

COPD

COPD

How does COPD affect your breathing?

When you breathe, air travels down your windpipe into airways. The airways branch into smaller, thinner tubes that end in bunches of tiny air sacs. These air sacs stretch and inflate when you breathe in, and deflate when you breathe out.

When you have COPD, your lung function is reduced with less air flowing in and out of the airways because of one or more of the following:

- **Airways and air sacs lose their elastic quality (the ability to return to normal size after stretching).**
- **The walls between many of the air sacs are destroyed.**
- **The walls of the airways become thick and inflamed.**
- **The airways make more mucus than usual, which can clog them.**

Pursed-lip breathing.

Pursed-lip breathing is a simple breathing exercise that can help improve your breathing. It is not a substitute for treatment or formal pulmonary rehabilitation. Before starting this or any exercise, ask your doctor if it is right for you.

1. Sit upright, and relax your neck and shoulder muscles.
2. Close your mouth, and breathe in slowly through your nose for a count of two: 1... 2. Just a normal breath will do.
3. Now, pucker or purse your lips as if you were going to whistle, and blow slowly and gently through your pursed lips while counting to four: 1... 2... 3... 4.
4. Repeat for a minute or two, or as long as you feel comfortable.

Among the major triggers:

- Dangerous gases (including carbon monoxide and radon)
- Air pollution: indoor and outdoor air pollution can trigger COPD. Avoid traffic jams, smoke, and strong chemical fumes, and limit the time you spend outside if there is an air pollution alert
- Smoking
- Infections: Please vaccinate yourself against flu, pneumonia and pertussis.

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Know what to expect with maintenance treatment.

- Even if you don't feel it working, taking your maintenance medication every day can help keep your airways open and your lungs feeling less constricted
- Maintenance medicines shouldn't be used in an emergency
- Taking maintenance medicines every day may allow you to use rescue inhalers less often
- Continue to take maintenance treatments every day—even when you are breathing better—to keep your airways open

The Great 8: Basic Nutritional Guidelines for COPD Sufferers

Here are some basic nutritional guidelines that will support your body if you have been diagnosed with COPD or another chronic lung disease:

1. Maintain a Healthy Body Weight

If you are overweight, your heart and lungs have to work harder to breathe. In contrast, if you are underweight, you may feel weak and tired and be more susceptible to infection. Chest infections can make it more difficult to breathe and lead to [COPD exacerbation](#).

2. Monitor Your Body Weight

Weighing yourself at least once a week will help you keep your weight under control. If you are taking [diuretics](#) or [steroids](#), however, your doctor may recommend daily weigh-ins. If you have a weight gain or loss of 2 pounds in one day or 5 pounds in one week, you should contact your doctor.

3. Drink Plenty of Fluids

Unless your doctor tells you otherwise, you should drink 6 to 8, eight-ounce glasses of non-caffeinated beverages daily. This helps to keep your mucus thin, making it easier for your body to cough it up. Some people find it easier to fill a container full of their daily fluid requirement in the morning and spread it out during the day. If you try this method, it is best to slow down your intake of fluids towards evening so you are not up all night urinating.

4. Decrease Sodium Intake

Eating too much salt causes your body to retain fluid. Too much fluid can make breathing more difficult. To reduce sodium intake, don't add salt when you cook and make sure you read all food labels. If the sodium content in food is greater than 300 milligrams of sodium per serving, don't eat it. If you are thinking of using salt substitutes, make sure you check with your doctor first, as some ingredients in them may be just as harmful as salt.

5. Wear Your Oxygen Cannula While Eating

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If your doctor has prescribed [continuous oxygen therapy](#) for you, make sure you wear your cannula when you eat. Since your body requires extra energy to eat and digest food, you will need the additional oxygen.

6. Avoid Overeating and Foods that Cause Gas

When you overeat, your stomach can feel bloated making breathing more difficult. Carbonated beverages or gas-producing foods such as beans, cauliflower or cabbage can also cause bloating. Eliminating these types of beverages and foods will ultimately allow for easier breathing.

7. Eat Smaller, More Frequent Meals that Are High in Calories

If you are underweight, eating smaller, more frequent meals that are higher in calories can help you meet your caloric needs more efficiently. This can also help you feel less full making it easier to breathe. Avoid low-fat or low-calorie food products. Supplement your meals with high-calorie snacks like pudding or crackers with peanut butter.

8. Include Enough Fiber in Your Diet

High fiber foods such as vegetables, dried legumes, bran, whole grains, rice, cereals, pasta and fresh fruit aid in digestion by helping your food move more easily through your [digestive tract](#). Your daily fiber requirement should be between 20 to 35 grams of fiber each day.

A Last Word About Nutrition

Food gives your body the fuel that it needs for energy. Your body requires energy for everything that you do, including breathing and eating. If you are having difficulty breathing while eating,

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You may be surprised to know that even indoor air can be polluted, sometimes more so than outdoor air. And because many people who have [COPD](#) or other chronic health conditions spend a great deal of time indoors, improving indoor air quality is especially important.

To help you improve the quality of your indoor air, here are 11 steps designed for those with COPD or other chronic illnesses.

1. Take Charge of Your Home

The first step towards improving indoor air quality is taking charge of your home.

This means identifying the three major categories of substances that can reduce the quality of your indoor air. They are:

- **Allergens** An allergen is a substance that causes your body's immune system to have an allergic response. Common sources of allergens include pollen (brought in from outdoors), pet dander, dust mites, cockroaches and rodents
- **Irritants** Irritants include substances that irritate your respiratory system without necessarily invoking an immune response. Common sources of irritants include paint (also wood finishes and stains), pesticides, tobacco smoke (including secondhand smoke), chemicals in cleaning products, or smells from new furniture.
- **Dangerous Chemicals** Although less common, dangerous chemicals can have a far greater impact on your health. Included as dangerous chemicals are carbon monoxide and radon, both which are highly poisonous and should be immediately eliminated if detected in your home.

3. Properly Ventilate Your Home

According to the Environmental Protection Agency (EPA), one of the most important ways that you can reduce the build-up of indoor air pollution is to properly ventilate your home. This can be done by opening windows, using exhaust fans that send their exhaust outside of the home, using window fans or running window air conditioners. Exhaust fans also benefit your home by minimizing moisture.

4. Tell Grandpa to Smoke His Pipe Outside

Tobacco smoke is an irritant and breathing [secondhand smoke](#) is extremely hazardous to your health. To improve your indoor air quality, don't allow anyone to smoke inside of your home.

Are you trying to quit smoking? Follow these [10 quit smoking tips](#) designed to help you kick the habit, for good.

5. Get Rid of Pesky Dust Mites

Did you know dust mites survive by eating dead skin cells of both people and pets? Invisible to the naked eye, these nasty little creatures are a major source of indoor air pollution and are usually found in all homes.

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Dust mites produce feces and have brittle shells that create dried particles. People can actually inhale these particles and cause damage to their lungs. You can reduce the dust mite population within your home with a few simple steps:

- Wash bed linens weekly
- Lower your indoor humidity level to below 50% (with a dehumidifier or air-conditioner)
- Keep all pets off furniture

6. Think About Wood Flooring

If you have always wanted hard-surface or wood flooring but could never justify the cost, knowing that hard-surface flooring is easier to maintain in an allergen-free state than carpet, may be just the excuse you've been looking for. Carpets are far less sanitary than hard-surface flooring, so if you choose to keep them, make sure you vacuum regularly.

7. What About an Air Filtration System?

Filtering your indoor air by way of a central system for the entire home is the single, most efficient way to improve your indoor air quality. If a central system is not an option, you may consider a single room air purifier. Remember, though, a single room purifier is just that; it purifies air in only one room. Because air moves about your home freely, air from a non-filtered room can easily make its way to a filtered room, defeating the purpose of your mission. With whichever system you choose, make sure it has a HEPA filter and beware of systems that generate ozone but claim to filter the air. Refer to [The Pros and Cons of Air Purification Systems](#) for more information.

8. Make Sure Your Home is Radon Free

A radioactive gas that can cause lung cancer, radon is colorless and odorless, so detecting it is impossible without testing for it. The EPA recommends a do-it-yourself testing kit that can assess radon levels in your home. For more information about radon, visit the EPA's [Consumer Guide to Radon Reduction](#).

9. Add a Few Houseplants to the Mix

Houseplants have an amazing ability to take you back to nature in the comfort of your own home. But did you know they also remove significant amounts of harmful toxicants from the air, such as carbon dioxide, benzene, formaldehyde, and ammonia? Scientists say that by using one houseplant for every 100 square feet of space in your home, you'll be on the way to cleaner indoor air. For a list of which air-purifying houseplants are most recommended, refer to [10 Houseplants that May Purify Indoor Air](#).

10. Watch Out for Household Chemicals

The final step in our management plan for improving indoor air quality requires that you become aware of the different types of products in your home that contain harsh chemicals. These include paints, varnishes, wax, and cleaning or cosmetic supplies. According to the EPA, everyday household items such as these contain dangerous chemicals that can cause harm to your lungs if inhaled. If you must purchase these types of products, do so in limited quantities.

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Know the Early Signs That Your Asthma Is Not Well Controlled

Before experiencing the classic signs of asthma, you may notice a number of changes that could clue you in that your asthma is worsening. These early warning signs include:

- Increased nighttime [cough](#)
- Cough or wheezing with physical activity
- Tiredness with activities that you normally could complete easily
- Decreases in your peak expiratory flow rate (PEFR)
- Restless sleep or waking up tired
- Worsening allergy symptoms like persistent runny nose, dark circles under your eyes, or itchy, inflamed skin

Understand the Classic Signs and Symptoms of Worsening Asthma

As asthma worsens, the airways narrow, become inflamed, and fill with mucus. Patients may experience the following symptoms:

- [Chest tightness](#)
- [Chronic cough](#)
- [Shortness of breath](#)
- [Wheezing](#)

If the early symptoms are not recognized and treated, you may begin to notice more classic asthma symptoms.

As your symptoms worsen and the airways narrow, you will notice increased difficulty completing your normal activities. You may also:

- Hear yourself wheezing
- Experience a cough that just won't go away (day or night)
- Have more trouble falling asleep and getting a good night's rest
- Have PEFRs well into the yellow zone
- Get less relief from your 'quick relief' medications

Know the Signs of a Possible Emergency

If your asthma symptoms become more severe, you will most probably not be able to perform your regular activities. At this stage, you will need to follow the actions described in the red zone of your asthma action plan and seek prompt medical attention, as these symptoms can represent potentially life-threatening asthma.

Emergent symptoms of asthma include:

- Severe wheezing while breathing both in and out
- Breathing very fast
- Getting short of breath while talking/having difficulty talking
- A feeling of impending doom or panic
- Profuse sweating, inability to perform PEFR, color changes in fingertips

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Why should I exercise?

Regular [exercise](#) has many benefits. Exercise, especially aerobic exercise, can:

- Improve your circulation and help the body better use oxygen
- Improve your [COPD](#) symptoms
- Build energy levels so you can do more activities without becoming tired or short of breath
- Strengthen your heart and cardiovascular system
- Increase endurance
- Lower [blood pressure](#)
- Improve muscle tone and strength; improve balance and joint flexibility
- Strengthen bones
- Help reduce body fat and help you reach a healthy weight
- Help reduce stress, tension, [anxiety](#), and [depression](#)
- Boost self-image and self-esteem; make you look fit and feel healthy
- Improve sleep
- Make you feel more relaxed and rested

Talk to your health care provider first

Always check with your health care provider before starting an exercise program. Your health care provider can help you find a program that matches your level of fitness and physical condition.

Here are some questions to ask:

- How much exercise can I do each day?
- How often can I exercise each week?
- What type of exercise should I do?
- What type of activities should I avoid?
- Should I take my medicine at a certain time around my exercise schedule?

What type of exercise is best?

Exercise can be divided into three basic types:

- **Stretching:** This is the slow lengthening of the muscles. Stretching the arms and legs before and after exercising helps prepare the muscles for activity and helps prevent injury and muscle strain. Regular stretching also increases your range of motion and flexibility.
- **Cardiovascular or aerobic:** This involves a steady physical activity using large muscle groups. This type of exercise strengthens the heart and lungs, and improves the body's ability to use oxygen. Over time, [aerobic exercise](#) can help decrease your heart rate and blood pressure, and improve your breathing (since your heart won't have to work as hard during exercise).
 - Aerobic exercises include walking, jogging, jumping rope, bicycling (stationary or outdoor), cross-country skiing, skating, rowing, and low-impact aerobics or water aerobics.
- **Strengthening:** This involves repeated muscle contractions (tightening) until the muscle becomes tired. Strengthening exercises for the upper body are especially helpful for people with COPD, as they help increase the strength of your respiratory muscles.

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How often should I exercise?

The frequency of an exercise program is how often you exercise. In general, to achieve maximum benefits, you should gradually work up to an exercise session lasting 20 to 30 minutes, at least three to four times a week. Exercising every other day will help you keep a regular exercise schedule.

What should I include in my program?

Every exercise session should include a **warm-up**, **conditioning phase**, and a **cool down**. The warm-up helps your body adjust slowly from rest to exercise.

A **warm-up** reduces the stress on your heart and muscles, slowly increases your breathing, circulation ([heart rate](#)), and body temperature. It also helps improve flexibility and reduce muscle soreness.

The best warm-up includes stretching, range of motion activities, and beginning of the activity at a low intensity level.

The **conditioning phase** follows the warm-up. During this phase, the benefits of exercise are gained and calories are burned. During the conditioning phase, you should monitor the intensity of the activity.

The intensity is how hard you are exercising, which can be measured by checking your heart rate. Your health care provider can give you more information on monitoring your heart rate.

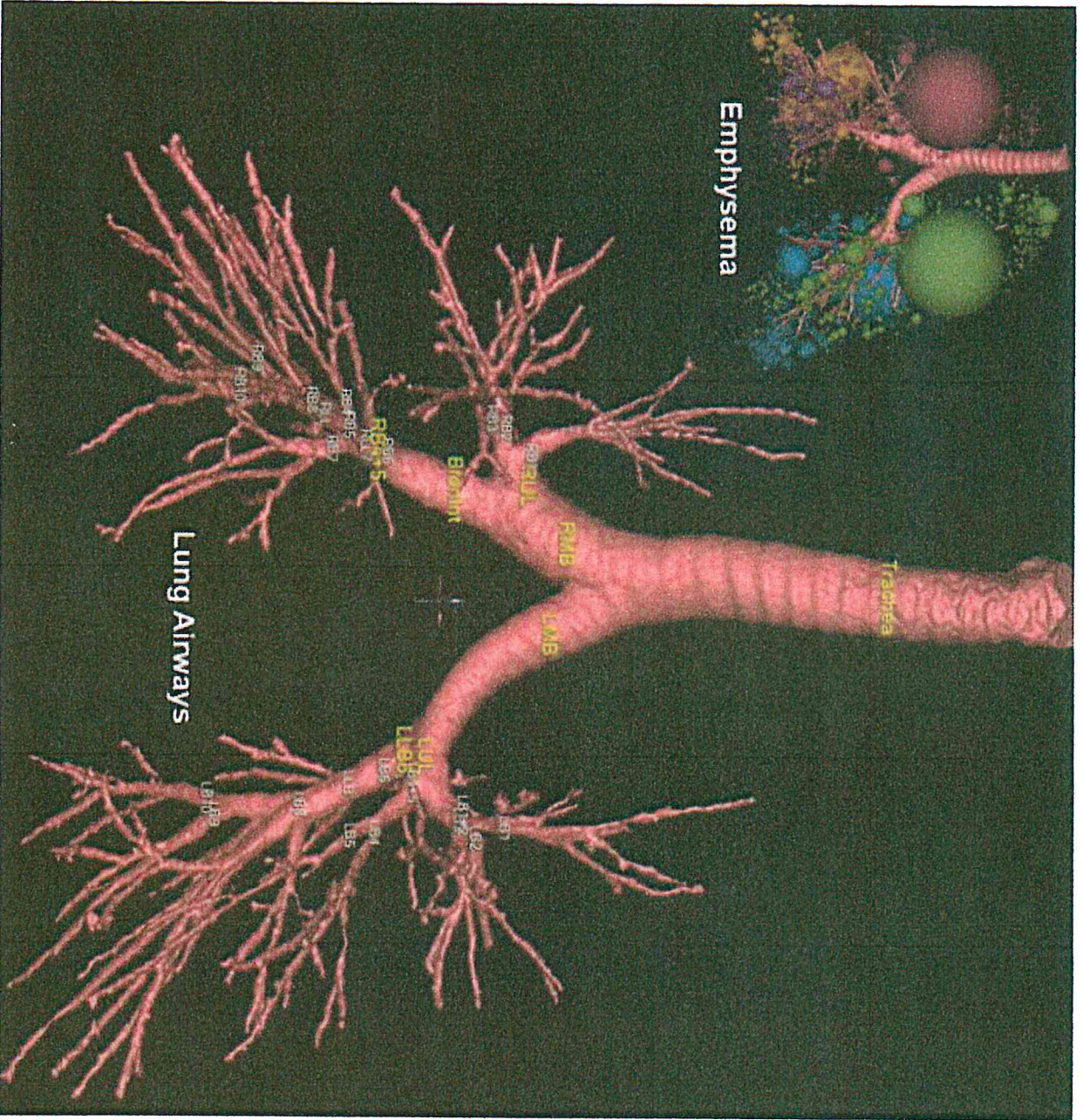
Over time, you can work on increasing the duration of the activity. The duration is how long you exercise during one session.

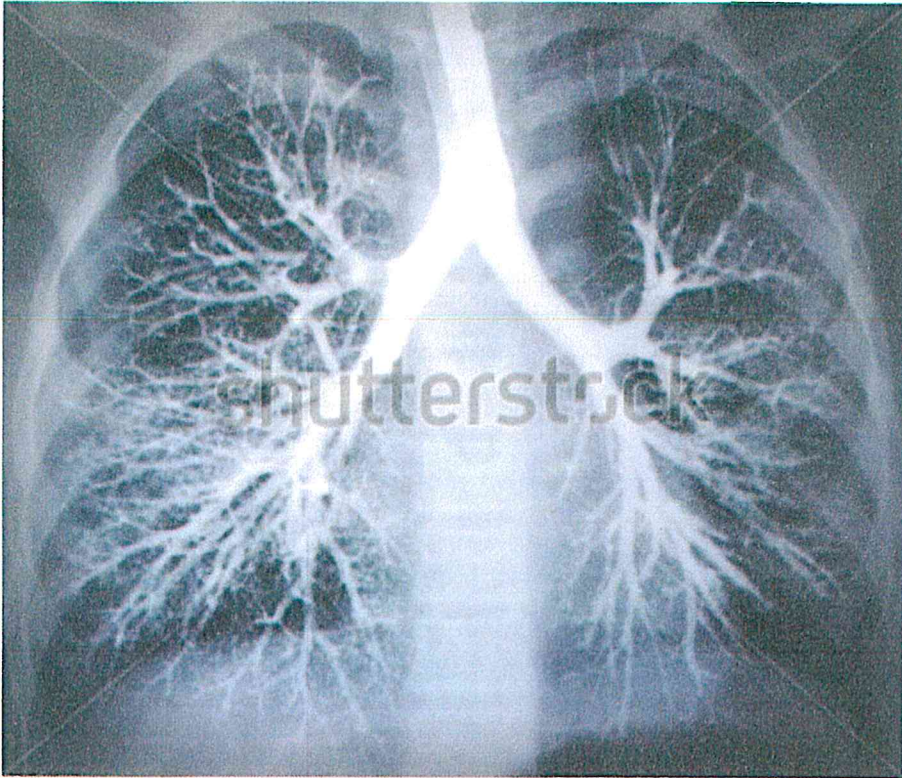
The **cool-down** phase is the last phase of your exercise session. It allows your body to gradually recover from the conditioning phase. Your heart rate and blood pressure will return to near resting values. Cool-down does not mean to sit down. In fact, do not sit, stand still, or lie down right after exercise. This might cause you to feel dizzy, lightheaded, or have heart palpitations (fluttering in your chest).

The best cool-down is to slowly decrease the intensity of your activity. You might also do some of the same stretching activities you did in the warm-up phase.

General exercise guidelines

- Gradually increase your activity level, especially if you have not been exercising regularly.
- Remember to have fun. Choose an activity you enjoy. Exercising should be fun and not a chore. You'll be more likely to stick with an exercise program if you enjoy the activity. Here are some questions you can think about before choosing a routine:
 - What physical activities do I enjoy?
 - Do I prefer group or individual activities?
 - What programs best fit my schedule?
 - Do I have physical conditions that limit my choice of exercise?





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Figure 1. Pharmacotherapy by COPD Stage of Severity [7]

I: Mild	II: Moderate	III: Severe
Post-bronchodilator: <ul style="list-style-type: none"> • FEV₁/FVC <0.70 • FEV₁ ≥80% predicted 	Post-bronchodilator: <ul style="list-style-type: none"> • FEV₁/FVC <0.70 • 50% ≤ FEV₁ <80% predicted 	Post-bronchodilator: <ul style="list-style-type: none"> • FEV₁/FVC <0.70 • 30% ≤ FEV₁ <50% predicted
Active reduction of risk factor(s); influenza vaccination Add short-acting bronchodilator (SABA/ipratropium) when needed		
Add regular treatment with one or more long-acting bronchodilators (when needed); add rehabilitation		Add inhaled glucocorticoids (when needed) to reduce exacerbations

Post-bronchodilator FEV₁ is recommended for the diagnosis and assessment of severity of COPD. SABA, short acting beta₂-agonist