

Save Your Breath, America!

Prevent COPD Now!

Information for Patients Who May Be Developing COPD
(Chronic Bronchitis or Emphysema)

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**National
Lung
Health
Education
Program**

**National Lung Health Education Program
www.NLHEP.org**



National Lung Health Education Program

What is your FEV₁?

FEV₁

Forced Expiratory Volume
in one second

What is your FEV₆?

FEV₆

Forced Expiratory Volume
in six seconds

What is your Ratio?

(FEV₁/FEV₆)



Introduction

The National Lung Health Education Program (NLHEP) healthcare initiative is designed to identify and to treat patients in the early stages of emphysema and related chronic bronchitis. Together, emphysema and chronic bronchitis are known as Chronic Obstructive Pulmonary Disease (COPD). Approximately 125,000 Americans die of COPD each year! In 2000, more women than men died of COPD, and it is now the fourth most common cause of death in the U.S.A. It is the only disease among the top five killers in America that continues to rise in the number of annual sick days and deaths.

By contrast, great progress has been made in reducing the number of people who become sick or who die from other major diseases, such as heart attack, stroke, and many cancers, largely because of early identification and treatment programs.

The NLHEP initiative is directed to primary care physicians, other healthcare clinicians, government officials, healthcare policy makers, healthcare agencies, and especially to patients. Many societies within the United States sponsor and/or endorse the NLHEP's initiatives. Several governmental agencies act as liaisons to the NLHEP. Financial support for the NLHEP comes from a wide range of sources including unrestricted grants from non-profit organizations, patient advocacy groups, private donors, as well as the pharmaceutical and medical support industries. The NLHEP enjoys a partnership with the American Association for Respiratory Care (AARC), a professional organization representing over 130,000 respiratory care professionals.

Together, the NLHEP and other like-minded organizations are attacking COPD, a common disease which results in suffering and premature death. Please learn how you can work with your doctor and other healthcare clinicians to help prevent, recognize, and treat COPD! We aim to reduce both the social and the economic impact of this important problem. We believe that through education to the public by professional and governmental agencies, the problem of COPD can finally be prevented and solved. Please visit our web site (www.nlhep.org) for more information about our organization.

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Chairman,

National Lung Health Education Program (NLHEP)

Thomas L. Petty, M.D., *Emeritus Chairman*

Save Your Breath, America!

This booklet is dedicated to people who live and breathe and to those who either have or may develop chronic obstructive pulmonary disease (COPD) — a name for two diseases, chronic bronchitis and emphysema. COPD affects an estimated 24 million Americans, but has only been “diagnosed” in about half of those who actually have COPD, largely due to a lack of awareness. In 2000, for the first time, more women than men died of COPD.

“Save Your Breath, America!” a patient booklet, is a companion to a booklet for physicians, “Prevent COPD Now.” The patient booklet is written in easy-to-understand language, and it provides the most current information on the causes and treatment of COPD. Based upon 30 years of study on COPD, the information in this booklet is offered as advice for persons who:

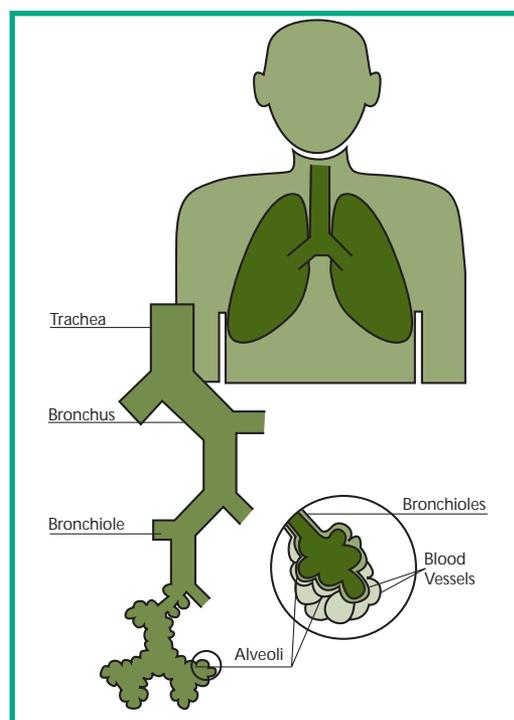
- Smoke now or who have smoked in the past
- Have a long-term cough, excess mucus, shortness of breath, or wheeze
- Have family members with COPD

Remember that the symptoms of COPD, including emphysema, may not show up or be acknowledged for 30 or more years after starting smoking, and the risk of developing COPD continues, to a smaller degree, even if you have stopped smoking. You should ask your doctor to order or to perform a breathing test (Spirometry) to determine if a breathing problem is present or will likely be present in the future. Everyone loses small amounts of lung function every year after reaching adulthood, but if you do not accelerate this yearly loss (i.e. by smoking), the lungs’ reserve is more than adequate to support your usual daily activities, and you will not notice this

small slow loss. If you stop smoking, the lost lung function is not regained, but the annual loss usually returns to the rate near that of a non-smoker. Thus, it is never too late to stop smoking.

You may need treatment to potentially slow the progression of COPD before it gets serious enough to cause symptoms that affect your lifestyle. If you notice a change in your ability to breathe as you perform ordinary daily routines or activities requiring exertion that you could easily do in the past, don’t delay. See your doctor! A major part of this booklet is devoted to the steps you can take to **save your breath and prevent COPD**.

Breathing is essential for life. Your body needs the oxygen in the air you breathe to create the energy that keeps you alive. Your respiratory system carries the oxygen to your lungs, where it enters your bloodstream to travel throughout your body. The bloodstream also carries the “used” air, which is mostly carbon dioxide, back to your lungs so that you can breathe it out.



What is COPD?

When fresh air is breathed in through the nose and mouth, it is pulled through the windpipe or **trachea** and into the lungs. There it moves through two large passageways, called the **bronchi**.

Then a complex system of much smaller tubes or **bronchioles** branch out 30 times or more to carry oxygen to the “working parts” of the lungs (300 million plus air sacs) called **alveoli**. These small sacs (like tiny folded balloons) have very thin walls that are full of blood vessels. The walls are so thin that the oxygen in the air can pass through them to enter your bloodstream and travel to cells in all parts of your body. Oxygen is required to “burn” food for the energy required by every organ of your body. The waste product of that energy is carbon dioxide, and it moves from the bloodstream into the air sacs, and then is exhaled from your lungs.

What does the term COPD mean? It stands for Chronic Obstructive Pulmonary Disease and refers to a problem with breathing air out of your lungs. If you have difficulty breathing “used” air out of your lungs, not enough space is left for oxygen-rich air to enter your lungs. This is sometimes called ‘hyperinflation’ or ‘air trapping.’

Until recently, most people who had COPD were grouped together and considered to have one disease. We now know that several different diseases are responsible for this difficulty in providing oxygen to the body and releasing used air (carbon dioxide) from the lungs. Chronic bronchitis and

emphysema are two of the major diseases that are grouped together as COPD.

Chronic Bronchitis

Chronic bronchitis occurs when the large breathing tubes of the lungs, or **bronchi**, are inflamed and swollen. Imagine what happens to your skin when you have an insect bite and it becomes swollen, red, and painful. This same idea can be applied to the swelling that occurs with bronchitis. The lining of the air tubes becomes swollen and produces large amounts of mucus. Because mucus clogs the airways, it complicates the problem, much like pus infects and irritates a wound and delays healing. When chronic bronchitis leads to persistent airflow obstruction, this is called chronic obstructive bronchitis, indicative of COPD.

The muscles that surround the airways may tighten when they should not, causing spasms of the bronchi, or **bronchospasm**. These narrowed airways prevent a portion of the “used” air from leaving the lungs.

Bronchospasm, inflammation, and swelling all make the space inside the airways smaller. This reduces the amount of air that can flow in and out of the lungs. It is like breathing through a straw.

The first symptom of chronic bronchitis is a persistent cough that brings up mucus. This is often followed by wheezing, shortness of breath, chest tightness and frequent chest infections. Shortness of breath is caused by increased work to move air out of the obstructed lungs. The symptoms of bronchitis can usually be relieved or improved with treatment.

Emphysema

Emphysema develops when many of the small air sacs in the lungs are destroyed. This reduces their ability to deflate (a loss of their elastic recoil) and to pass oxygen into the blood and remove carbon dioxide from the blood.

Shortness of breath (dyspnea) is the major symptom of emphysema. At first, this difficulty in breathing may occur only with moderate to heavy exercise. Later, it happens with light exercise and, still later, even when walking or engaging in other everyday activities, or at rest in its most severe stage. Do you notice that you no longer can keep up with friends your own age without getting out of breath? Do you get more tired with less exercise than you did a year ago? Can you now only shop two stores in the mall (instead of the five you easily shopped in the past) before you have to sit down and rest on a bench in the middle of the mall? If so, tell your doctor about these gradual changes, and ask your doctor to check your lungs with an instrument called a spirometer. Many people who have emphysema also have chronic bronchitis. The excess mucus produced by these inflamed airways makes breathing even more difficult.

In most cases, the lungs can take a lot of abuse. It may be 30 or more years before someone who has emphysema notices or acknowledges a change in his or her

health. Those with COPD often slowly modify their lifestyle, over months to years, to avoid taking part in activities that cause shortness of breath. Accordingly they become less physically and socially active which can bring on anxiety and depression. However, when COPD is diagnosed early, more can be done to treat it and perhaps slow its progression. By stopping smoking and using appropriate treatments or medications, persons with COPD (chronic bronchitis with or without emphysema) can generally lead more comfortable lives.

What Causes COPD?

Chronic bronchitis and emphysema most often develop as a result of one or more of these factors: cigarette smoking, family susceptibility, and/or inhaling large amounts of dust or fumes at work or at home.

Other conditions that can make COPD worse are frequent colds or infections in the nose, sinus, throat, or chest. It is also known that emphysema can be hereditary. In some families this might be due to a lack of normal lung "defenses" that fight damage within the lung (alpha-1 antitrypsin deficiency). It may also be because certain habits are passed along to other family members. For example, if parents smoke, there is a good chance that their children will smoke. Since more than 85% of COPD is caused by smoking, persons with family members who smoke are at greater risk of getting these diseases.

Early Detection

Early discovery of a breathing problem and appropriate treatment can often prevent the disease from progressing to the point that it seriously affects the way you live and work.

Anyone who has an ongoing cough or shortness of breath, even if it seems minor, should see the doctor. Morning cough, for example, is not normal. It is usually a result of smoking and indicates that there is irritation and swelling within the lung. Shortness of breath while exercising, climbing stairs, or walking can also be a sign of a breathing problem. Many people simply feel that they are “out of shape”, slowing down, or getting older when, in fact, they are working harder to breathe — perhaps due to early COPD.

Breathing Tests

A **spirometer** test can indicate whether your breathing is normal. It takes only a couple of minutes to blow into this machine, which can detect a change in your breathing ability even before you do. Fortunately, many physicians have a spirometer in their offices. The next time you see your doctor, ask for a spirometry test (lung function test), if you think you might have COPD.

Remember, when you take a spirometry test, no needles are involved. You don't have to take off your clothes. This test is not painful and will not cause you any discomfort. All you have to do is fill your lungs completely, pause, and then blow out all the air you can as fast as you can for six seconds. This test will give two

numbers for you and your doctor to understand together. The first number is the forced expiratory volume in one second (**FEV₁**). This is the total amount of air you blow out in the first second. The total amount of air you blow out in six seconds is called the **FEV₆**. Most people can blow all or most of the air out of their lungs in six seconds.

“Test Your Lungs—Know Your Numbers”

is the motto of the NLHEP. Most people know their blood pressure and cholesterol numbers and can tell if these numbers get higher or lower. You also should record and remember your spirometry test results for future comparisons. Spirometry will help you determine if you do have or don't have any amount of airflow problems. If you have any abnormal airflow, this could mean that you're on the pathway to developing emphysema or related chronic bronchitis. Prevent COPD now, and you will not have to face it later.

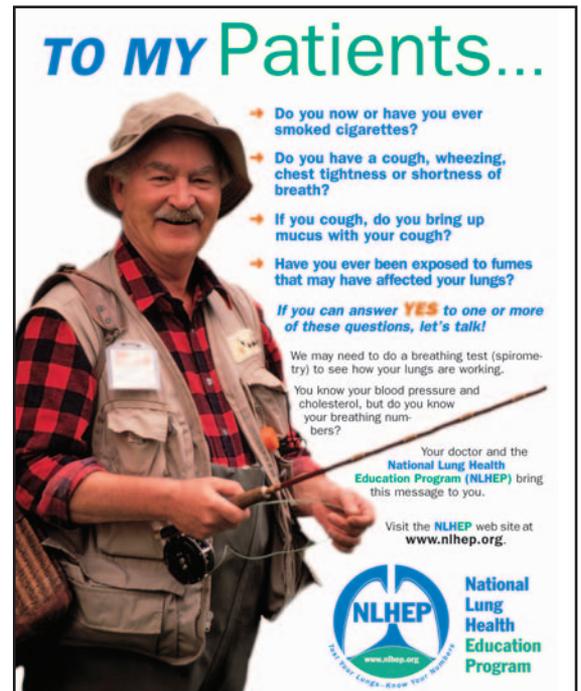
Breathing tests should be done on anyone who may be at risk for developing COPD, such as those who currently smoke, those who have smoked in the past, those who have family members with one of these diseases, or have one or more of the early signs/symptoms of COPD. Even if your airflow is normal on the test, and you currently smoke, you still need to stop smoking right away. Your lung function may fall below normal in the near future, and you are currently at a significantly increased risk of developing lung cancer or having a heart attack or stroke if you continue to smoke.

If the answer to any of the questions below is "Yes," you should see your doctor for a spirometry (breathing) test.

- Do you now or have you ever smoked cigarettes, cigars, or a pipe?
- Do you have a cough, wheezing, chest tightness or shortness of breath?
- If you cough, do you bring up mucus with your cough?
- Have you ever been exposed to fumes that may have affected your lungs?

After taking the test, you can ask your doctor these questions:

- Are my breathing measurements normal or abnormal?
- If abnormal, how abnormal are they?
- Is the problem one that can be treated with medications and/or by stopping smoking?
- If I have had a previous abnormal spirometry test, is the abnormality worsening?
- What exactly should I do for my problem?



The NLHEP has created posters that are intended to highlight these questions related to the common signs/symptoms of COPD. There are nine posters available, representing all ages, genders and ethnicities, and you can view these on our web site. Above are two examples of the posters. To find out more about this project, go to <http://www.nlhep.org/posters/info.cfm>.

Treatment

What can you do if you have an early stage of COPD (chronic bronchitis or emphysema)? Certainly you should change any behavior that can make it worse. The single most important thing you can do for yourself is to stop smoking. In fact, if you don't stop smoking, none of your other efforts will be as effective as they could be, and your COPD will get worse.

Smoking Cessation

Stopping smoking is a complex matter. If you decide that you want to quit, no matter what, you will succeed. People even with an early stage of COPD are often very addicted to the nicotine in tobacco. Nicotine replacement products are available to help deal with the uncomfortable symptoms of nicotine withdrawal that many patients experience when they try to quit smoking. Nicotine gum, nicotine patches, and nicotine lozenges are available at drug stores without a prescription. Nicotine nasal spray and nicotine vapor inhalers are available by prescription. An antidepressant drug called bupropion (Zyban®) can help you stop smoking. Additional smoking cessation agents have been approved or are on their way to approval by the FDA.

You must decide to quit and pick a specific quit date. No one can decide this for you. Quit completely all at once ("cold turkey"). Start nicotine replacement on your quit date. If your doctor prescribes bupropion (Zyban®), it should be started two weeks before your quit date and continued after your quit date. If prescribed, bupropion (Zyban®) can and should be used along with nicotine replacement.

If you fail, wait a week or so and set another quit date. Don't get discouraged. Try again. Many heavily addicted smokers succeed after several attempts to quit smoking. Quitting is the most important thing you can do for your health and for the prevention of COPD and its more severe manifestation of emphysema. In addition, you will decrease your risk for having a heart attack, a stroke, or developing lung cancer. It slows the premature wrinkling of skin or prevents impotence that is often associated with smoking!

Breathing Clean Air

As a COPD patient, you especially need to breathe in clean air. Therefore, you should also avoid being around smokers (second-hand or side-stream smoke) and fume-laden air. During days of fog or smog, try to stay indoors with windows closed. If possible, fumeless appliances should be used for heating.

Polluted air can possibly irritate your breathing passages. Try not to go out when the air quality is rated poor. But if you cannot avoid excessive air pollution, protecting your mouth and nose with a mask may prevent acute worsening of your breathing.

See Your Doctor

You should see your doctor on a regular basis to have your lungs checked with spirometry, to have a physical, and to evaluate your medicines — especially if you have a chest cold or any time you cough up

excess mucus. It is also important to guard against catching the flu by getting an influenza vaccine each fall, well before winter starts. A pneumonia vaccine should also be given to anyone over age 50, and to all persons of any age with COPD.

There are many different types of treatments that can help you cope with a chronic lung disease and live your life to the fullest.

Clearing Your Lungs

Coughing has an important “cleaning action” and is something you should do every morning and evening. You must

learn to cough in such a way that you can clear your lungs of excess mucus with two or three coughs. There are many ways to do this. Your doctor will teach you the way to cough that is best for your particular problem or he/she may refer you to a respiratory therapist or another healthcare clinician who can help you.

As an aid to this cleaning, your doctor might recommend breathing moist or humid air, and drinking plenty of fluids every day. This may help some with COPD to thin out the mucus so that they can cough it up more easily.

Notes:

Medications

Many different medications are used as treatments for COPD (chronic bronchitis or emphysema). Your doctor will decide which medicine is best for you based on your medical history, breathing tests, laboratory tests, and severity of COPD.

To help you breathe easier, your doctor may prescribe bronchodilator medications for you. Bronchodilators relax the muscles that surround the breathing tubes and widen them, letting air travel in and out more easily (reducing airflow obstruction) and not become trapped in your lungs (causing hyperinflation).

Your doctor may prescribe drugs to liquefy the excess mucus in your lungs. He may also prescribe drugs called inhaled corticosteroids, which may reduce swelling in the breathing tubes in more severe COPD. If you have an infection in your respiratory system, your medications may include antibiotics and/or a very short course of corticosteroids taken by mouth.

These medications may be available in many different forms. In addition to pills or syrups, these medications come as **metered-dose inhalers** (MDI) and **dry powder inhalers** (DPI). In order to get the most benefit from your medications, you must learn to use them correctly.

A device called a spacer or extender can also be used to make it easier to take your medication if it is delivered by an MDI. This device catches the mist produced by the MDI and holds it so that you can breathe it in at a slower rate. If you are taking a corticosteroid by MDI, it is very important to use a spacer or extender device.

Newer inhalers use DPIs to deliver bronchodilators and corticosteroids. It is not necessary to use a spacer when taking medication using a DPI device.

Inhaler Devices

While the most common way to take medication is in pill form, most medications for COPD come in an inhaled form. There are many types of devices that deliver inhaled medication and there are differences in how to use each of them. It is important that you know exactly what type of inhaler you are using and exactly how to use it so that you get the most benefit from your lung medications. On the following pages are step-by-step instructions on each major type of device along with general information and a list of the most common errors in taking medication using each device. These devices, which deliver medication to your lungs, require a prescription. Carefully read the package insert that comes with the inhaler you are using. If you have questions, please consult your doctor, pharmacist, or respiratory therapist.

The following instructions DO NOT take the place of the instructions you may receive from your doctor, respiratory therapist, and/or your pharmacist on how to use the medicines you are prescribed for your COPD. These are summaries and suggestions only. Always follow your doctor's and/or health care providers' instructions first and ask them if you have questions about the following suggestions.

Metered-dose inhalers (MDIs)

This type of inhaler releases a mist of medication in the form of an aerosol "cloud." Most of these devices require a prescription from your doctor. The medication in a metered-dose inhaler that can be bought without a prescription (over the counter), such as Primatene® Mist, is a non-specific adrenaline-like, short-acting drug which may be dangerous for persons with heart disease. It is not adequate to treat COPD.

In order to get the maximum benefit from any medication, it is important that the delivery device is used properly. Here are some helpful tips for using a metered-dose inhaler (MDI):

MDI "Open-Mouth" Technique

1. Remove cap. Shake the canister.
2. Sit straight or stand up straight.
3. Hold the MDI canister "two fingers" width away from your mouth. Then breathe out all the way.
4. As you slowly breathe in, press once on the MDI, breathing in to fill your lungs completely.
5. Try to hold your breath for 10 seconds — or as long as you can, then blow out slowly.
6. If your doctor wants you to take more than one puff, wait one minute. Then repeat steps 2-5.
7. Rinse your mouth out after you finish. Spit the water out; do not swallow it. Rinsing is always important if the MDI is a corticosteroid.

MDI "Closed-Mouth" Technique

1. Remove cap. Shake the canister.
2. Sit or stand up straight. Breathe out all the way.
3. Put the MDI in your mouth, between your teeth, tongue below the mouthpiece, with lips sealed.
4. As you breathe in slowly, press once on the MDI, breathing in to fill your lungs.
5. Try to hold your breath for 10 seconds — or as long as you can, then blow out slowly.
6. If your doctor wants you to take more than one puff, wait one minute. Then repeat steps 2-5.
7. Rinse your mouth out after you finish. Spit the water out; do not swallow it. Rinsing is always important if the MDI is a corticosteroid.

Here are some other things you should know:

- Always PRIME your MDI before using it for the first time or if you have not used it in some time. This means to shake it well and then puff it 1 to 4 times away from your face before using it. (This rarely needs to be done, and can waste medication if done frequently.) This assures that the medication is mixed well and that the puffs you take will have the right amount of medication in them.
- Always CLEAN the plastic mouthpiece area once a week by rinsing it under water, shaking off the water and then letting it air dry.
- We suggest that you use a SPACER with your MDI. If using a spacer, insert the end of the MDI canister holder (the plastic device) into

the holder on the spacer. Then put one puff into the spacer. Inhale slowly and deeply and then hold your breath if you can. If your doctor wants you to take more than one puff, repeat these instructions. When you are finished, remove the canister holder from the spacer, put the cap on your canister holder, and also cap the spacer.

- To clean your spacer, wash it in warm, soapy water, rinse it well, and allow it to air dry. You only need to do this every few weeks.
- Many steroid inhalers have a built-in spacer. However, if yours does not have a built-in spacer, be sure to get one from the pharmacist. Using a spacer will help to keep the medication from causing a mouth infection or sore tongue.
- Always STORE your MDI at room temperature. If it gets cold, only use your hands to warm it up.
- Always DISCARD the medication canister after you have used the number of doses that it holds. If you are in doubt about how many doses it holds, ask the pharmacist when you pick up your prescription. Write the start date and the number of doses on the side of the canister and when you have used up that number of doses, throw away the canister. It may feel like there is medication left in the canister, but only use it for the number of doses that it has in it. Do not float the canister in water to see if it still has medication in it.

Some common errors include:

1. Not coordinating the puff from the canister with breathing in
2. Breathing in too fast and not holding your breath at the end

3. Not pumping the inhaler until after you have taken in your deepest breath
4. Pumping the inhaler too many times before taking in a deep breath (double pumping)
5. Breathing out instead of in after releasing a puff of medication

Dry Powder Inhalers (DPIs)

These inhalers release a dry powder, and this dry powder begins to work when it hits the moist airways of your lungs. There are many devices that deliver dry powder, so it is important for you to know the specific name of the inhaler device you are using. There are do's and don't when you use these types of inhalers.

Do hold the device level so that the powder does not fall out.

Do store in a cool, dry place so that the powder stays dry and does not cake up.

Don't open the powder packet until you are ready to use it.

Don't shake the DPI before using.

Don't breathe into your DPI, as that will blow the medication away or make it cake up.

Don't use a spacer.

Each manufacturer includes directions for use with every medication. Please read these directions closely and be sure to talk to the pharmacist if you have any questions. Any instructions in this booklet for commonly used devices are not intended to be a replacement for instructions included with your medication when you pick it up from the pharmacy!

Aerolizer DPI (Foradil)[®]

Don't open the package until you are ready to use the medication. Don't wash this device, as you will get a new one every time you refill your prescription.

1. Remove cover and twist open inhaler.
2. Take capsule out of the blister pack and put it in the inhaler chamber.
3. Twist to close the inhaler.
4. Press blue buttons on both sides of inhaler to pierce capsule.
5. Breathe out fully with your mouth away from the device.
6. With your head slightly tilted back, put the mouthpiece in your mouth and inhale rapidly to fill your lungs.
7. Remove the device from your mouth and hold your breath for a few seconds.
8. Exhale slowly.
9. Twist open inhaler to remove and throw away the empty capsule.
10. Store device in a cool, dry place.

Autohaler DPI (Maxair)[™]

1. Hold autohaler device upright and raise the lever, snapping it into place.
2. Gently shake the device, continuing to hold it upright, and making sure not to block the vents on the bottom.
3. After breathing out (don't strain), put your lips around the mouthpiece and take in a deep breath. You will hear a "click." Keep breathing in to fill your lungs completely.
4. Take the device out of your mouth and try to hold your breath for about 10 seconds — or as long as you can. Then breath out slowly.
5. If your doctor wants you to take more than one puff, repeat steps 3 and 4.

Diskus DPI (Serevent, Advair*)[®]

This device has a dose indicator on the top. The numbers on the dose indicator turn red when there are only 5 doses left. If you are left handed, it is OK to turn the device upside down as it will work the same way.

1. Remove mouthpiece cover.
2. Slide the lever, making sure to keep the device level.
3. Exhale fully away from the device so you don't blow away the powder.
4. Then inhale quickly and fully.
5. Remove the device from your mouth and hold your breath for a few seconds.
6. Then exhale slowly.
7. Store device in a cool, dry place.

*** Only 250/50 dose of Advair is approved for COPD by the FDA**

Handihaler DPI (Spiriva)[®]

Each card contains two strips with three capsules in each strip. Use all three capsules in each strip before starting to use another strip.

1. Remove mouthpiece cover.
2. Take capsule from package and put it in the inhaler. Close the inhaler.
3. Press button so that needle pierces both sides of the capsule.
4. Keep the device level. Put the device in your mouth and inhale slowly to fill your lungs completely.
5. Hold your breath and remove the device from your mouth. Let your breath out slowly.
6. To get full dose, repeat steps 4 & 5.
7. Open the mouthpiece and remove the capsule. Brush off any powder that remains in the device.
8. Store device in a cool, dry place.

Turbuhaler DPI (Pulmicort)[®]

When the red dot appears at the top of the window, you have 20 doses left. When the red dot is at the bottom of the window, the device is empty.

1. Twist and remove cover.
2. Hold device so that the mouthpiece is up.
3. Turn grip to the left and then back to the right until you hear a click.
4. Breathe out all the way, keeping your mouth away from the device.
5. Put the mouthpiece in your mouth and inhale fast until your lungs are full.
6. Hold your breath and remove the device from your mouth.
7. Let your breath out slowly, keeping your mouth away from the device.
8. Replace cover and twist to close.
9. Rinse your mouth with water, but do not swallow the water. Spit it out.
10. Store device in a cool, dry place.

Twisthaler DPI (Asmanex)[®] *

1. Remove the Twisthaler from its foil pouch and write the date on the cap.
2. Hold the inhaler straight up with the pink portion on the bottom. Remove the cap while the inhaler is in this position.
3. Holding the pink base, twist the cap counterclockwise. When you do this, the dose counter will go down one number, and the device is loaded and ready to use.
4. Exhale fully. Then put the device in your mouth, holding it horizontally. Take in a fast deep breath.
5. Remove the inhaler from your mouth and hold your breath for a few seconds. You may not be able to taste or feel the medication because it is a very fine powder.

6. Wipe the mouthpiece dry.
7. Check to make sure the arrow is in line with the dose counter. Put the cap on firmly and rotate it clockwise as you press down. You will hear a “click” that will tell you the cap is fully closed.

*** off label use in COPD**

Nebulizer treatments

We are not reviewing how to use a nebulizer (powered by an air compressor) due to variations in equipment and disposable supplies. Consult your doctor or durable medical equipment (DME) provider for information pertinent to the equipment and disposable supplies you are using.

A word about hydrofluoroalkanes (HFAs)

Studies by environmental scientists on one of the propellants used to “power” inhalers (CFC or chlorofluorocarbon) show that CFCs can damage the ozone layer in the Earth’s atmosphere. While CFCs are safe for patient use, the United States and other countries signed an agreement to discontinue using CFCs (the Montreal Protocol of 1997). This means that aerosol drug manufacturers have had to change the way inhaler medication is delivered. So when you hear the term “HFA” or see it in print, be assured that the medication you are taking has not changed — only the way it is “powered.” You may notice a change in:

- Feel. The medication does not come out as fast.
- Taste. Some patients say their medication tastes different using an HFA.

New Developments

Progress is continually being made in the treatment of COPD (chronic bronchitis and emphysema). Two major classes of bronchodilator medications are now available in metered-dose and/or dry-powder inhalation devices (anticholinergics and beta-agonists). For COPD patients who require more than one bronchodilator, these medications can be used together and can lead to effective bronchodilation greater than that obtained from either medication alone. These medications should be used together only if your doctor prescribes them that way. Two of the short-acting bronchodilators sold in separate metered-dose inhalers also come in an inhaler that has both of these medications mixed together in a single inhaler for convenience. Other inhalers have a long-acting beta agonist mixed with a corticosteroid. Since these medications work on the respiratory system in different ways, they can be used together to treat COPD.

A new replacement therapy that may be effective in a rare hereditary form of emphysema (an inherited deficiency of alpha-one antitrypsin) is commercially available. Although it restores a protective material in the lungs, its effectiveness in preventing the progression of emphysema remains to be proven.

Surgery that removes areas of major lung damage is called lung volume reduction surgery (LVRS) and may make breathing easier for people with emphysema. In some patients, this operation can improve

shortness of breath and quality of life. The mechanisms behind the improvement are complex, but it is thought that removing the over-inflated and diseased part of the lungs (the apices) will help the diaphragm work better.

The upper lungs (the apices) take up a lot of space for expansion in comparison to the rest of the relatively normal lung, and they don't play a very important part in breathing – but they are often the most damaged area of the lungs. An extensive evaluation of the lungs must be done, including lung scans and tests of heart function, to determine who is a good candidate for LVRS. The National Emphysema Therapy Trial (NETT) compared the results of this lung surgery plus pulmonary rehabilitation to pulmonary rehabilitation alone. The results of the NETT trial and other studies have taught us that while some may benefit, this surgery is not for everyone – and it can actually lead to a worse quality of life or premature death.

Qualified surgeons are now offering this operation to selected patients after a thorough evaluation-based on the findings of the NETT. Patients should be evaluated by pulmonologists (lung specialists) and surgeons working together before going ahead with this treatment. Ask your doctor if lung volume reduction surgery may be a treatment option to be considered.

The Future

Today, doctors and scientists have a better understanding than ever before of the nature of COPD (chronic bronchitis and emphysema). These diseases are viewed as causing damage to the lungs resulting from at least two factors. The first factor is that outside conditions such as smoking, air and environmental pollution, and in some cases, frequent infections can damage the lungs. The second factor is the hereditary loss of certain lung defenses, which leaves the lungs easier to damage. The future promises more advances in understanding why patients get COPD and how to better prevent and treat this disease process.

For Additional Reading:

Carter R, Nicotra B, Tucker JV: Courage and Information for Life With Chronic Obstructive Pulmonary Disease. New Technology Publishing, Inc. Onset, MA, 1999, 264 p.

Good JT Jr, Petty TL: Frontline Advice for COPD Patients. Snowdrift Pulmonary Conference, 2006, 99 p. XLibris Publishing Co. (orders @XLibris.com)

Hodder R: Every Breath I Take. A Guide to Living with COPD. Stoddart Publishing Company, Limited. Park Centre, Toronto, Canada, 2001, 244 p.

Petty TL, Nett LM: Enjoying Life With COPD. Laennec Publishing, Cedar Grove, NJ, 3rd Edition, 1995, 199 p.

Diagnosing any breathing problem by spirometry at an early stage is most important. The treatments and medications discussed in this document can often help to slow the progression of COPD, in addition to making your life as comfortable as possible. The earlier the diagnosis is made and treatment started, the better your health will be. Diagnosing COPD (chronic bronchitis and emphysema) early can **Save Your Breath, America!**

Web Sites:

If you type "COPD" into your computer to do an internet search, you will find more than 600,000 references. Please be aware that not all these references contain accurate information — information that has been written by or edited by health care professionals. To be more confident of the information you receive, look for addresses that end with "org" or "gov," as this designation means that the information comes from a non-profit organization such as NLHEP or a governmental agency such as the National Institutes of Health (NIH).

American Association for Respiratory Care:
www.aarc.org
YourLungHealth.com

American Cancer Society:
www.cancer.gov/cancertopics/factsheet/Tobacco/cessation

American College of Chest Physicians (ACCP): Inhalation Devices Handouts
www.chestnet.org/patients/guides/inhaledDevices

American Thoracic Society (ATS)
www.thoracic.org

Global Initiative for Obstructive Lung Disease (GOLD)
www.goldcopd.com

National Institute for Health (NIH):
www.smokefree.gov

National Lung Health Education Program:
www.nlhep.org

U.S. COPD Coalition
www.uscopd.com

The New Era

The prevention of lung disease and the promotion of lung health is the goal of the National Lung Health Education Program (NLHEP), conducted in collaboration with government, medical and other health professional organizations. Chronic Obstructive Pulmonary Disease (COPD) is the fourth leading cause of death in the United States. Because of this, the NLHEP was implemented to develop and promote a nationwide education program designed to identify COPD in its early stages. One objective is to promote a program of intervention to slow the progression of COPD before development of clinical symptoms of chronic cough, excess mucus and shortness of breath, which are early signs of risk leading to disabling forms of this chronic lung disease. The spirometer can be used to identify early stages of COPD and can also identify people at risk of death from lung cancer, heart attack, and stroke. Indeed, preservation of lung health is the key to good health in general.

Put'm Out!



Keep'm Out!



**National
Lung
Health
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National Lung Health Education Sponsors

Star Level

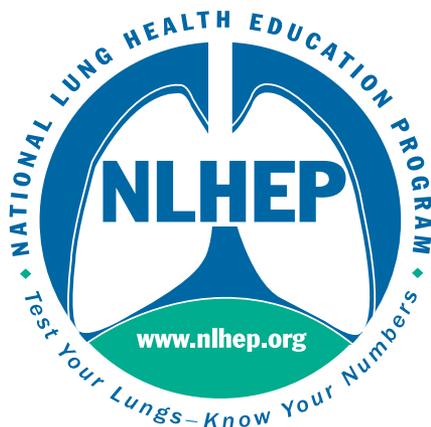


Partner Level



The National Emphysema Foundation

Supporter Level



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