cough: Forced Expiratory Technique

- Repeat this cycle two to four times.
- Spit out the **mucus** as it comes up.



STEP 1:
Sit comfortably in a chair. Take three to five slow, deep breaths using pursed-lip and diaphragmatic breathing.



STEP 2:
Take in a normal breath.



STEP 3:
Squeeze your chest and abdominal muscles – open your mouth – and force out your breath while whispering the word “huff” (sounds like a forced sigh). Some people find it helpful to press on the lower chest at the same time. Repeat once.



STEP 4:
Return to pursed-lip and diaphragmatic breathing.

Use of Oxygen

Eventually, many people with COPD will need supplemental **oxygen**.

It will improve your quality of life and may help you live longer.

Ask your health-care provider about how long you should use **oxygen** each day.

For many people, more **oxygen** use, not less, will add years to life.

Travel With Oxygen

Traveling with **oxygen** can be done with ease, but it takes planning to ensure enough **oxygen** for the trip and for use at your destination.

Air travel requires more planning and coordination with the airline. Talk with your health-care provider and **oxygen** supplier for advice about traveling.

You cannot travel on an airplane with an **oxygen** cannister. You must obtain a portable concentrator from your durable medical equipment supplier.



Air travel requires an FAA-certified portable concentrator and, frequently, a form signed by your health-care provider. Check with airline and oxygen company at least 2 weeks prior to travel.

Test Questions

What size meals should people with COPD eat?

Why is it important for people with COPD to eat good foods?

True or false: People with COPD should never exercise.

What are some different breathing types that might help you feel better?

What are some ideas that help people to reduce stress?

True or false: It is OK to just get on a flight with oxygen.

How did you do on this test? Check your answers in the previous section.

Acute COPD Flare-ups (Exacerbations)

An acute COPD **exacerbation** is a worsening, or ‘**flare-up**,’ of symptoms. It may lead to less lung function and a step down in quality of life. Most importantly, it can be dangerous, as it may put you at risk for death. Often a **flare-up (exacerbation)** will land a person in the hospital.

Causes of COPD Flare-ups (Exacerbations)

- Infections caused by viruses and bacteria
- Certain cancers
- Very hot or very cold weather
- Asthma attacks
- Air pollution
- Heart failure

Studies have found that smoking, lack of a pulmonary rehabilitation program, improper use of an inhaler, and not taking drugs properly are all related to having more COPD flare-ups (exacerbations).

What Can You Do?

You can prevent infections by doing your best to avoid germs for cold and flu. Catch symptoms early, if you are “tuned-in” to your symptoms so you can get a jump on controlling things and getting worse.

LOOK FOR SIGNS OF A COPD FLARE-UP (EXACERBATION)

- Changes in **mucus** color and amount
- More **mucus** or difficulty coughing mucus up from the lungs
- More severe cough or more frequent coughing
- Cold or flu symptoms, such as runny nose, sore throat, achy feeling, chills, fever, or feeling of feverishness
- Increased shortness of breath with activities or at rest
- Wheezing or whistling sound in the chest

CALL YOUR HEALTH CARE PROVIDER IF:

- You are more short of breath than usual.
- Your cough gets worse.
- You are coughing up more **mucus** or having trouble getting **mucus** up.
- Your **mucus** changes from clear or white to green or yellow.
- You are coughing up blood or **mucus** with blood in it.
- You have fever or chills or feel general achiness or fatigue.
- Your sleep is very disturbed or you are more sleepy than normal.
- You are feeling confused.

What Will Your Health Provider Do During a COPD Flare-up (Exacerbation)?

COPD **flare-ups (exacerbations)** are treated by changes in your medications, adding **steroids** and/or **antibiotics**, sometimes **oxygen**. A serious **flare-up (exacerbation)** may mean hospitalization and possibly **steroids** through an IV (intravenous line into your blood).

Some New Ways to Prevent COPD Flare-ups (Exacerbations)

Since COPD **flare-ups (exacerbations)** are a very serious problem for people with COPD, doctors and researchers have been looking for ways to prevent them. Some health-care providers believe that regular treatment with certain **antibiotics** will keep away COPD **flare-ups (exacerbations)**. Ask your health-care provider if this might be a good solution for you.

Know when to call 911. Discuss with your health-care provider what to do if you become so sick that you need immediate help. Talk about these symptoms with your health-care provider.

Test Questions

What are some signs that you might be having a flare-up (exacerbation)?

Name 3 things that can cause a flare-up.

What kinds of medications can help with a flare-up?

When should you call 911 for your COPD?

When should you call your health-care provider about your COPD flare-up?

How did you do on this test? Check your answers in the previous section.

Surgical Options for the Treatment of COPD

Lung Volume Reduction Surgery

Lung volume reduction surgery removes diseased portions of one or both lungs. When these portions of the lung are removed, the volume of the lungs inside the rib cage is reduced, making it easier for people to breathe. A thorough evaluation is done to see if you are a candidate for this surgery.

Are You a Candidate?

- You must also be strong enough to undergo the surgery.
- You must be on proper medical therapy.
- You must participate in a **pulmonary rehabilitation** program.
- You cannot be smoking.
- The decision for **lung volume reduction surgery** is based on results of testing done before and after **pulmonary rehabilitation** and your general health condition.

Lung Transplantation

Lung transplantation involves replacing one, or sometimes both, of your diseased lungs with a donor lung. To be considered a candidate, generally you must:

- Be **oxygen**-dependent.
- Have severe COPD that no longer responds to medical treatment and may be fatal in 2 years.
- Be physically able to undergo surgery and the treatment that follows.
- Be under the age of 65 and, at some centers, you must be under the age of 60.

Lung transplantation has many risks, and donor lungs are not easily available. Waiting for a donor lung can sometimes take 2 or more years. Also, after surgery, you will need to take many different medications for the rest of your life to prevent rejection of the transplanted lungs and to prevent infection.

With this surgery and lung volume reduction surgery, you must very carefully weigh all the issues involved. Make sure you discuss this with someone who is an expert in surgical options.



Glossary

Action plan

A partnership program made with your health-care provider to help you stay on track with your wellness. It will have steps to take and goals to accomplish.

Air sacs (alveoli)

Tiny balloon-like sacs, located deep within the lungs. From these sacs, oxygen and carbon dioxide are passed to the blood by tiny vessels (capillaries). Note: alveoli means “bunches of grapes” in Italian.

Airways (bronchial tubes)

From the windpipe into the lungs, through which air passes during breathing.

Alpha₁-antitrypsin

A kind of protein that most people are born with that helps to keep the elasticity of tissue in the lung. In some people, it is missing and leads to the development of emphysema.

Antibiotics

Medications that are effective against infections, usually this is bacteria, but some special antibiotics are made to fight viruses.

Anticholinergics

Medications that have an effect upon smooth muscle in the airways. When inhaled into the lung, anticholinergics decrease muscle spasms or tightening of the airways.

Antiinflammatories

A class of drugs, often corticosteroids, used to help reduce inflammation and swelling of the airways.

Beta₂-agonists

These medications can be short-term or long-term and work to open the airways by relaxing tight muscles around them.

Bronchioles

Small airways in the lung; they connect the bronchial tubes and the air sacs.

Bronchodilators

Medications that relieve the tightening of the airways and that are in pill form or inhaled form. They include anticholinergics and short-term and long-term beta₂-agonists.

Carbon dioxide (CO₂)

A waste product of body metabolism that is removed only by the lungs when breathed out. It gets transferred from the blood through the air sacs in the lung.

Chronic bronchitis

An inflammation, or constant swelling and irritation, of the airways that causes increased production of mucus. It is considered chronic (or long-term) when a person is coughing and producing excess mucus for most days of the month (at least 3 months of a year or 2 or more years in a row).

COPD (chronic obstructive pulmonary disease)

A term to describe two diseases, emphysema and chronic bronchitis with airflow obstruction. Patients may experience either or both of these conditions.

COPD Flare-up (exacerbation)

A flare-up or a bad attack that is usually caused by an infection in the lung, but it is not always known why there is a worsening of symptoms. Usually accompanied by more mucus, coughing, and breathlessness.

Corticosteroids (glucocorticoids, steroids)

Medications that work to decrease inflammation and swelling of the airways. They can be taken in pill form or inhaled. Corticosteroids are not to be confused with anabolic steroids used by athletes and others to build muscles.

Diaphragm

The large muscle underneath the lungs that moves down when breathing in to allow air with fresh oxygen to be pulled into the lungs and moves up to force “used air” with carbon dioxide out of the lungs when breathing out. It is the main breathing muscle in the body.

Emphysema

Part of COPD that involves the tiny air sacs in the lungs (alveoli). In emphysema, the lungs lose elasticity, which causes the air sacs to become enlarged, making breathing difficult. In advanced emphysema, there are large empty spaces in the lung.

Lung volume reduction surgery

An operation in which damaged parts of the lung are removed, allowing the healthy, remaining parts to work better and fill the space inside the rib cage.

Mucus (phlegm)

A slippery substance produced by certain membranes in the body. In normal, healthy people, mucus moistens and protects these mucous membranes. However, in COPD, too much mucus is produced in the lungs, resulting in clogging, blocking, and coughing, which make breathing more difficult.

Nebulizers (atomizer)

A machine that can produce an extremely fine spray for deep penetration of medicine into the lungs.

Oxygen (O₂)

A gas that provides the body with energy. When breathed in, it is pulled into the lungs, where it is transferred to the blood through the air sacs (alveoli). People who do not get enough oxygen into their systems may need oxygen therapy.

Pulmonary rehabilitation

A multidisciplinary program of exercise, education, and breathing retraining meant to help people with COPD stay conditioned, reduce symptoms of breathlessness, and improve lung function and attitude in order to improve quality of life.

Pulmonologist (pulmonary doctor)

A medical doctor who has special training about lungs.

Reactive airway disease

Often referred to as asthma, people with this disease have airways that are very sensitive to irritants, causing tightening of muscles and more mucus production. Some people with COPD also have reactive airway disease.

Spirometry (pulmonary function tests)

A way of measuring the amount of air entering and leaving the lungs. This is the one way doctors and other health-care providers can diagnose COPD.

Windpipe (trachea)

Air flows through this tube from the mouth and nose, down the throat, and into the lungs.

Other patient education guides available from the ACCP in print and on the ACCP website (www.chestnet.org) are:

Controlling Your Asthma (English and Spanish versions available)

Flexible Bronchoscopy

Cough: Understanding and Treating a Problem With Many Causes

Mechanical Ventilation Beyond the Intensive Care Unit

Pulmonary Rehabilitation: A Team Approach To Improving Quality of Life

Additional Resources:

www.copd.org

www.thoracic.org

www.yourlunghealth.org

www.goldcopd.com

www.copdresourcenetwork.org

www.nationaljewish.org

www.lungusa.org

www.smokefree.gov/talk.html

www.centerwatch.com

www.copdguidelines.ca

www.fpagc.com

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