Chronic Obstructive Pulmonary Disease

Patient Education
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All content is current and up to date at the time of this printing. Edited and reviewed by Louis M. Kaufman, RRT-NPS, AE-C, FAARC and Jan Camargo RN, CRRN.
Chronic means it will not go away
Obstructive means partly blocked
Pulmonary refers to the lungs
Disease means sickness

Facts¹
- COPD, also known by other names such as emphysema or chronic bronchitis, is a lung disease in which the lung tissue is damaged, making it hard to breathe.
- With COPD, the airways (the tubes that carry air in and out of your lungs) are partly obstructed, making it difficult to get air in and out.
- COPD develops slowly, and it may be many years before you notice symptoms (like feeling short of breath).
- Most of the time, COPD is diagnosed in middle-aged or older people.
- Doctors cannot cure COPD, but will try to improve how you feel and possibly slow the damage to your lungs. Early diagnosis and a healthy lung program are both very important in the treatment of COPD.

When you follow the instructions of your doctor, you will:
- Feel less short of breath
- Cough less
- Feel better and get around better

How Do the Lungs Work?
Normally, in healthy people, the airways (windpipes) are clear and open. At the end of each airway, there are many tiny air sacs that fill up with air and oxygen when you breathe in (inhale). Then, when you breathe out (exhale), the air quickly goes out and gets rid of carbon dioxide that your body has created.

However, when you smoke or are exposed to things like cigarettes and air pollution for a long time, you may begin to have a cough for several months or start to feel short of breath. The following can occur when COPD begins to affect your lungs:
- Airways and air sacs lose their stretchiness (like an old rubber band)
- Destroyed air sac walls
- Swollen airway walls
- Clogged airways due to more mucus, which could also cause trouble breathing or more coughing
A diagnosis of COPD is usually considered in any patient who has the following:

• Symptoms of a cough
• Sputum (mucus) production
• Dyspnea (shortness of breath) on exertion
• Exposure to risk factors for the disease

**Risk Factors**

Most people with COPD are smokers or were smokers in the past. If your family has a history of smoking, this could mean that there will be more cases of COPD within your family.

The chance of developing COPD is also greater in people who have spent many years in contact with lung irritants such as air pollution, fumes, vapors, and dust (usually linked to certain jobs).

A person who has had frequent and severe lung infections, especially during childhood, may have a greater chance of developing lung damage that can lead to COPD. Fortunately, this is much less common today with antibiotic treatments.

The population of individuals aged 40 and older tend to realize symptoms of COPD as they age. It is unusual, but possible, for people younger than 40 years old to have COPD.

The diagnosis requires lung testing (spirometry) to confirm the presence of airflow limitation that is not fully reversible.

Spirometry is usually obtained in all people who have the following history:

• Exposure to cigarettes and/or environmental or occupational pollutants
• Family history of chronic respiratory illness
• Presence of cough, sputum production or shortness of breath (dyspnea)

Much can be done to lessen the side effects and symptoms of this disease. You can lead an active and rewarding life by following the advice of your physician and by following some simple tips.

If you smoke, quitting is the single most important thing you can do to reduce your risk of developing COPD and slow the progression of the disease. There are many ways to quit. Talk to your doctor to find the program that best meets your needs.

**How Do You Treat COPD?**

Your doctor will recommend treatments that help relieve your symptoms and help you breathe easier. Remember though, COPD cannot be cured.

The goals of COPD treatment:

• Slow progression of COPD
• Prevent/lessen symptoms
• Stay healthy
• Learn how to breathe better and exercise
• Prevent/control flare-ups

For each person, the treatment for COPD is different. Your family doctor may recommend that you see a lung specialist called a pulmonologist. Treatment is based on whether your symptoms are mild, moderate, or severe. Medications and pulmonary rehabilitation are often used to help relieve symptoms and to help you breathe easier and remain active.

**Where to Get Help or Additional Information**

• Contact your physician regarding any changes you experience or symptoms that worsen or do not go away.
• Your home care provider can provide you with additional information about COPD and the therapies that you are receiving for COPD.
**COPD & Exercise**

**Basic Information**
Many who suffer from COPD are usually in a weakened state as a result of frequent infections and the inability to clear their secretions. Also, COPD patients may experience anxiety, depression, and social isolation due to the limitations placed on their lifestyles.

No matter how mild or severe your COPD, exercise is still possible in some shape or form. You will be surprised how a few moments of movement a day can help improve your mood and your well-being. Exercise cannot reverse the physical effects of COPD. It can reduce disability by improving endurance, breathing efficiency, and ability to tolerate dyspnea (shortness of breath), especially in severely impaired patients.

Your doctor may recommend that you participate in pulmonary rehabilitation, or “rehab.” This is a program that helps you learn to exercise and manage your disease with physical activity and counseling. It can help you stay active and carry out your day-to-day tasks. Patients who follow an individualized program can often increase their work capacity 70-80% within 6 weeks. Shortness of breath is a problem for almost everyone with lung disease. You are bound to experience shortness of breath when you exercise. Keep in mind that if you are following a program designed for you, dyspnea is not dangerous. One of the big benefits of exercise will be your growing ability to tolerate shortness of breath without anxiety.

As a COPD patient, you probably already know that you need extra energy just to breathe. If you can use your energy more efficiently for breathing, you will have more energy left for routine daily activities, as well as new ones. Actively practicing some form of exercise, along with proper nutrition, can significantly improve your quality of life. Below, you will find some general recommendations for exercising, but as always, check with your doctor before you begin any exercise program.

**Consult Your Doctor**
Before you begin an exercise program, you should always consult your doctor. He or she might recommend that you use medicine or other equipment to improve oxygen flow during exercise. They might also have specific types of exercises that would be helpful to you, as well as inhalers or supplemental oxygen to help while performing your exercises.

**Nutrition**
Before thinking about exercise, remember that nutrition and COPD impact one another greatly. Good nutrition is critically important in the treatment of COPD since it can have a profound effect on the severity of the disease. COPD can create circumstances that make consuming an adequate diet or amount of food difficult. Work with your physician to determine how it would be best to maintain or achieve a desirable body weight.

**Beginner’s Advice**
Before you begin an exercise program, here are some important things to keep in mind:

- As stated previously, consult your doctor before beginning any exercise program. He or she can recommend the best type of exercise for you, along with any additional precautions you should take.
- Never rush through your exercises. Take a break if you need one.
- Start off slowly. As you begin to exercise more frequently, you will be able to increase your fitness level.
- Set small goals along the way. This will keep you on track and focused.
- Keep your eye on external conditions. If the weather outside is unfavorable, adapt your routine to work indoors (possibly a mall).
- Find a routine that you enjoy. If you enjoy exercising, you are more likely to continue doing it.

**Guidelines for Exercising with COPD**
Before starting your daily exercises, you should warm up your lungs. This has been known to improve lung function and help while performing exercises. This will only take a few extra minutes and is very simple. All you need to do is inhale through your nose and then exhale through your mouth. Be sure and exhale or push out your breath twice as long as you inhaled. After preparing your lungs, you are ready to exercise.

- **Start slowly:** If you can walk or bicycle for 2 minutes at first, do that. There is no rush. Find a pace that is right for you and improvements will come. Your doctor will help to set appropriate and reachable goals.
- **Be consistent:** Even small or modest workouts will bring noticeable benefits if you keep them up consistently. If you exercise less than 3 times per week, you will probably not notice much improvement.
- **Break up or alternate activities:** If you can only walk for 5 minutes at a time, schedule more than one session per day. Alternate your activities with other exercises such as swimming or weight training. If you grow bored, you will stop exercising.
- **Choose activities you enjoy:** Exercise should not be dreaded. Have fun and try other activities until you find ones that you like.
- **Proceed at your own pace:** This is not a race; you are not competing with anyone but yourself.
- **Cool down:** Cool down activities, like stretching or walking at a slower pace, will complete your exercise routine and help bring your heart rate down to normal levels.
COPD Patient Exercises
There are many types of beneficial exercises for patients with COPD. Some of those are:

- Stretching
- Flexibility
- Breathing
- Walking
- Aerobic – swimming, walking, dancing
- Resistance training
- Light weight training

It is recommended to perform some type of exercise at least 3 times a week to receive the most benefit.

Not in the Mood to Exercise?
Physical and mental well-being is improved for anyone who exercises, but especially for patients with COPD.8 When you’re not in the mood to exercise, consider the following:

- Exercise may improve your quality of life.
- Exercise strengthens muscles and therefore uses oxygen better throughout the body.
- Exercise may improve your mobility, which will make it easier to complete daily tasks.
- Avoid being admitted to the hospital. Exercise can improve your general feeling of well-being while keeping you healthy and living at home.
- Maintain your weight. Excess fat around your stomach makes it harder to breathe. Exercise is a great way to keep your weight controlled.
- Do not slip into a downward spiral. The more you do, the more you will be able to do going forward.
- Breathe easier. Exercise stops the vicious cycle of inactivity.
- Boost your mood. Activity has been shown to improve symptoms of moderate depression and helps you to relax.6
- Improve your sleep. Exercise provides you more energy to complete your daily activities and can lead to better sleep.

COPD Exercise Precautions
- Ask your doctor about your exercise program if new medications are prescribed, as exercise can impact the medicine and you need to be aware of any changes that could occur.
- If you seem over-tired, start out at a lower level of exercise until you are able to maintain this level without feeling over-worked.
- Be aware of your limits when performing household chores. Some are heavy and labor intensive, and you should ask for help.

- Avoid exercise that would strain your muscles, such as push-ups or sit-ups, without first confirming with your doctor that you are able to do these exercises.
- Do not rest in bed after exercising. If you are tired, take a rest for a short period of time in a chair.
- Avoid unfavorable exercise conditions involving the weather. Try to exercise indoors where heat and humidity can be controlled.
- After exercising, do not immediately take a hot or cold shower/bath.
- Walking on hills requires slower movement so as not to overwork your heart.
- If your exercise routine has been interrupted for a few days, start over at a slower level.
- Do not exercise if you are not feeling well.
- If you experience shortness of breath or an irregular heartbeat during or after exercise that will not go away, contact your doctor for advice.
- Rest and stop exercising if you experience any of the following:
  - Weakness
  - Dizziness
  - Weight gain
  - Pain in chest, arm, jaw, or shoulder (contact doctor immediately in these instances).6
COPD & Nutrition

Nutrition and COPD impact one another greatly. Good nutrition is critically important in the treatment of COPD because it can have a profound effect on the severity of the disease. Unfortunately, COPD can create circumstances that make consuming an adequate diet difficult. You should talk with a Registered Dietitian (RD) who specialized in COPD. A RD can work with you to develop a food plan you can live with, provide tips on reading food labels, grocery shopping, cooking, baking, and eating away from home, as well as recommend cookbooks and other materials for assisting with your nutrition needs. The dietician can also review your medications and discuss any possible drug-food interactions with you.

Maintaining or Achieving Desirable Body Weight

People with COPD are often so focused on breathing that other aspects of their health are ignored. It is important that patients with COPD focus on eating a healthy diet. One of the big problems in trying to improve diet is that the symptoms of the disease can make eating healthy, or even eating at all, a challenge. Sometimes it is difficult to eat, since you breathe and swallow through the same tubing system.

Nutritionists often address the needs of COPD patients by examining their body type. Being large or overweight can make patients with COPD even more short of breath. This constitutes the need for COPD patients to exercise more in order to reduce their weight, but this is also challenging since exercise can make a person short of breath.

On the opposite end of the spectrum, some COPD patients lose weight and need to gain weight to maintain good health. These patients will need to eat a high calorie diet to gain weight. Research has pointed to the fact that underweight patients with COPD will experience fewer symptoms if they are able to gain weight.7

Nutritional therapy for COPD does not just focus on food intake to promote weight loss or gain. There are many types of food that people can eat that will make a big difference in breathing.

Your Immune System

In order to maintain a healthy immune system, the body needs sufficient calories, protein, vitamins, and minerals. Cells that fight infection in the body contain protein and if you are in poor health and have low amounts of protein in your system, it complicates the process of building the immune system to fight off infection and other complications from COPD, which could result in respiratory infections. A poor appetite or low calorie consumption also contributes to lower immune system. Good nutrition, exercising sufficiently, and maintaining overall healthy practices helps COPD patients stay as healthy as possible.

Your Needs

- **Calcium:** Calcium is a mineral that helps to build strong bones and regulate blood pressure. Dairy products are high in calcium, but supplements can be taken to boost calcium levels. It is important to note that calcium from vegetables does not get absorbed well by the body.8
- **Adequate calories:** Your doctor should be able to inform you of the appropriate number of calories that are sufficient for your body and diet.
- **Potassium:** Potassium is a mineral that helps with blood pressure control and some nervous system functions. Some patients take diuretics to reduce water retention, but this will also deplete the amount of potassium in the body. Fruits and vegetables high in potassium can help control this level in your diet.
- **Caffeine:** Reduce or limit the number of drinks consumed which contain caffeine. Most drinks are now available in non-caffeine form. The caffeine contained in drinks will affect medicines that affect water retention.
- **Fluid:** Your physician should provide you with the correct amount of fluid that should be taken on a daily basis. A good goal for many people is to drink 6 to 8 cups of water daily.
- **Protein:** Protein helps to build cells that may be damaged in the body. The doctor or dietician will determine the amount of protein you need in your diet.
- **Carbohydrates:** Eating food high in carbohydrates produces carbon dioxide when the food in metabolized in the body. Carbon dioxide is expelled through the lungs, but the more carbon dioxide you produce, the harder it is on the lungs. This compounds the symptoms of patients with COPD.
- **Fat Intake:** Fat is a primary source of energy, but it also produces the least amount of carbon dioxide when metabolized in the body. Depending on your body type, you could need more or less fat in your diet to maintain the weight recommended by your doctor.

Tips for Eating Well

- Eating three small meals and three snacks daily helps to keep the body from feeling too full and putting even more pressure on the chest.
- If you are planning to eat a large meal, eat it earlier in the day.
- Do not lay down after eating a meal.
- Rest before eating.
- Have water and juice available to drink at all times.
- Avoid foods that may make you feel bloated or over-full.
- Cook foods that are easy to prepare.
• Planning ahead and cooking extra will allow you to freeze left-overs for future meals.
• If you are becoming short of breath while eating, slow down and chew smaller bites.
• Eat many types of foods so you receive the maximum amount of vitamins or minerals in your diet.

Bloating and Feelings of Fullness
Since COPD patients usually are short of breath, any additional pressure on their system makes them feel even fuller or have a hard time eating. Bloating can occur when you are eating in a hurry, which causes air to be inhaled. Foods that form gas also fill the stomach and make it push on the chest area, which leads to more difficulty breathing. Some common foods that can cause bloating or gas are whole grain breads, broccoli, cabbage, cauliflower, beans, milk, onions, and nuts.

Tips for Adding Calories
• Eat healthy snacks such as cheese and crackers or ice cream.
• If you like fresh fruit, select the fruits that contain the most calories.
• Replace water, coffee, and tea in your diet with juice, as calories are needed in the diet.
• Try adding the foods listed below to your diet, as they are high in calories and can assist in weight gain:
  - Butter or margarine
  - Mayonnaise
  - Peanut butter
  - Cream cheese
  - Sour cream or yogurt
  - Whipped cream
  - Honey
  - Powdered coffee creamers
  - Raisins, dried fruit, or nuts

Tips for Adding Protein
Meats and milk-rich foods contain the most protein. Protein is needed in order to aid in the fight of infections and to help build muscle strength.

Some ways to improve protein levels in your body are:
• Add powdered skim milk to items you cook or eat.
• Add meat or chicken to soups or stews.
• Add grated cheese into preparing different meals.
• If you are needing a snack, use peanut butter.
• Eating dishes which include eggs, whether hard-boiled or just included in desserts, will increase protein levels.

Loss of Appetite
Loss of appetite is a common symptom for patients with types of lung disease. Some factors that lead to weight loss could be stress, illness, fatigue, or any combination of these symptoms.

A cycle begins with weight loss, which leads to being tired, and being tired leads to not eating. In order to help build up your appetite:
• Eat small snacks daily.
• Eat calorie-rich items for your snacks.
• When appetite loss has occurred, taste buds sometimes are affected. Suck on candy in order to stimulate your appetite before eating.
• If you are hungrier at a certain time of day, eat more at this time.
• Eat your favorite foods to increase your appetite.
COPD & Smoking Cessation

According to the American Lung Association, smoking-related diseases claim an estimated 430,700 American lives each year. Smoking costs the United States approximately $200 billion each year in health care costs and lost productivity.9

COPD Facts
- As of 2011, COPD is the third leading cause of death in the United States and at least 9 out of 10 of these deaths were attributed to smoking in some way.10
- Statistics show that over 15 million people in the US have COPD or other diseases related to it.10
- According to research by the American Cancer Society, both men and women who have smoked are more likely to die from COPD than those who have never smoked.11
- The diagnosis of COPD is usually in the top 10 most common chronic health conditions.11

Smoking Facts11
- Smoking can lead to coughing or wheezing.
- Smoking has been known to damage the lungs and airways, which leads to COPD.
- Smokers are more susceptible to illnesses or respiratory infections due to lower immune systems.
- Lung function in smokers is poorer than those of nonsmokers.

Why Stop Smoking?
Stopping smoking is very helpful in preventing or slowing the advancement of COPD and its conditions. A patient with COPD who does stop smoking may improve their quality of life even if they have a lung disease. There is clear evidence that smoking cessation relieves symptoms, slows the progression of COPD, reduces the risk of lung and other cancers, and increases life expectancy.12

Organizations which have information on smoking cessation include the American Lung Association (www.lungusa.org), the American Cancer Society (www.cancer.org), and National Lung Health Education Program (www.nlhep.org). Visit their websites for more information.

Nicotine Addiction
Nicotine is a powerfully addictive drug which can affect the mind and/or behavior, which increases the chance of a person becoming dependent on the drug. Tobacco is also considered an addictive drug. People addicted to these drugs tend to show some of the following characteristics:13
- The need or want for more of the drug, even if known health consequences could result
- Increasing doses of the drug to keep experiencing the same effect or high
- Feeling worse or suffering from harsh symptoms when reducing or quitting the drug

Most research shows that addiction to tobacco produces a feeling of happiness or pleasure to the smoker. The pleasurable feelings may last only a few seconds, but the smokers will crave this feeling.

Symptoms of Withdrawal May Include12
- Nervousness
- Not able to sleep
- Bad mood
- Lack of ability to concentrate
- Hyper
- Mad or bad attitude

Types of Cessation Programs
There are many ways to quit smoking. The type of program your doctor may recommend could include:

Behavior Modification
Behavioral modification deals with the changing of habit patterns that result in cues to start smoking. Often, these cues are not even recognized by you. These may be as simple as a telephone call, a coffee break, a pleasant meal, or following sexual activity. Sometimes boredom, delays in traffic, or other frustrations are signals to light up once again. Maybe you light up immediately when waking up and find the first cigarette of the day the most necessary and pleasing. Smoking more than one pack a day usually identifies that you are heavily addicted.

- Get ready to quit.
- Set a quit date and write it down (My quit date: _______________).
- Change the things around you.
- Get rid of all cigarettes and ashtrays in your home, car, and place of work.
- Do not let people smoke in your home.
- After you quit, do not smoke. Not even a puff!

Your quit date could be coordinated with the use of smoking cessation medication (nicotine replacement therapy). Perhaps your quit date may be some special occasion, such as a holiday or anniversary. Stressful times such as tax deadlines, just before final exams, or a job interview are not good times to try and quit. Ask your doctor about which medication he or she would recommend you take to combat withdrawal symptoms and when you should begin taking it. One of the medications that may be prescribed is Bupropion. This drug should be started approximately 2 weeks before your quit date.13
Nicotine Replacement Therapy
• Get medicine to help you quit.
• You can buy nicotine gum or the nicotine patch at a drug store. You can ask your pharmacist for more information.
• Your health care provider may recommend medicines such as nicotine nasal spray, nicotine inhalers, or Bupropion SR (pill).

Research shows that nicotine is the substance in tobacco that leads to dependency on the product. Nicotine replacement therapy (NRT) helps to reduce the cravings and withdrawal symptoms, and often helps to improve the success rate for quitting smoking.

Relapse
• If you “slip” and smoke, do not give up. Set a new date to get back on track.
• Avoid alcohol.
• Avoid being around smoking.
• Eat healthy food and get exercise and plenty of rest.
• Keep a positive attitude.
• You can do it!

Many addicted patients fail on the first or subsequent attempts to stop smoking. Do not get discouraged. In fact, the more often the patient tries to quit, the more chances for success. Most smokers make multiple quit attempts before they quit smoking for good.

Concerns smokers may have regarding stopping include weight gain and depression. Weight gain is a particular concern in women. Many women use nicotine as a weight control measure. Nicotine replacement helps lessen weight gain, which on average is 10 pounds over the first 6 months. However, this weight gain can be controlled through exercise. Exercise may also reduce the craving for tobacco.

Some women also use nicotine to combat depression. Thus, depressed patients who are candidates for smoking cessation must be closely counseled by their health care professionals. If the possibility of worsening depression is a realistic consideration, Bupropion can also be used as an antidepressant. This medication may be particularly useful in women who are on the verge of depression while stopping smoking.

Where to Get Help or Additional Information
• Tell your family, friends, and people who work with that you are going to quit. Ask for their support.
• Talk to your doctor, nurse, or other health care worker. They can help you quit.
• Get together with other people who are trying to quit, or call a hot line.
• To find out where to get help in your area, call the American Cancer Society toll-free: 1-877-448-1848.

Congratulations to you if you have made the decision to quit smoking or are thinking about quitting! Not only will you improve your own health, you will also safeguard the health of your loved ones by no longer exposing them to second-hand smoke. We do know how hard it can be to quit smoking.

Did you know that most smokers make multiple quit attempts before they quit smoking for good? Nicotine is a very addictive and powerful drug. It has been noted to be as addictive as some of the most illegally used drugs, such as cocaine and heroin. The good news is that millions of people have given up smoking for good. It is hard work to quit, but you can do it! Freeing yourself of a habit that is dangerous to your health and the health of others, as well as expensive, will make you feel terrific!

Think Through the Whole Process
Look at the following comments and then start your countdown to your quit date.

GET READY TO QUIT by picking a date to stop smoking. Mark it on the calendar. Write down why you want to quit and keep this list as a handy reminder. Picture yourself not smoking!

GET SUPPORT AND ENCOURAGEMENT from your family, friends, and coworkers. Let the people important to you know the date you will be quitting and ask them for their support. Ask them not to smoke around you or leave cigarettes out around you.

LEARN NEW SKILLS AND DO THINGS DIFFERENTLY when you get the urge to smoke. Talk to a friend, go for a walk, or do something you enjoy, like gardening or going to the movies. Try to reduce your stress with exercise, meditation, hot baths, or reading. It is helpful to plan ahead for how you will deal with situations or triggers that will make you want to smoke. Have sugar free gum or candy around to help with cravings that occur. Drinking lots of water or other fluids also helps. You might want to change your daily routine as well. Try drinking tea instead of coffee, eat breakfast in a different location, or take a different route to and from work.

TALK TO YOUR DOCTOR OR NURSE ABOUT MEDICINES TO HELP YOU QUIT
Some people have symptoms of withdrawal when they quit smoking that upset and change their daily lives and quality of life. Smoking does not suppress your appetite, but when quitting, you may feel hungry. Medicine is available to assist with any of the withdrawal symptoms you may experience. Consult your healthcare professional about which medicines are right for you.

BE PREPARED FOR RELAPSE
Most people relapse or start smoking again. Remember that most people try numerous times to stop smoking before they actually successfully become smoke free. If you have a relapse, review what worked and what didn’t work to implement into your plan for the next time you try to quit smoking.