

# Breathing Better

A handbook for people with  
chronic lung conditions





## **BREATH BETTER, DO MORE**

This handbook can help you learn how to breathe better, do more, and live well with lung disease.







## What's Inside:

---

<b>ABOUT CHRONIC LUNG DISEASES</b> .....	<b>4</b>
Normal lungs and breathing.....	4
Breathing with COPD .....	5
Other chronic lung conditions.....	6
<b>ASSESSMENT AND DIAGNOSIS</b> .....	<b>8</b>
Initial assessment.....	8
Pulmonary (Lung) Function Tests (PFTs) .....	9
<b>TREATMENTS FOR LUNG DISEASE</b> .....	<b>10</b>
Quitting smoking or vaping .....	10
Medications.....	12
<b>OXYGEN THERAPY</b> .....	<b>17</b>
Other medical devices in the home.....	21
Surgical options.....	23
Emotional health and mindfulness .....	24
Nutrition .....	27
Physical exercise .....	29
Benefits of pulmonary rehab .....	30
Getting started.....	32
Energy conservation.....	35
Preventing infection and exacerbation.....	36
<b>MY SYMPTOMS AND ACTION PLAN</b> .....	<b>38</b>
<b>RESOURCES</b> .....	<b>41</b>

# About Chronic Lung Diseases

Every cell in your body needs oxygen to live. Breathing (respiration) brings oxygen into the body and releases carbon dioxide, a waste product made by the body's cells. Here is a closer look at how this process works and how chronic obstructive pulmonary disease (COPD) and other chronic (long-lasting) lung diseases affect breathing.

## Normal lungs and breathing

### Parts of the respiratory system

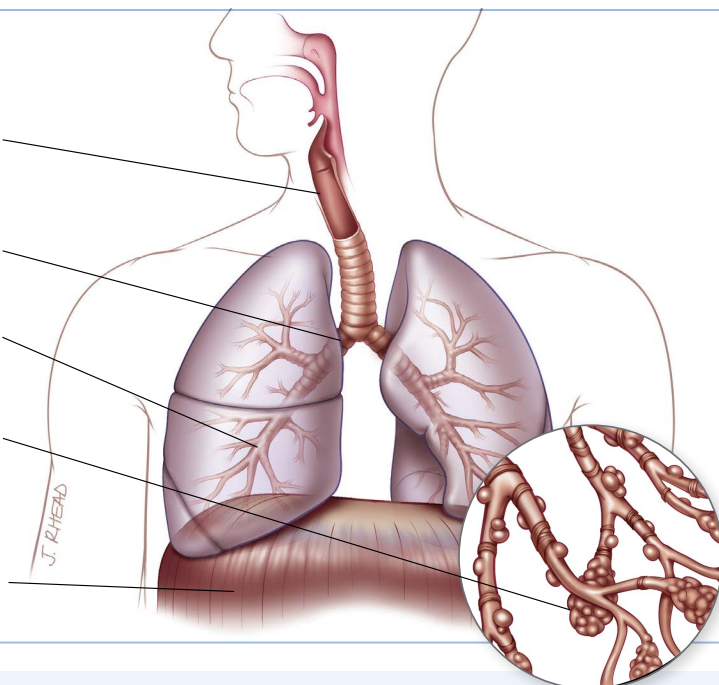
The **trachea** [TRAY-kee-uh] is the medical name for the windpipe.

The trachea branches into 2 large airways called **bronchial** [BRON-kee-uhl] **tubes**.

The bronchial tubes branch into smaller airways called **bronchioles** [BRON-kee-ohlz].

The bronchioles lead to many small, elastic air sacs called **alveoli** [al-VEE-uh-lie] deep within the lungs.

The **diaphragm** [DIE-uh-fram] is a large muscle that goes up and down to help move air into and out of the lungs.



## THE BREATHING PROCESS

### Breathing in

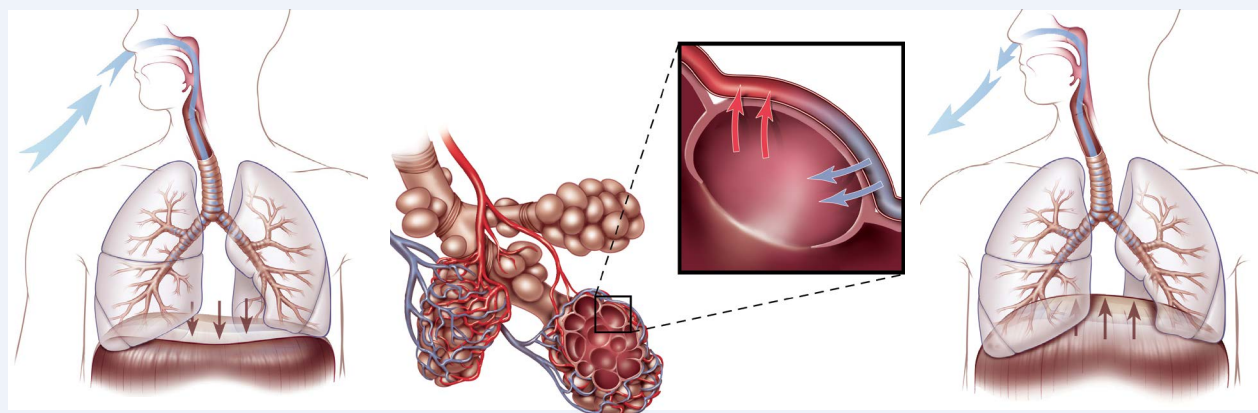
The diaphragm contracts (squeezes) to expand the lungs and pull air in through your nose and mouth. Air moves down through your airways to the alveoli.

### Exchanging O<sub>2</sub> and CO<sub>2</sub>

When the air reaches the alveoli, oxygen (O<sub>2</sub>) from the air passes into the blood vessels. At the same time, carbon dioxide (CO<sub>2</sub>) passes from the blood vessels into the alveoli.

### Breathing out

The diaphragm begins to move up (expand), pressing on your lungs and forcing CO<sub>2</sub> out of your airways through your nose and mouth.





## Breathing with COPD (chronic obstructive pulmonary disease)

COPD is a common lung disease. About 12 million U.S. adults have been diagnosed with COPD. Experts say that millions more have the disease but do not know they have it.

### COPD symptoms and causes

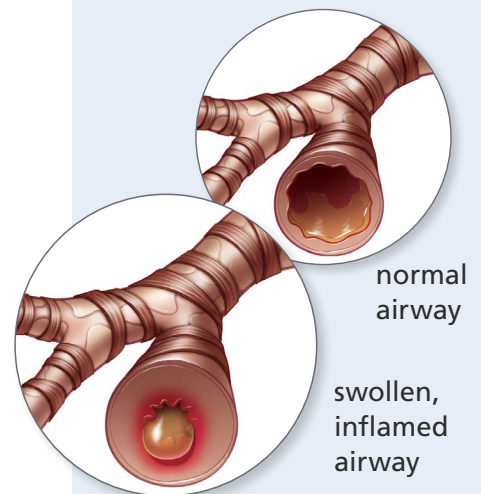
Symptoms of COPD include shortness of breath and coughing, especially during physical activity. You may also have a lot of mucus with your cough, and chronic wheezing (faint whistling sound when you breathe). As your COPD worsens, you may also have fatigue, ankle swelling, and poor concentration.

COPD takes many years to develop. Most people seek medical help for their symptoms when they are between 50 and 70 years old. The most common cause of COPD is cigarette smoking. Long-term breathing of certain dusts, fumes, and chemicals can also cause COPD. However, not all COPD comes from breathing bad air. Previous lung illness and family health history can also play a role. For example, people who do not have enough alpha-1 antitrypsin [AN-tee-trip-sn] have an inherited form of emphysema [em-fah-SEE-mah].

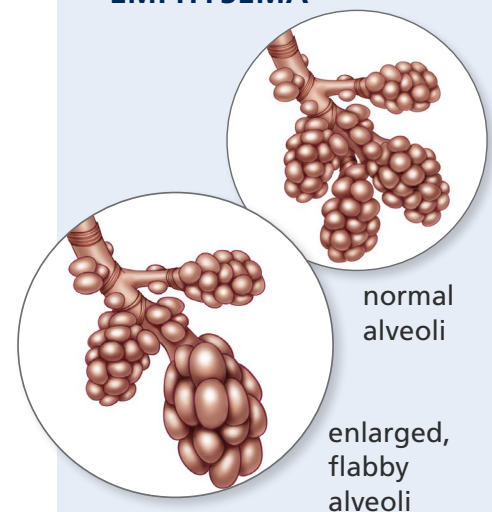
Several diseases are also considered COPD. These include cystic [SIS-tik] fibrosis [fye-BROH-sis], bronchiectasis [bron-kee-EK-tuh-sis], chronic bronchitis [bron-KYE-tuhs], and emphysema. Many people with COPD can have a combination of these. Here's what happens with each:

- **With cystic fibrosis**, the airways become choked because the body is making too much mucus. This is caused by a genetic disorder that mainly affects the lungs and pancreas.
- **With bronchiectasis**, the airways become thickened and damaged from chronic inflammation and infection. Mucus is unable to drain effectively and can cause more infections. This cycle of infections changes the shape of the airways and they become obstructed (clogged).
- **With chronic bronchitis**, the airways are swollen and inflamed and tend to produce too much mucus. The swelling and excess mucus narrow the airways and make breathing difficult.
- **With emphysema**, the bronchioles and alveoli are damaged and lose their normal elasticity. Like worn-out balloons, the alveoli become over-expanded. They do not contract (squeeze) to push air out when you breathe out. This limits the oxygen going into your bloodstream and keeps carbon dioxide from going out. These problems are worsened when the blood vessels around the alveoli are also damaged.

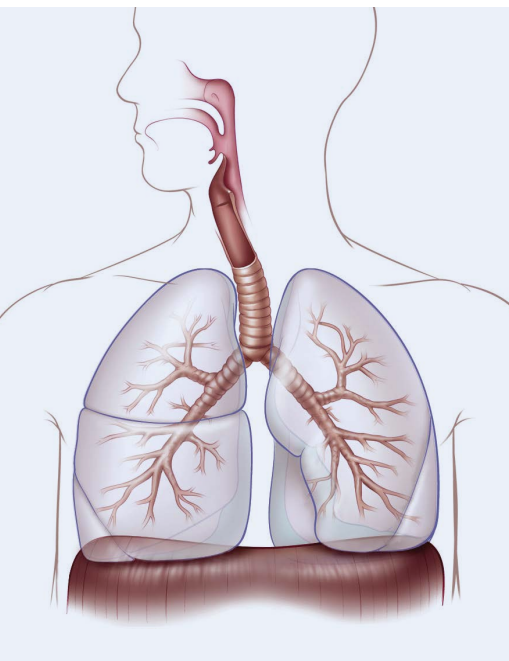
### CHRONIC BRONCHITIS



### EMPHYSEMA







## COPD and your diaphragm

In normal breathing, the strong, dome-shaped diaphragm muscle goes up and down to help move air in and out of the lungs. But with COPD, the air trapped in the damaged airways and air sacs keeps your lungs over-expanded. The lungs press down on the diaphragm, flattening its normal curve.

A flattened diaphragm is weak. It cannot move up and down easily, so it isn't much help moving air in and out of your lungs. To make up for this, people with COPD tend to use their neck and chest muscles to help with the work of breathing. This is a tiring way to breathe.

## Other chronic lung conditions

In addition to COPD, other chronic lung conditions affect normal breathing and may require the ongoing management described in this booklet. A few of these conditions are described below. Keep in mind that these descriptions are only summaries. Your healthcare team can give you more complete information about your specific condition.

### Interstitial lung disease (pulmonary fibrosis)

The diagnosis of interstitial [in-ter-STISH-uhl] lung disease includes several conditions characterized by:

- Damage to lung tissue.
- Inflammation of the walls of the alveoli.
- Eventual scarring of the tissues between the alveoli, called the interstitium [in-ter-STISH-ee-um]. This scarring, called fibrosis, is why interstitial lung disease is sometimes called pulmonary fibrosis.

Interstitial lung disease stiffens the lungs and makes it hard to breathe. A person with interstitial lung disease may also have a dry cough and wheezing. The damage and scarring of interstitial lung diseases can be caused by many different factors or conditions. Exposure to pollutants—inhaling metal dust or asbestos, for example—can trigger inflammation and lead to scarring. So can certain medications, viruses, and autoimmune disorders. Yet many cases of interstitial lung disease have no known cause. These are called idiopathic [id-ee-oh-PATH-ik] cases.

Examples of over 200 types of interstitial lung disease include:

- **Idiopathic pulmonary fibrosis (IPF).** IPF is the most common type of interstitial lung disease. “Idiopathic” means that the cause of the disease is not known.
- **Sarcoidosis** [sar-koy-DOH-sis]. This is inflammation that causes granulomas (tiny, grain-like lumps) to form. Granulomas in the lungs block the alveoli and limit oxygen absorption.
- **Hypersensitivity pneumonitis (HP).** This is inflammation caused by long-term, repeated inhalation of certain fungal, bacterial, or other irritating particles.



## Pulmonary hypertension

Pulmonary hypertension is high blood pressure in the arteries that carry blood from your heart to your lungs. The extra pressure comes from narrowing, scarring, and blood clots in these important blood vessels. There are several types of pulmonary hypertension and many different causes, including other lung diseases. Pulmonary hypertension causes symptoms such as shortness of breath, tiredness, chest pain, and a racing heartbeat. As the disease worsens, blood flow from the heart through the lungs is limited. Symptoms become worse and may eventually prevent most physical activity.

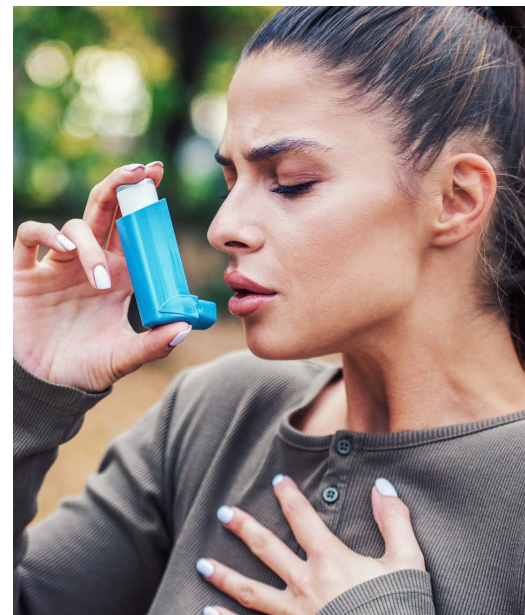
## Asthma

Like COPD, asthma is a common lung disease. It is also caused by inflammation in the airways. Symptoms include shortness of breath, coughing, and wheezing. Although a person may have both COPD and asthma, they have the following differences:

- Asthma affects both children and adults. COPD mostly affects older adults.
- Asthma symptoms tend to vary from day to day and are often “triggered” by allergies. COPD symptoms are more constant.
- Asthma inflammation usually responds well to treatment. And when it is well-controlled with treatment, asthma won’t permanently damage the lungs.
- Asthma can be serious, but with treatment most people can lead active and normal lives.

### Living with COPD

COPD doesn’t go away on its own and it cannot be cured. However, there are many things you can do to help control its symptoms, slow its progression, and feel better. The next sections of this booklet explain how COPD is treated and—most importantly—what you can do to manage it.





# Assessment and Diagnosis

In this section you will learn about the techniques, tests, and methods used to assess and treat chronic lung disease. Your doctor can give you more detailed information as needed.

## Initial assessment

To diagnose COPD or another lung disease, your doctor will begin with a medical history and physical exam. Imaging tests and lung procedures may also be part of this initial assessment.

- **Medical history.** Your doctor asks questions about your symptoms, family health history, and lifestyle. This information gives the doctor clues about what may be causing the breathing problem or making it worse.
- **Physical exam.** Your doctor will check for changes in your skin or nail color, listen to your chest as you breathe, and look for other signs that may provide information about your health.
- **Imaging tests.** Your doctor may order imaging tests to get pictures of the inside of your chest and lungs. A chest x-ray is a common imaging test. Other imaging tests include echocardiograms [eh-koh-CAR-dee-oh-gramz] and CT scans.



## YOUR CARE TEAM

Your care team will work together to diagnose and manage your lung condition.

- **Your primary care provider.** This is the person you usually see for health problems. They could be an internist, family practice doctor, physician assistant, or nurse practitioner.
- **Your pulmonologist** [pull-muh-NALL-uh-jist]. This is a doctor who specializes in lung and breathing problems.
- **Respiratory therapist.** A respiratory therapist (RT) can help your doctors assess your lung problem and teach you how to manage it. RTs often lead pulmonary "rehab" (rehabilitation) programs.
- **Pharmacist.** This is the person who dispenses and helps explain your prescription medications.
- **Care manager.** A care manager can provide support and education for self-management.

As you work with your care team, keep in mind that you are the most important person on the team. You'll need to learn about your condition, communicate with your team, and follow your daily treatment plan.

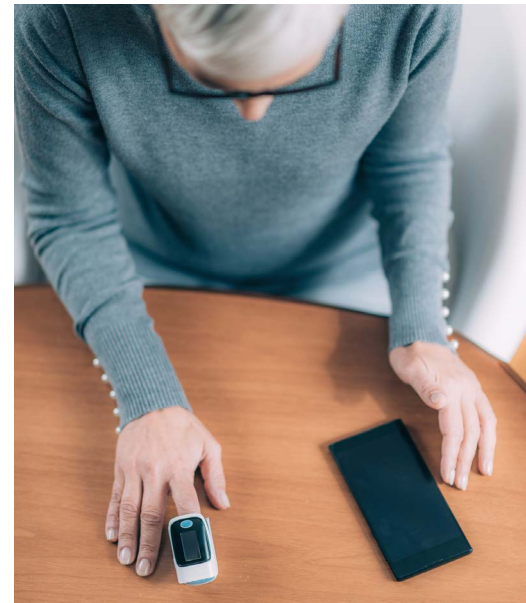




## Pulmonary (Lung) Function Tests (PFTs)

Lung function tests are important to all phases of care. They can help your doctor diagnose a lung condition, check your response to treatment, and measure your condition over time. Common types of PFTs are:

- **Breathing tests** to measure the size of your lungs, how much air you can breathe in and out, and how fast you can breathe air out. Examples include spirometry [spy-ROM-i-tree] and lung volume measurement.
- **Oxygen level tests** to see how well your lungs deliver oxygen to your bloodstream. Your doctor will use these tests to determine if you need to have oxygen therapy.
- **Pulse oximetry** [ok-SIM-i-tree] to measure oxygen in your blood.
- **Overnight oximetry** to check your oxygen levels during sleep and help assess for a sleep disorder.
- **Arterial blood gas** test to measure the oxygen and carbon dioxide in a blood sample taken from your artery.
- **Exercise tests**, like a 6-minute walk test, to help your doctor see how your heart and lungs respond to the stress of physical activity. They can also help your doctor determine the severity of your condition.
- **Lung procedures** to look inside the lungs and chest or remove tissue for testing. For example, a bronchoscopy [bron-KOS-kuh-pee] allows the doctor to see inside your airways and remove a sample of the tissue. A biopsy [BY-op-see] is done to obtain a tissue sample from the lungs or chest wall.



### PULSE OXIMETRY

A pulse oximeter is a small device that is placed on your fingertip. It checks your heart rate (pulse) and sends infrared light into the capillaries in your fingertip to estimate your blood oxygen levels.



# Treatments for Lung Disease

Many people do not know they have a chronic lung disease until after their first major flare-up. Your healthcare providers often refer to a flare-up as an **exacerbation** [ex-az-er-BAY-shun]. Exacerbations can have a negative impact on both quality and quantity of life. **Treatment for lung disease and exacerbations will depend on your condition, daily habits, and overall health.**

Generally, treatment includes:

- Quitting smoking or vaping (if you smoke or vape)
- Medications
- Oxygen therapy
- Other home medical devices, like non-invasive ventilation (NIV) or positive airway pressure (PAP)
- Breathing techniques
- Pulmonary rehab and physical exercise
- Nutrition counseling
- Preventing infection and worsening of symptoms
- Surgical options (lung reduction, endobronchial valves, or transplantation)

Ask your doctor about these treatments and seek support from your medical team as needed.

## Quitting smoking or vaping

The most important thing you can do for your lung health is to quit smoking or vaping. Quitting now will help you:

- **Prevent further damage to your lungs.** Every cigarette you do not smoke is damage you do not do.
- **Slow the deterioration of your lungs.** You can slow the progression of the disease.
- **Improve your symptoms.** Your coughing, sinus congestion, fatigue, and shortness of breath will decrease.
- **Lower your chance of stroke, heart disease, and lung cancer.** Smoking hurts your health in many ways.
- **Stay out of the hospital.** Studies show that episodes of severe breathing problems (exacerbations) decrease when a person quits smoking or vaping.





## MEDICATIONS TO HELP YOU QUIT SMOKING OR VAPING

TYPE	EXAMPLES	WHAT THEY DO	ADVANTAGES	DISADVANTAGES
Gum	Nicorette or Generic	<ul style="list-style-type: none"> <li>• Mouth, jaw soreness</li> <li>• Hiccups</li> <li>• Heartburn</li> <li>• Excess saliva in mouth</li> <li>• Rapid nicotine release</li> </ul>	<ul style="list-style-type: none"> <li>• Might delay weight gain</li> <li>• Can be titrated (measured) to manage withdrawal symptoms</li> </ul>	<ul style="list-style-type: none"> <li>• Need for frequent dosing</li> <li>• May interfere with dental work</li> <li>• Specific chewing technique needed</li> </ul>
Lozenge	Nicorette or Generic	<ul style="list-style-type: none"> <li>• Mouth irritation</li> <li>• Nausea</li> <li>• Hiccups</li> <li>• Heartburn</li> <li>• Headache</li> <li>• Sore throat</li> <li>• Dizziness</li> </ul>	<ul style="list-style-type: none"> <li>• Might delay weight gain</li> <li>• Can be titrated to manage withdrawal symptoms</li> <li>• Can be used with other nicotine replacement therapies (NRTs)</li> </ul>	<ul style="list-style-type: none"> <li>• Need for frequent dosing</li> <li>• Gastrointestinal upset</li> </ul>
Transdermal patch	Nicorette CQ or Generic	<ul style="list-style-type: none"> <li>• Skin irritation</li> <li>• Headache</li> <li>• Sleep disturbances</li> </ul>	<ul style="list-style-type: none"> <li>• Once-daily dosing</li> <li>• Discrete</li> <li>• Can be used in combination with other NRTs</li> </ul>	<ul style="list-style-type: none"> <li>• When used alone, may not manage acute withdrawal symptoms</li> <li>• Not recommended for individuals with skin conditions</li> </ul>
Nasal Spray	Nicotrol-NS	<ul style="list-style-type: none"> <li>• Nasal, throat irritation</li> <li>• Eye irritation</li> <li>• Sneezing</li> <li>• Cough</li> <li>• Headache</li> <li>• Runny nose</li> </ul>	<ul style="list-style-type: none"> <li>• Can be titrated to manage withdrawal symptoms</li> <li>• Can be used in combination with other NRTs</li> </ul>	<ul style="list-style-type: none"> <li>• Need for frequent dosing</li> <li>• Might be uncomfortable to administer in public</li> <li>• Not recommended for use with severe reactive airway disease or chronic nasal disorders</li> </ul>
Oral Inhaler	Nicotrol Inhaler	<ul style="list-style-type: none"> <li>• Mouth, throat irritation</li> <li>• Cough</li> <li>• Headache</li> <li>• Runny nose</li> <li>• Hiccups</li> <li>• Heartburn</li> </ul>	<ul style="list-style-type: none"> <li>• Can be titrated to manage withdrawal symptoms</li> <li>• Mimics hand-to-mouth action</li> <li>• Can be used in combination with other NRTs</li> </ul>	<ul style="list-style-type: none"> <li>• Need for frequent dosing</li> <li>• Can be costly</li> <li>• Cartridges are less effective in less than 60°F</li> </ul>
Oral Tablet	Bupropion-SR (Zyban) or Generic	<ul style="list-style-type: none"> <li>• Insomnia</li> <li>• Dry mouth</li> <li>• Nervousness</li> <li>• Nausea</li> <li>• Dizziness</li> <li>• Constipation</li> <li>• Rash</li> <li>• Seizures</li> <li>• Mood disorders</li> </ul>	<ul style="list-style-type: none"> <li>• Twice-daily oral dosing</li> <li>• Might delay weight gain</li> <li>• Might benefit patients with depression</li> <li>• Can be used in combination with other NRTs</li> </ul>	<ul style="list-style-type: none"> <li>• Increased seizure risks</li> <li>• Consult with physician about other severe risks</li> </ul>
	Varenicline (Chantix)	<ul style="list-style-type: none"> <li>• Insomnia</li> <li>• Nausea</li> <li>• Constipation</li> <li>• Flatulence</li> <li>• Vomiting</li> <li>• Mood disorders</li> </ul>	<ul style="list-style-type: none"> <li>• Twice-daily oral dosing</li> <li>• Offers different mechanism of action for those that have failed other treatment options</li> </ul>	<ul style="list-style-type: none"> <li>• Can be costly</li> <li>• Patient should be monitored for mood disturbances/disorders</li> </ul>





## WHY IS IT IMPORTANT?

- Medication can help most people with chronic lung disease. Many people take a combination of medications. Quick-relief medications are taken when needed to relieve episodes of severe shortness of breath.
- Daily medications help control symptoms.
- Other medications taken for short periods of time may treat infections or exacerbations (flare-ups) of your lung disease symptoms.

## Medications

Understanding your medication—and taking it as directed—is an important part of your treatment. This section explains the different types of medications, what they do, and how they're used and taken.

### Medication basics

- **Make sure you understand exactly how to take your medication.** Some medications need to be taken every day, while others are used only when your symptoms get worse. Many lung medications are inhaled (breathed in), but others come in pills. Make sure you know when, why, and how to use each of your medications. Use the **My Plan** section of this booklet or an electronic app to help you keep track, and ask your healthcare provider if you have any questions.
- **Tell your doctor or pharmacist if you are taking medications for any other health conditions.** Include any over-the-counter remedies, inhalers, injections, herbs, or vitamin and mineral supplements. They can help you avoid harmful interactions between drugs.
- **Be consistent and stay on schedule.** Set an alarm to remind you when it is time to take your medication. Or, take your medication at the same time you do other regular activities. For example, take it right before brushing your teeth in the morning or while watching the evening news.
- **Watch your refills.** Order more medication when you are down to a 2-week supply. Pharmacies sometimes have a delay in filling orders, so it is important to avoid running out of your prescription. For convenience, ask your pharmacist about getting a 90-day supply of medication or about getting your prescriptions by mail.

### Medication devices

- **Inhaler.** Many respiratory medications come in small, hand-held devices called inhalers. These deliver medicine in fixed, measured amounts. There are several types of inhalers:
  - **Metered dose inhaler (MDI).** This type of inhaler comes in a pressurized canister that should be used with a tube-like attachment called a **spacer** and sprays a mist.
  - **Dry powder inhaler (DPI).** The medication in this inhaler is a dry powder. It does not require a **spacer** to deliver the medication. Your inspiratory [in-SPY-ruh-tor-ee] flow should be tested before starting a DPI because some people do not have enough breath to trigger this device.

## How to use an MDI (metered dose inhaler)

- 1 Remove the cap from the inhaler, and from the spacer if necessary.
- 2 If necessary, prime the inhaler (squirt a puff into the air). Check the package insert for specific instructions. Some MDIs do not need to be primed, but others need 1 or more priming puffs.
- 3 If you are using a spacer, insert the inhaler into the rubber end of the spacer.
- 4 Shake the inhaler well immediately before each puff to mix and warm the contents.
- 5 Breathe out.
- 6 Place the mouthpiece fully into mouth between the teeth, holding the inhaler upright and closing the lips around the mouthpiece.
- 7 Press the canister down to release a puff of medication.
- 8 Breathe in deeply and slowly through your mouth for 3 to 5 seconds.
- 9 Hold your breath for 5 to 10 seconds or however long you can.
- 10 Remove the spacer from your mouth and breathe out slowly.
- 11 Repeat steps 4 through 10 for each inhalation prescribed by your doctor.

## Cleaning your inhaler and spacer

- Clean your inhaler and spacer at least once a week to keep medication from building up on them.
- Different inhalers need to be cleaned in different ways. Always follow the manufacturer's guidelines for cleaning.
- How to clean an MDI and spacer:
  - Remove the metal canister and rinse the plastic case and cap thoroughly in warm, running water. Be sure to clear medication build-up from the spray nozzle.
  - Thoroughly dry the plastic case and cap.
  - Gently replace the canister in the case with a twisting motion, and put the cap back on the mouthpiece.
  - All spacers need to be cleaned regularly. Check the manufacturer's guidelines for your type of spacer.



### MDI TIPS:

If your symptoms do not improve with medication, it might be because you are not using the device properly.

For example, if you aren't using your inhaler correctly, most of the medication will end up in your mouth and throat instead of your lungs.

To make sure you are getting the most from your lung medication:

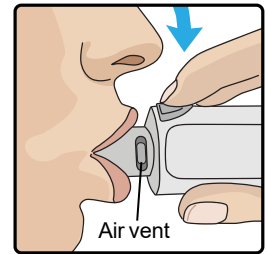
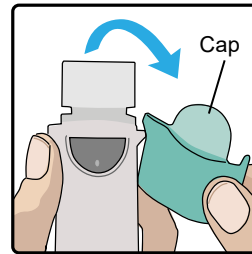
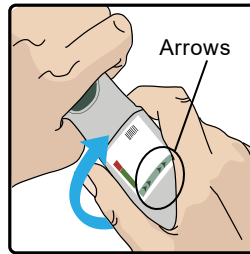
- Always follow the instructions for your specific brand of inhaler.
- Have your doctor or asthma educator check to make sure you are using your device correctly.
- If you are using an inhaler with a steroid, rinse your mouth with water after each use.



## How to use a soft mist inhaler (Respimat)

### T – Turn: Keep the cap closed.

Turn the clear base in the direction of the arrows until it clicks (about half a turn).



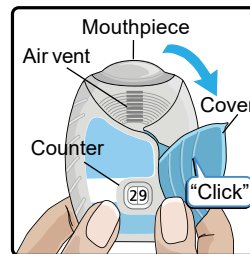
### O – Open: Open the cap fully.

### P – Press: Exhale slowly and fully.

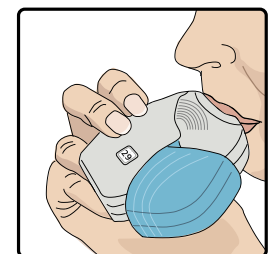
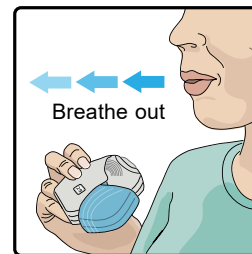
Close your lips around mouthpiece and point the inhaler to the back of the throat. Press the dose-release button while inhaling slowly and deeply through the mouth. Hold your breath for 10 seconds (or as long as comfortable). Repeat **TOP** (turn, open, press) for a total of 2 puffs. Close the inhaler cap.

## How to use an Ellipta DPI

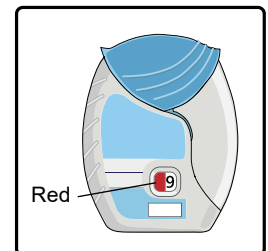
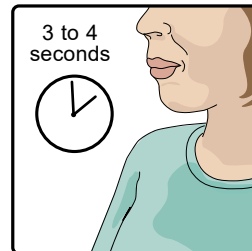
1 Open the cover of the inhaler until there is a click. The counter will go down by 1 number. If this does not happen, the inhaler will not deliver the medication.



2 Turn away from the mouthpiece and breathe out.



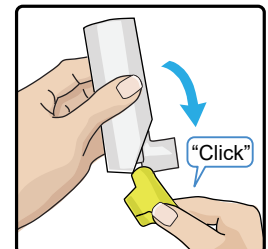
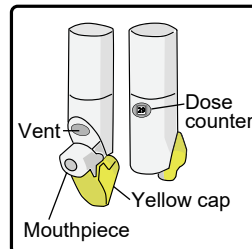
3 Close your lips firmly around the curved mouthpiece, then take 1 long, steady, deep breath in through your mouth. Do not block the air vent.



4 Remove the inhaler from your mouth and hold your breath for about 3 to 4 seconds. You may not taste or feel the medication, even if using the inhaler correctly.

5 Breathe out slowly and gently.

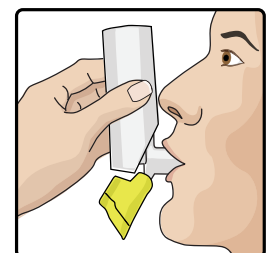
6 Close the inhaler by sliding the cover up and over the mouthpiece as far as it will go.



## How to use a Resplick DPI

- Hold the inhaler upright and open the yellow cap all the way until it clicks.

- Turn away from the mouthpiece and breathe out. Close your lips tightly around the mouthpiece, then breathe in quickly and deeply. Do not block the vent. Remove the inhaler from your mouth and hold your breath for 10 seconds. (Patients may not taste or feel the medication even if the inhaler was used correctly.) **Do not use a spacer with this device.**



- Close the yellow cap after each inhalation.

## How to use a nebulizer

A nebulizer uses forced air to turn medication into a fine mist so that it can easily be breathed into the lungs. For some people—and with some medications—nebulizers are the most effective way of delivering inhaled medications.

A nebulizer has the following parts:

- A compressed air machine
- A cup to hold the medication
- Thin plastic tubing that connects the medication cup to the compressed air machine
- A mouthpiece used to breathe in the mist



## Steps to using a nebulizer

- 1 Fill the medicine cup with the prescribed amount of medicine.
- 2 Connect the tubing.
- 3 Insert the mouthpiece on top of the medicine cup.
- 4 Sit up straight, and hold the medicine cup upright.  
Put the mouthpiece in your mouth and turn the machine on.
- 5 Breathe deeply and slowly through your mouth until the mist stops.  
It is normal for a small amount of liquid to remain in the cup.

## Respiratory medications

There are several types of inhaled medications used for chronic lung disease. Your physician will order these medications based on how severe your disease is and how often you have exacerbations (flare-ups).

- **Short-acting beta agonist (SABA) or muscarinic (SAMA)**  
(Usually lasts 4 to 6 hours)
- **Long-acting beta agonist (LABA) or muscarinic (LAMA)**  
(Lasts from 12 to 24 hours)
- **Inhaled corticosteroid (ICS)**  
(Lasts for up to 12 hours)
- **Combination medications:**
  - LABA/LAMA
  - LABA/ICS
  - LABA/LAMA/ICS





## COPD MEDICATIONS

TYPE	EXAMPLES	WHAT THEY DO	SIDE EFFECTS
<b>QUICK RELIEF: SABA</b>	Albuterol, Ventolin, ProAir, Proventil *Albuterol, *DuoNeb, *Xopenex	Gives short-acting quick relief of symptoms	Nervousness, trembling, heart palpitations, muscle cramps, headaches
<b>QUICK RELIEF: SAMA</b>	Atrovent *Ipratropium	Short-acting bronchodilation by relaxing the airways	Dry mouth, constipation, urinary retention, nausea, increased heart rate, dizziness
<b>LAMA</b>	Spiriva, Incruse *Yupelri	Blocks receptors so airways will not contract or tighten	Dry mouth, constipation, urinary retention, increased heart rate, hot flushed skin, agitation, delirium
<b>LABA</b>	Serevent, Foradil, Striverdi	Long-acting bronchodilation by relaxing the airways (12 hours)	Nervousness, trembling, heart palpitations, muscle cramps, headaches
<b>INHALED CORTICOSTEROIDS</b>	QVAR, ArmonAir, Arnuity, Flovent *Pulmicort	Decreases swelling in the airways	Dry or sore throat, thrush, hoarse voice, cough, increased risk of infection, mood or behavioral changes, increased blood sugar
<b>COMBINATION: LABA + LAMA</b>	Bevespi, Stiolto, Anoro, Utibron *Brovana/Perforomist + Yupelri	Gives longer bronchodilation by relaxing the airway	Dry mouth, constipation, urinary retention, tremor, increased heart rate, increased blood sugar, muscle cramps
<b>COMBINATION: LABA + ICS</b>	Symbicort, Dulera, AirDuo, Advair, Breo, Wixela *Brovana/Perforomist + Pulmicort	Helps with bronchodilation and control of swelling in the airways	Dry mouth, constipation, urinary retention, increased heart rate, hot flushed skin, agitation, delirium
<b>COMBINATION: LABA+LAMA+ICS "TRIPLE THERAPY"</b>	Trelegy, Breztri *Yupelri + Brovana + Pulmicort	Longer-acting medication; opens airways by relaxing muscles around them while controlling swelling inside	Runny nose, dry sore throat, thrush, hoarse voice, cough, urinary tract infections, muscle cramps or weakness, mood or behavioral changes, headache, increased blood sugar
<b>ORAL STEROIDS</b>	Prednisone	Reduces inflammation and allergic reactions; powerful medications that affect the whole body	Fluid retention, increased blood pressure, increased blood sugar, mood or behavioral changes, weight gain, dizziness, upset stomach
<b>ORAL ANTIBIOTICS</b>	Amoxicillin or Doxycycline	Treats bacterial infections in the lungs; should be taken for a short time only	Nausea, vomiting, diarrhea, rash, bloating, headache, loss of appetite
<b>PHOSPHODIESTERASE INHIBITOR (PDE4)</b>	Daliresp	Blocks PDE4 which can lead to inflammation in the lungs	Nausea, diarrhea, loss of appetite, weight loss, sleep disturbances, headache

# Oxygen Therapy

Not everyone with lung disease needs oxygen therapy, but many people do. If your doctor has prescribed oxygen therapy for you, read this section to learn about oxygen therapy and get tips for using oxygen at home and on the go.

## Oxygen therapy basics

The goal of oxygen therapy is to get your **blood oxygen level**—the amount of oxygen in your blood—as close to normal as possible. If your doctor has prescribed oxygen for you, it is because tests have shown that you have low blood oxygen at rest, during exercise, or at night. It is common for oxygen levels to drop during sleep, so many people need to use oxygen at night. Others use oxygen only during exercise or at certain altitudes (distance above sea level). Many people use oxygen at all times. Most people find that it improves their lives.

A nasal cannula is tubing that delivers the oxygen to your nose from the tank or concentrator. It is generally 7 feet long and can be connected to up to 50 feet of extension tubing. Some people connect to the delivery system through a device inserted in their throat called a transtracheal [trans-TRAY-kee-uhl] catheter [KATH-eh-tur].



### OXYGEN DELIVERY SYSTEMS

The table on the next page shows some options for oxygen delivery and describes how they're often used and combined.

Your doctor will recommend an oxygen system based on your lifestyle, health, and preferences.

### WHY IS OXYGEN THERAPY IMPORTANT?

Many studies show that if you have low oxygen levels, oxygen therapy can:

- Increase your ability to exercise and be active
- Improve your memory, concentration, and problem-solving
- Boost your mood
- Help your body fight colds and other illnesses
- Improve and prolong your life



## Home oxygen devices

See the table below for descriptions of some of the different oxygen delivery methods. Your doctor will recommend an oxygen delivery system based on your lifestyle, need, and preferences.

DELIVERY DEVICE	DESCRIPTION	TYPICAL USE									
<p><b>Standard oxygen concentrator</b></p> 	<p>This machine plugs into an electrical outlet and works by removing nitrogen from the air to make and deliver 95% pure oxygen. Although the concentrator has wheels, it generally stays in one place in the home. You set the flow rate with a knob on the machine, and connect to the machine with long tubing.</p>	<p>For use in the home</p>									
<p><b>Compressed gas tanks</b></p> 	<p>Compressed gas tanks are delivered to your home by a service. A <b>regulator</b> placed on the tank controls the flow rate and determines whether the flow is continuous or pulsed. Tanks come in four sizes—B, C, D, E—with the E tanks being the largest. Your tanks are portable when you use a wheeled caddy (for larger tanks) or a shoulder carrier (for smaller tanks).</p> <table border="0" data-bbox="500 970 1188 1306"> <tr> <td style="text-align: center;"><b>C CYLINDER</b> 4.4 lb Shoulder bag</td> <td style="text-align: center;"><b>D CYLINDER</b> 6.1 lb Shoulder bag</td> <td style="text-align: center;"><b>E CYLINDER</b> 9.3 lb Rolling cart</td> </tr> <tr> <td style="text-align: center;"><b>C Cylinder Duration</b> (Continuous regulator)</td> <td style="text-align: center;"><b>D Cylinder Duration</b> (Continuous regulator)</td> <td style="text-align: center;"><b>E Cylinder Duration</b> (Continuous regulator)</td> </tr> <tr> <td style="text-align: center;">1 LPM = 2.5 hrs 2 LPM = 1.25 hrs 3 LPM = .75 hrs</td> <td style="text-align: center;">1 LPM = 5 hrs 2 LPM = 2.5 hrs 3 LPM = 1.25 hrs</td> <td style="text-align: center;">1 LPM = 10 hrs 2 LPM = 5 hrs 3 LPM = 3.4 hrs</td> </tr> </table>	<b>C CYLINDER</b> 4.4 lb Shoulder bag	<b>D CYLINDER</b> 6.1 lb Shoulder bag	<b>E CYLINDER</b> 9.3 lb Rolling cart	<b>C Cylinder Duration</b> (Continuous regulator)	<b>D Cylinder Duration</b> (Continuous regulator)	<b>E Cylinder Duration</b> (Continuous regulator)	1 LPM = 2.5 hrs 2 LPM = 1.25 hrs 3 LPM = .75 hrs	1 LPM = 5 hrs 2 LPM = 2.5 hrs 3 LPM = 1.25 hrs	1 LPM = 10 hrs 2 LPM = 5 hrs 3 LPM = 3.4 hrs	<p>Outside the home</p>
<b>C CYLINDER</b> 4.4 lb Shoulder bag	<b>D CYLINDER</b> 6.1 lb Shoulder bag	<b>E CYLINDER</b> 9.3 lb Rolling cart									
<b>C Cylinder Duration</b> (Continuous regulator)	<b>D Cylinder Duration</b> (Continuous regulator)	<b>E Cylinder Duration</b> (Continuous regulator)									
1 LPM = 2.5 hrs 2 LPM = 1.25 hrs 3 LPM = .75 hrs	1 LPM = 5 hrs 2 LPM = 2.5 hrs 3 LPM = 1.25 hrs	1 LPM = 10 hrs 2 LPM = 5 hrs 3 LPM = 3.4 hrs									
<p><b>Home-filled gas tanks</b></p> 	<p>These oxygen tanks can be filled at home with your concentrator. They have a built-in regulator that provides a pulsed flow of oxygen (not continuous).</p>	<p>Outside the home</p>									
<p><b>Portable oxygen concentrator</b></p> 	<p>This is a smaller version of the standard concentrator. It runs on batteries and can be carried or placed in a wheeled cart.</p>	<p>Outside the home</p>									

## WHAT YOU SHOULD KNOW ABOUT OXYGEN THERAPY

Your doctor will order an oxygen titration test to determine the best setting (liter flow) for when you are active. Use your pulse oximeter to check your blood oxygen levels. They should be between 90 percent (%) and 94%. (See the sidebar on [page 9](#) to learn how a pulse oximeter works.)

### What setting should my concentrator or tank be?

Your oxygen therapy prescription includes a recommended flow rate. A flow rate is the amount of oxygen you receive. Oxygen delivery systems such as a home concentrator, a tank with continuous flow, a portable oxygen concentrator (POC), or a pulse-dose tank system, measure flow rate in **liters per minute (L/min or LPM)**. You might have one flow rate for day use and another for use while you are sleeping.

### What is the difference between continuous and pulse-dose?

Home oxygen concentrators and oxygen tanks with a continuous flow regulator have a continuous flow coming through the nasal cannula. A pulse-dose device, like a POC or pulse-dose regulator on an oxygen tank, only delivers the oxygen when you are inhaling. It conserves the amount of oxygen in the tank so it can last longer. Not every person on oxygen can use a pulse-dose device. Your doctor should order an oxygen titration test to check if it is okay for you.

### Will I get addicted to oxygen? Should I wean myself off?

Everyone is "addicted" to oxygen. We need it to live. Lung diseases change the way oxygen is absorbed into the bloodstream. This means you may need to be on oxygen for the rest of your life. Your prescription may need to be increased over time if your disease worsens. Going without (or cutting back on) your oxygen therapy puts extra stress on your heart and other organs. For your health, use your oxygen exactly as your doctor has prescribed.



### Will more oxygen fix my shortness of breath?

Oxygen will help with your shortness of breath only if your oxygen level is below normal. If your oxygen levels are normal, then you might be "air-trapping" and should do **pursed-lipped breathing exercises** to help get rid of the trapped air in your lungs. If you have COPD and asthma and your shortness of breath continues, use your quick relief medications and follow the action plan you created with your doctor.

### Can I just turn up my oxygen?

No, not unless your doctor has given you specific instructions to do so. Changing settings can cause problems. For example, too much oxygen can send a message to the brain to slow your breathing, which can be dangerous. Too little oxygen may hurt your brain, heart, and other organs. Follow your prescribed flow rate unless your doctor okays a change. Your doctor may already have suggested that you turn up your flow rate during exercise or other physical activity. If so, that's fine. Just remember to turn it back down afterward.

### My nose is sore! What can I do?

This is a common problem when a person first starts using oxygen. It usually gets better with time. In the meantime, put some olive oil or a water-based lubricant (like KY Jelly or aloe gel) on the nasal prongs. (Do NOT use Vaseline or any petroleum-based product.) Use the water-bubbler humidifier on your concentrator. The moisture may soothe your dry sinuses. Wear the cannula so the prongs send oxygen directly up into your nose (with the prongs curving in toward your face). Replace your nasal cannula and tubing at least once a month and after every respiratory infection.





## NOW THAT I'M ON OXYGEN...

Being on oxygen is not an indicator of your life expectancy. Oxygen therapy actually increases your survival when worn as prescribed. By following your treatment plan, keeping your muscles strong with exercise, and avoiding exacerbations, you can participate more fully in your daily activities.

## Is oxygen safe?

It is safe to use oxygen if you use it properly. Your oxygen supplier will give you a complete list of safety measures to follow. A few key points:

- **DO NOT smoke while using oxygen.** Stay at least 10 feet away from anyone who is smoking. Keep your oxygen tubing at least 10 feet away from any lit cigarettes.
- **Stay at least 10 feet away from any open flame.** This includes candles, gas stove tops, and fireplace fires. Oxygen can feed a flame.
- **DO NOT use petroleum-based products.** This includes WD-40 household oils, Vaseline, Vicks VapoRub, and other skin and hair products. Oil and oxygen together can ignite and burn rapidly.
- **Keep oxygen tanks (cylinders) from rolling around, falling over, or being struck.** For example, when in the car, strap them in an upright position. The tanks are very durable, but the contents are under pressure. You want to make sure the tanks do not crack.
- **Watch out for your oxygen tubing.** Use the length of tubing you need—but not any longer than you need. The longer the tubing, the greater the chance of someone tripping on it. Long tubing is also more likely to become knotted, which can cut off your oxygen.

## Can I travel with oxygen?

Absolutely! It just takes some extra planning. Here are some tips:

- When you travel, bring along an oxygen prescription from your doctor that includes your diagnosis, your prescription, your present condition, and a statement that it is safe for you to travel. Also, carry the contact numbers of your doctor and oxygen supplier.
- When traveling by car, make sure your oxygen equipment is secure and in an upright position. Bring more oxygen than you think you'll need—just in case. Also, as you travel, be sure to get out and stretch every hour or so.
- If you plan to travel by airplane, contact your airline and ask if you can fly with oxygen BEFORE you book your flight. If allowed, you will likely need to purchase or rent a portable oxygen concentrator (POC) from your oxygen supplier or websites like [oxygentogo.com](http://oxygentogo.com) or [travelO2.com](http://travelO2.com). Airlines that allow POCs on board have paperwork on their websites that your doctor will need to fill out. Most airlines require that you have 1.5 times the battery time for your trip. Make sure that you take enough batteries—and the cables to charge them—in case of delays. Try and book direct flights whenever you can. It will be easier on you. Ask for assistance getting around the airport, if needed.

- If going on a cruise, check the cruise line website for details about POC and tank use. Some cruise lines have “Oxygen Cruises,” allowing you to travel with others who use oxygen.
- If traveling by train, your POC must have a battery that lasts more than 4 hours in case the train loses power. Otherwise, you will be allowed to plug your POC into the power outlets onboard. The current regulation for oxygen tanks is that the total weight of your luggage (including your POC) must weigh less than 120 pounds.

## Other medical devices to help manage chronic lung disease

There are many ways to help reduce the feeling of breathlessness or respiratory discomfort that often comes with chronic lung disease. The sensation of breathlessness is unique to each person — the severity of the symptoms does not always match the severity of lung disease.

Chronic lung disease can often lead to the following:

- Increased shortness of breath, or **dyspnea** [DISP-nee-uh]
- Low oxygen levels, or **hypoxia** [hy-POX-ee-uh]
- Carbon dioxide retention, or **hypercarbia** [hy-per-CARB-ee-uh]

When your lungs cannot keep your oxygen levels above 88%, you have what is called **hypoxemic respiratory failure** (low oxygen). It must be treated with oxygen. **Hypercarbic respiratory failure** is when your lungs cannot get rid of carbon dioxide. This can lead to daytime sleepiness, altered mental status, and respiratory fatigue.

## Positive Airway Therapy (PAP)

**Positive airway pressure (PAP)** therapy is a way to support breathing. It does this by pushing air into the lungs—like blowing up a balloon. It also helps hold the airways open so they do not collapse. PAP is generally used at night to treat sleep disorders. However, in advanced stages of lung disease, PAP can be worn both day and night to reduce breathlessness and provide comfort.



### DISCUSS YOUR TRAVEL PLANS

Your oxygen company can help arrange for oxygen at the airport and at your travel destination. Check out the Internet resources on [page 41](#). Some websites have information about traveling with oxygen.





## Non-Invasive Ventilation (NIV)

**Non-invasive ventilation (NIV)** is a form of PAP therapy. It can help prevent low oxygen levels and high carbon dioxide levels by giving the body enough time to take a deep breath, exchange oxygen for carbon dioxide, and exhale more effectively. Hypoxia and hypercarbia, when left untreated, can result in unresponsiveness and death. Common tests that are done to confirm the need for these devices include a pulmonary function test (PFT), arterial blood gas (ABG), or overnight sleep test (sleep study).

### Delivery methods

Delivery of PAP and NIV therapy varies. PAP therapy is used with a mask only and is generally worn while napping or sleeping at night. It may be referred to as CPAP, BiPAP, VPAP, or AVAPS. Not all PAP therapies are alike. Some are prescribed for sleep apnea, others for respiratory failure. To have the **best** chance of long-term success, it is best to get a mask that is fitted to you by a qualified medical professional. This is often the most important process in the use of PAP or NIV therapy.

PAP therapy can be delivered in 3 ways:

- Pressure on exhalation only (CPAP)
- Pressure on inhalation and exhalation (BiPAP or VPAP)
- For NIV therapy, a preset delivery of volume and varying inspiratory/expiratory pressures that can be used with a mask or a mouthpiece

Like all medical therapies, the key to managing chronic lung disease is to faithfully follow your recommended treatments. Treatment for chronic lung disease may require trying several different things to find the perfect combination of therapies and medications.

PAP or NIV therapies also require a commitment and an adjustment period to find the settings and delivery methods that best support your needs. When considering or using PAP therapy, it is important to have close communication with your healthcare providers. This ensures you are using the proper settings and that changes are made when needed. Many people struggle with PAP therapy when they do not get enough training and follow-up, even when they see improvements in breathlessness and overall symptoms. Most insurance companies will monitor your use of the PAP device. Some will take back the PAP device after 30 or more days if you are not using it as directed by your provider. **Pulmonary Disease Navigators**, who work in the respiratory outpatient clinics, can help with PAP tolerance and compliance.





## Surgical options

For a small number of people with lung disease, surgery may be an option. For example, a lung volume reduction surgery may improve your breathing by removing damaged lung tissue. It may also allow the diaphragm to return to its normal shape.

Another surgical treatment is placing endobronchial valves in over-expanded airways. This is when a one-way valve is placed in over-expanded airways to allow air out, but not in. This decreases the problems with ineffective alveoli and allows the lung to fill better with fresh oxygen.

If your doctor recommends surgery, you'll discuss the potential risks, benefits, and alternatives of the surgery before you schedule it. You'll receive detailed information and have a chance to ask questions at that time.



## Emotional health and mindfulness

### Easing stress and anxiety

Stress and anxiety make breathing more difficult for everyone. That is why people tend to sigh when they're feeling tense or frustrated—they're trying to relax and take more air into their lungs.

When you have lung disease, stress can be particularly harmful. It can make breathlessness worse, which makes you more anxious. This causes you to breathe faster, tire more easily, and get even more out of breath.

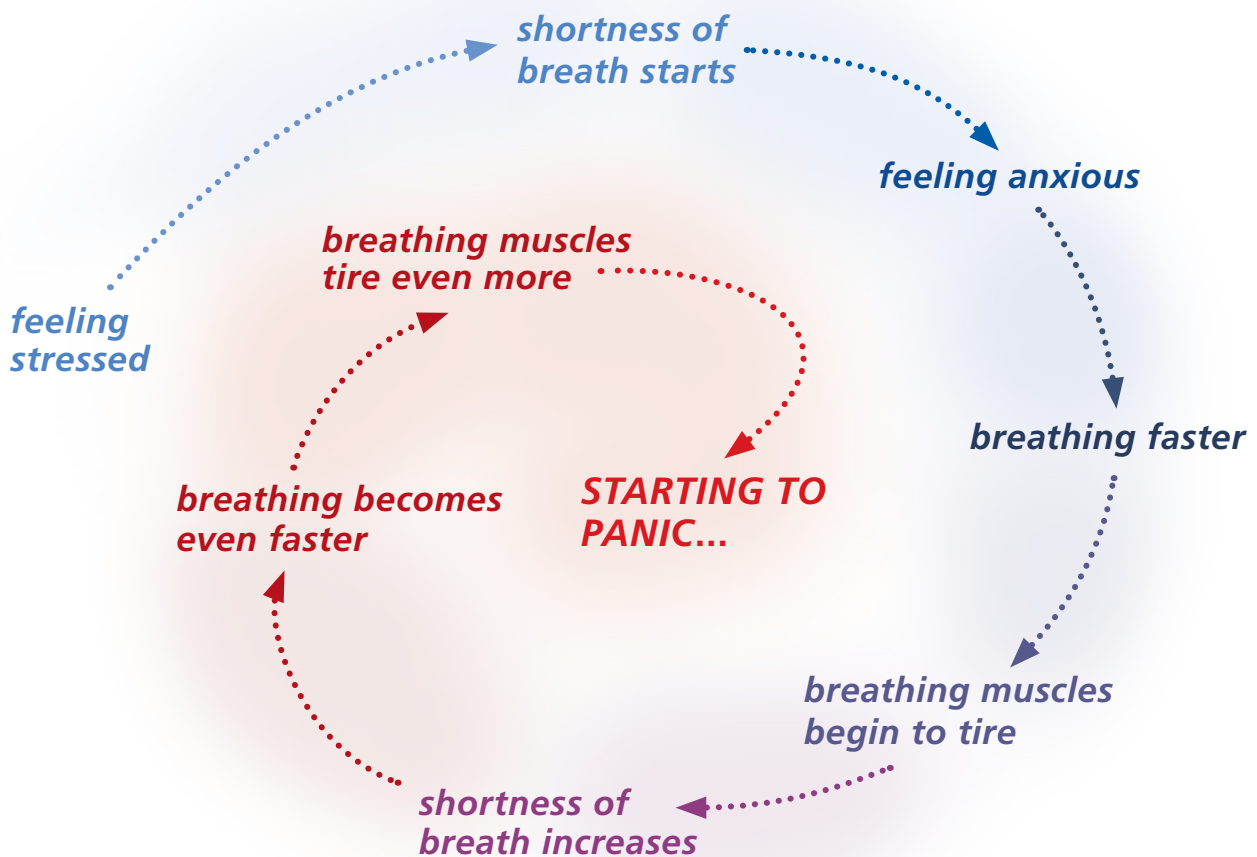
**Unless it is interrupted, this stress cycle can lead to real trouble breathing.**

### Mindfulness

You can train your brain (and your body) to relax and can end the stress cycle. Stress is a habit like any other behavior. Paying attention to your behavior and taking steps to change it is called "mindfulness." Take a look at the exercises on the next page to see how you can reduce stress and be more mindful.

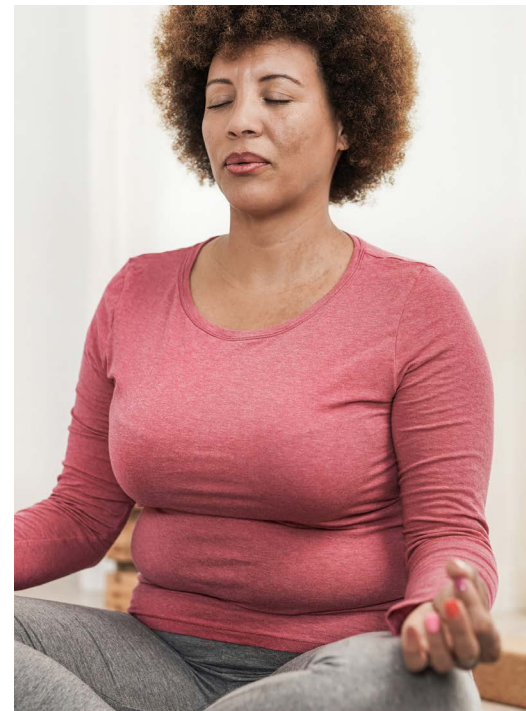
#### WHY IS IT IMPORTANT?

It is important to care for your mental health as well as your physical health. Practice the stress-relieving techniques described in this booklet and be alert to signs of depression and anxiety. See your doctor if you have any of these signs—**you deserve to feel better.**





- **Take a time-out.** When you first notice tension or breathlessness, stop what you are doing (or thinking). Sit down and practice a breathing technique for a few minutes. Finish by closing your eyes and revisiting a happy, calming memory.
- **Adjust your outlook.** Your reaction to stress begins with how you identify stress. Do you tend to imagine worst-case scenarios, obsess over details, or take things too personally? See if you can adjust your attitude about what's happening. Try to see the humor in difficult situations and give others the benefit of the doubt. Finally, try to put things into perspective by asking, “Will this matter in 5 years?”
- **Re-prioritize your time.** Are you busy with things you do not really enjoy? Or do you find yourself with too much free time (which invites you to worry more)? If so, schedule your time to reflect your interests. Do more of what you like to do, less of what you do not. Assign tasks to others. Learn to say no.
- **Distract yourself.** Do not give yourself a chance to fret. Escape from your worries with healthy distractions like socializing, exercising, or engaging in your favorite hobby. Read a book or watch a movie.
- **Practice progressive relaxation.** Tense up, and then slowly relax, each part of your body. Start with your toes and work your way up. Do this several times. Repeating a positive message as you do this exercise (“Let go...relax...let go”) can help. Practice this every day for 15 minutes or so. Remember that it takes about a month to start a new habit, including the habit of relaxation.
- **Try to laugh every day.** Find a reason to laugh at yourself and your situation. Laughter feels great and helps put some distance between you and what you are coping with.
- **Focus on what’s going well in your life.** It is tempting for all of us to dwell on what we’ve lost or wish we’d done. But that never helps. Instead, pay attention to what’s working in your life. Think of what you can do, not what you cannot.
- **Exercise.** Physical activity releases “feel-good” chemicals in your brain and helps you work off the day’s tension. The mood-boost can last for hours after you’ve stopped exercising.

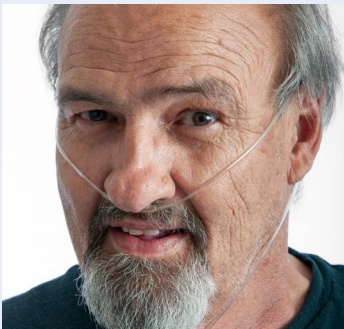


## DEPRESSION AND ANXIETY

Depression and anxiety are common in people with COPD. Studies estimate that up to 50% of people with COPD have depression, anxiety, or both. It can affect appetite, sleep, and motivation, making it difficult to care for yourself and stay healthy.

### It can be treated.

Pulmonary rehab, counseling, and medication have all been shown to improve the mood and outlook of people with chronic lung disease.



My doctor brought it up, and I'm grateful he did. I just always had that heavy feeling, that anxiety. It was a relief to hear how common depression is and that I could get help."

—Stephen B



## When to talk to my doctor

You can have a full and satisfying life while living with lung disease. But it is not always easy. You will likely have some “down days.” Still, if you feel down for more than 2 weeks or have any of the symptoms listed below, talk with your doctor. You could have clinical depression or anxiety. These conditions can and should be treated. Talk to your doctor if you notice any of the following:

- **Loss of pleasure.** You do not take interest in things you used to enjoy.
- **Change in sleep patterns.** You sleep too much, too little, or poorly.
- **Change in appetite.** You eat more or less than usual.
- **Trouble concentrating.** You cannot watch a TV program or read an article because other thoughts or feelings get in the way.
- **Nervousness or fidgeting.** You always feel anxious, or you have trouble sitting still.
- **Guilt.** You feel you “never do anything right” and worry that you are a burden to others.
- **Suicidal thoughts.** You feel you want to die or are thinking of ways to hurt yourself.

## Nutrition

### Eating smarter

Making smart choices about food will help you stay healthy and feel better. This section has 5 key messages for people with lung disease.

### Reach and keep a healthy weight

This means different things for different people. For example:

- **If you are losing weight** (without needing to), focus on better nutrition and getting more of the right kinds of calories. Many people with lung disease have trouble keeping weight on. They lose muscle and become weaker. If this is happening to you, talk with your doctor about a nutritional supplement and simple ways to keep up your muscle strength. Make an effort to eat regular, healthy meals and snacks. Maintaining a normal weight is important for your health.
- **If you are overweight**, slim down gradually. Excess weight makes your heart and lungs work even harder. Make smart choices and watch your portion sizes. Ask your doctor to refer you to a dietitian for more advice and support.

### Eat 4 to 6 small meals and snacks throughout the day, instead of 3 big meals

Your stomach is right under your lungs. If your stomach is too full, it can put pressure on your diaphragm and interfere with breathing. Ask a dietitian for advice on how much you should eat at one time.

### Try to avoid getting gas

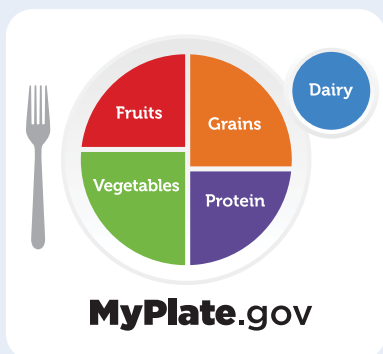
A stomach swollen with gas can also interfere with breathing. Avoid carbonated drinks and gas-producing foods like beans, broccoli, brussels sprouts, cabbage, corn, and cucumbers. Also, eat slowly and do not talk too much while you are eating. You'll swallow less air.

### How does food affect your breathing?

Metabolism occurs when the food you eat is converted into fuel (energy). The body uses that fuel to do all the things it does each day. The process starts when oxygen and food are taken in. Fuel and carbon dioxide become the end products. Carbohydrates produce the most carbon dioxide and fats produce the least. Eating foods with fewer carbohydrates and more protein and fat helps some people with COPD breathe easier. You should maintain a balance of nutritional foods when considering your food choices.







At the USDA's [myplate.gov](https://www.myplate.gov) website, you will find lots of nutrition information and interactive tools, including a menu planner that you can tailor to your age, sex, and activity level.



### LIMIT YOUR SALT

- Do not eat more than 2,400mg of salt each day. Salt makes your body hold on to fluids, making it harder to breathe.
- Processed and prepackaged foods are high in salt, so consider more natural foods.

## Get plenty of fluids

Fluids help thin mucus and keep your airways clearer. Drink 8 glasses of water every day, and choose soups and broths often. (Try to take your fluids between meals so they won't interfere with your appetite at mealtimes.)

Limit your caffeine intake, though. It can make you nervous and may interfere with some of your medications.

## Help with meal planning

If you have a hard time planning meals, some insurance policies cover a consultation with a dietitian. Another resource that is helpful is the U.S. Department of Agriculture's (USDA) website, [myplate.gov](https://www.myplate.gov).

## Building better meals with the nutrition building blocks

- **Fruits and vegetables**

- Half of your plate should be fruits and vegetables.

- **Whole grains**

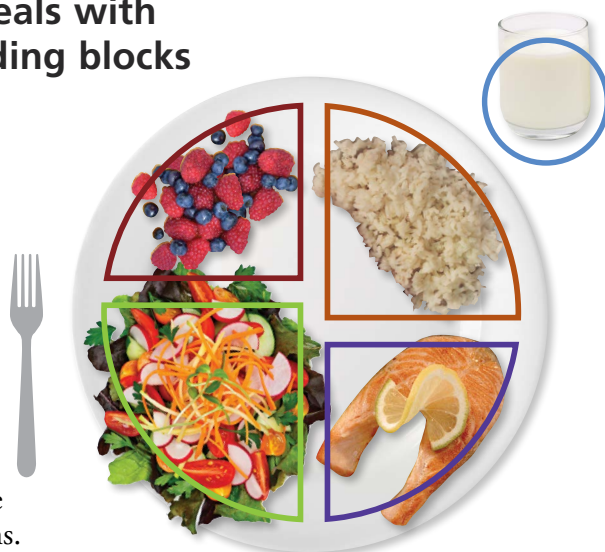
- Choose whole and unprocessed grains, like whole wheat or quinoa.
- A fourth of your plate should be whole grains.

- **Protein**

- Protein gives you long-lasting energy and helps maintain bone and muscle strength.
- Choose lean cuts of meat, like fish, shellfish, chicken, or turkey.
- Try snacking on nuts, like almonds, peanuts, or walnuts.
- A fourth of your plate should be protein.

- **Dairy products**

- The protein and calcium in dairy is important for people with lung disease.
- You may need to reduce your dairy if you have thicker mucus.



## Physical exercise

If you are like most people with lung disease, you know the problem: You do not exercise because you get tired and short of breath, but you also get tired and short of breath because you do not exercise.

### Enjoy regular exercise

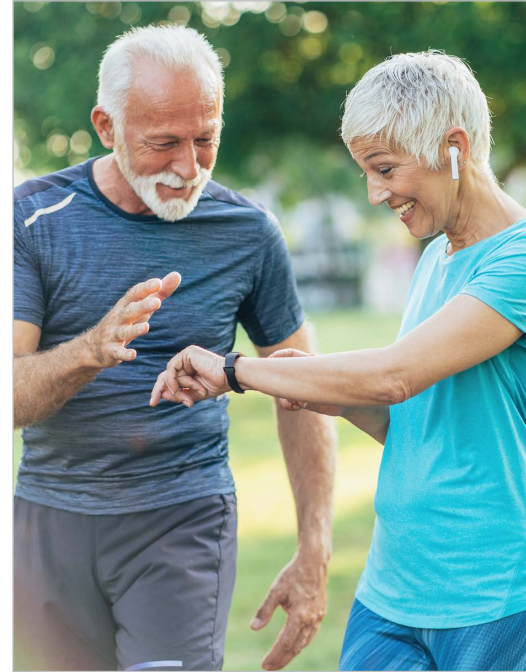
If you haven't been active for a while or are very short of breath, you might feel like it is too late to improve your fitness. Or, you might think you are simply not able to exercise. The truth is that very few people are too old, inactive, sick, or overweight to exercise and to benefit from it.

Your lung disease is no excuse to avoid exercise. In fact, it is a reason to accept the challenge. As your fitness improves, you will be able to do more and feel better. That's why lung experts say that exercise is one of the most important aspects of treatment. It won't reverse your disease, but it lets you do more with the lungs you have.

### Be patient with yourself

As you begin an exercise program, be patient with yourself. Your doctor, respiratory therapist, or exercise therapist can help you set appropriate goals and guidelines. At first, you might exercise for just a few minutes, once or twice a day. As your fitness improves, you might increase the amount of time or the number of times you exercise during the day.

As you gradually build your exercise routine, be consistent. Exercise every day—or at least 5 days of the week. The best way to make exercise happen is to make it a habit, like brushing your teeth. And if you mess up for a few days? Start back in right away.



### WHY IS IT IMPORTANT?

Exercise is vital for people with lung disease. Regular exercise can:

- Help you use oxygen more efficiently.
- Make it easier to do everyday activities like shopping, cooking, and cleaning.
- Help you sleep better.
- Make it easier to maintain a healthy weight.
- Improve your mood and motivation.
- Help you stay healthier and out of the hospital.
- Help you maintain independence.

## Benefits of pulmonary rehab

Pulmonary rehab programs make a big difference for people at all stages of lung disease. Studies show that participation can:

- Ease your shortness of breath
- Build your capacity for exercise and activity
- Reduce anxiety and depression caused by lung disease
- Help you stay out of the hospital
- Improve your quality of life
- Increase your knowledge about lung disease

### Mix it up

If you are like most people with lung disease, you've become "deconditioned" from lack of activity. A good exercise program helps improve your endurance, muscle strength, and flexibility. The next few pages show some basic guidelines.

### Things to keep in mind

**Dress smart.** Wear comfortable shoes that won't trip you up and loose, comfortable clothing. For outdoor exercise, put on sunscreen and a hat.

**Ask your doctor about oxygen and medication for exercise.** Your doctor may recommend using a bronchodilator medication or (extra) oxygen during your workouts.

**Watch pollution levels and weather.** Do not exercise outside on high-ozone days (see [page 41](#)). Also, avoid outside exercise on days that are very cold, hot, or humid.

**Choose activities that match your interests.** You are more likely to stick with an exercise program that you enjoy. So walk the dog, dance, bowl, golf, or garden. Have fun!

**Forget "no pain, no gain."** Do not push too hard or rush through your workouts. Build fitness slowly and consistently. Stop and rest if you:

- Feel dizzy or light-headed
- Have very severe shortness of breath
- Feel any chest pain
- Call the doctor if these symptoms do not go away with rest.





## ENDURANCE EXERCISE

Endurance exercises condition your body, helping it to use oxygen more efficiently. With better conditioning, everything you do becomes easier. Do activities like walking, cycling, swimming, water aerobics—anything that gets your heart pumping a little harder. Begin slowly, with just a few minutes a day and gradually build up to longer periods.

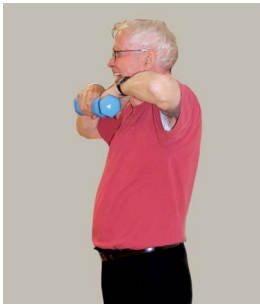


## STRENGTH EXERCISE

Stronger muscles use less energy and make daily activities easier. Strong chest and arm muscles can ease the strain on other muscles and help you breathe more easily. Do strength exercises about 3 times a week, gradually working up to 20 or more repetitions.

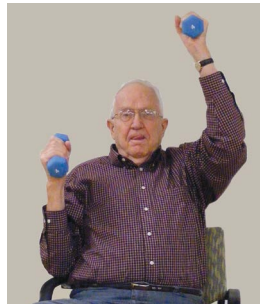
### Examples

**For your arms** (Use light weights—5 pounds or less. A soup can or water bottle will work fine, too.)



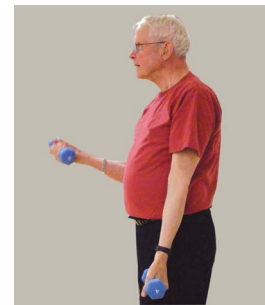
#### ROWS

Stand, keeping your hands close to your body. Lift to shoulder height.



#### SHOULDER PRESS

Sit with your back straight. Alternate lifting your hands straight up.



#### BICEP CURLS

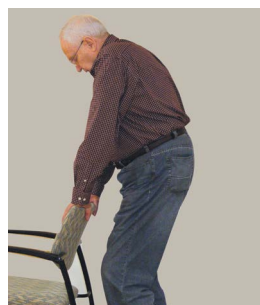
You can sit or stand. Extend arm all the way. Bend at the elbow and lift to shoulder. Keep elbow tight to body.

### For your legs



#### LEG EXTENSIONS

Sit in a chair. Use the muscles in your upper legs and belly to lift your leg straight out.



#### MINI SQUATS

Stand. Hold onto the back of a chair. Bend your knees with your weight on your heels.



#### LEG KICKS TO THE SIDE

Stand. Turn sideways and hold onto something. Lift the outer leg off the floor.

## FLEXIBILITY EXERCISE

Stretching helps your range of motion and balance, which may help prevent injuries and falls. Stretching also feels good and helps you relax. Stretch every day slowly and gently, without bouncing or jerking.

### Examples



NECK ROLL



SHOULDER SHRUGS



OVER THE HEAD  
SIDE STRETCH



THIGH STRETCH



## Getting started

### Set goals

Set fitness goals for yourself with your doctor, respiratory therapist, or exercise therapist. Be specific and realistic. For example, your goals might include exercising every day or building up to a 20-minute walk. A good exercise program helps to improve muscle strength, flexibility, and overall endurance that may have been lost due to lack of activity.

### Track your progress

Studies show that keeping a daily record helps people stick to an exercise program. It may help you stay focused on your goals and your progress. Use the table on the next page to get started with your exercise plan.

# My TRACKER

**Goals go here** →

**Tracking progress here** ↓

	<b>Endurance:</b> aim for 5+ days per week Do some aerobic activity (walk, bike, etc.) for _____ minutes	<b>Strength:</b> aim for 2 or 3 days a week exercise _____ repetitions (reps) _____ exercise _____ reps _____ exercise _____ reps _____	<b>Flexibility:</b> aim for 5+ days per week <input type="checkbox"/> head & neck <input type="checkbox"/> arms & sides <input type="checkbox"/> legs
Date: _____ M T W Th F Sa Su (circle day)	_____ (type of activity) for _____ minutes	exercise _____ reps _____ exercise _____ reps _____ exercise _____ reps _____	<input type="checkbox"/> head & neck <input type="checkbox"/> arms & sides <input type="checkbox"/> legs
Notes _____			
Date: _____ M T W Th F Sa Su (circle day)	_____ (type of activity) for _____ minutes	exercise _____ reps _____ exercise _____ reps _____ exercise _____ reps _____	<input type="checkbox"/> head & neck <input type="checkbox"/> arms & sides <input type="checkbox"/> legs
Notes _____			
Date: _____ M T W Th F Sa Su (circle day)	_____ (type of activity) for _____ minutes	exercise _____ reps _____ exercise _____ reps _____ exercise _____ reps _____	<input type="checkbox"/> head & neck <input type="checkbox"/> arms & sides <input type="checkbox"/> legs
Notes _____			
Date: _____ M T W Th F Sa Su (circle day)	_____ (type of activity) for _____ minutes	exercise _____ reps _____ exercise _____ reps _____ exercise _____ reps _____	<input type="checkbox"/> head & neck <input type="checkbox"/> arms & sides <input type="checkbox"/> legs
Notes _____			
Date: _____ M T W Th F Sa Su (circle day)	_____ (type of activity) for _____ minutes	exercise _____ reps _____ exercise _____ reps _____ exercise _____ reps _____	<input type="checkbox"/> head & neck <input type="checkbox"/> arms & sides <input type="checkbox"/> legs
Notes _____			



## BREATHING TECHNIQUES

The breathing techniques explained here can help during physical exercise or at other times when you feel out of breath or need to relax. Practice them regularly, even when you feel fine. You'll get better at them, and the practice may even help prevent shortness of breath.

### Pursed-lip breathing

This technique helps temporarily raise your oxygen level. It helps you relax and improves your ability to exercise. Practice pursed-lip breathing when you are exercising or exerting yourself in any way. Do it whenever you feel tense or out of breath.

In this technique, the key is making sure you are breathing **OUT** for a longer time than you are breathing **IN**. Here are the steps:

- 1 Relax your shoulder and neck muscles. Breathe in slowly through your nose for a count of 2.
- 2 With your lips pursed (puckered), like you are whistling, breathe out slowly through your mouth for 4 to 6 seconds.

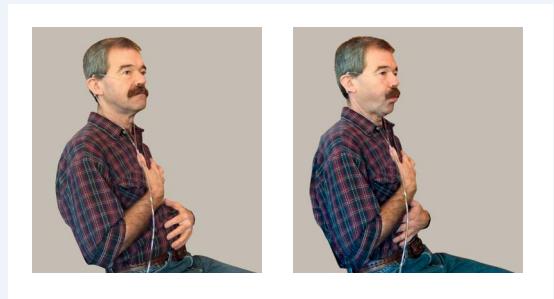


### Belly breathing

In this technique, your stomach (belly) muscles help your diaphragm move air in and out of your lungs more easily. Practice belly breathing two times a day, along with pursed-lip breathing. Also, use this breathing technique anytime you feel short of breath or tense.

The steps below show you how to combine belly breathing with the pursed-lip technique:

- 1 Sit in a comfortable position and relax your shoulder and neck muscles. With one hand on your stomach and one hand on your chest, breathe in through your nose to the count of 2. Think of "breathing into" your belly—feel your stomach muscles relax and push out. Your chest shouldn't move much.
- 2 Tighten your stomach muscles and breathe out through pursed lips to a count of 4. (As your stomach muscles tighten, they will go in and up.) Again, keep your chest still.

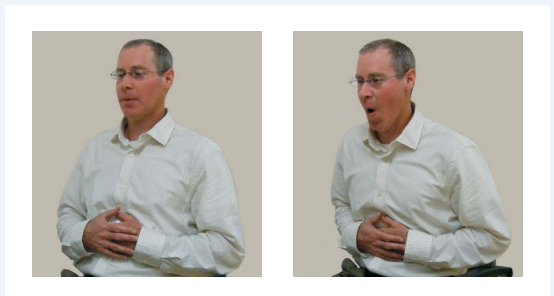


### Controlled cough (huff cough)

Coughing helps rid your lungs of mucus. So coughing is helpful—but it is also tiring.

This technique shows you how to cough in a way that conserves your energy. Use this technique whenever you need to cough. Follow these steps:

- 1 Sit comfortably in a chair. Take several slow breaths, using the belly breathing and pursed-lip techniques described above. Then take in a normal breath and lean forward slightly from the waist.
- 2 Make 2 short, sharp coughs—squeezing with your stomach muscles to help force out the air. (The first cough loosens the mucus, and the second clears it upward.) Your cough may make a "huff" sound.
- 3 Breathe lightly as you rest. (A big breath right after coughing might suck the mucus back into your lungs.)



## Energy conservation

Lung disease can tire you out and make it hard to get things done. You'll feel better and get more accomplished if you learn to conserve your energy throughout the day. Here are a few tips:

- **Go at your pace.** Break big jobs into smaller tasks and rest in between them. Taking things slowly is better than moving too quickly and then having to stop to catch your breath.
- **Sit down for tasks around the house.** Get a high stool to use while you cook or do dishes in the kitchen. Sit down to shave or put on makeup.
- **Use a rolling cart.** You can save trips in the house if you use a cart to help set the table or put away clean laundry.
- **Re-arrange things.** Try to put things at waist level so you won't have to reach up or bend down to get them. In the kitchen, for example, move food to shelves in easy reach. Put your hat in a drawer rather than on top of the coat rack. Lift your shoe rack up off the floor of the closet.
- **Change your bathing routine.** Buy a shower chair and handheld sprayer so you can sit down while you bathe. Afterward, put on a terry cloth robe rather than drying off with a towel. If steam makes breathing more difficult, turn on the fan or open a window for more ventilation.
- **Rest after meals** (and any other time you need to). A 20-minute catnap can work wonders.
- **Ask for help.** Some jobs are hard to do alone. Other jobs are just not enjoyable. So ask for help with these things. You are not being weak—you are being smart. You are saving your energy for other things.



### GET A GRABBER

Long, handheld tongs can help you reach things up high or down low. People call this tool a “grabber,” “grasper,” or “reacher.”



## Preventing infection and exacerbation

You cannot live your life in isolation, and you shouldn't! Living well with lung disease means going out, seeing people, and living as normally as possible. Still, it is worth taking a few steps to avoid illness and help prevent symptom flare-ups. With lung disease, even a "minor" illness or irritant can have a serious effect on your health.

This section gives you 6 important steps to help you prevent infection and cope with things that make breathing more difficult.



- 1 Wash your hands often.
- 2 Get all the vaccines recommended by your doctor.
- 3 Try to avoid other people's germs.
- 4 Watch out for your own germs, too.
- 5 Avoid ozone and other air pollution. Check the air quality in your local newspaper, radio, or TV. See the resources on [page 41](#) for the daily air quality report, to sign up for air quality alerts, and to learn what you can do to protect air quality and your lungs.
- 6 Control your allergies.

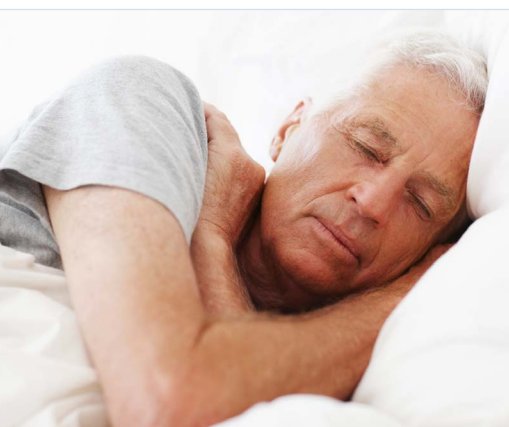
## Sleeping Well

Being well rested helps you stay healthy and feel good.

If breathing problems keep you awake, lift the head of the bed slightly. A more upright position can ease breathing.

If your doctor has prescribed oxygen for nighttime, use it! Some people think that since they're resting, they do not need oxygen at night. In fact, oxygen levels tend to drop during sleep. You may need oxygen even more then.

Talk to your doctor if you often have trouble sleeping or do not feel refreshed after sleep. Your doctor can look for a cause or suggest additional help. It is very common to also have sleep apnea.

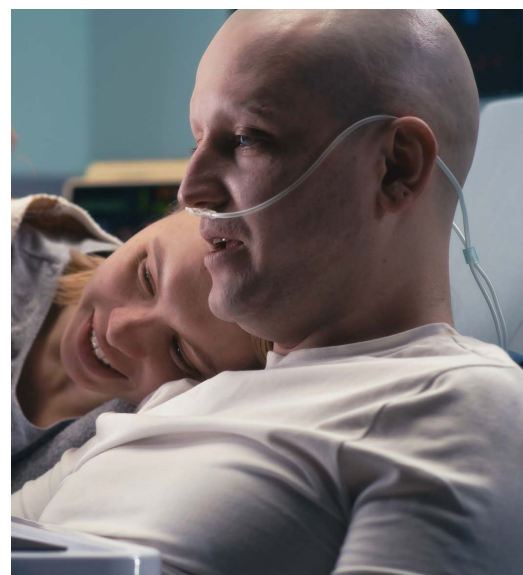




## About Sexuality

Your sexual feelings do not end when you have lung disease, and your sex life doesn't have to end either. Here are some things to keep in mind about sex with lung disease:

- **You can almost certainly manage the physical effort of sexual activity.** The energy required for sex is about the same as that required to climb a flight of stairs. A few adjustments can help. Try going more slowly, using a quick-relief bronchodilator or oxygen beforehand, and having sex less often. Also, try using a side-by-side position or a position that allows your partner to be more active. Finally, remember to keep up with your daily exercise! Better fitness can make sexual activity easier, too.
- **Sex is safe.** Studies have shown that sexual activity does **not** raise your blood pressure, heart rate, or respiration rate to dangerous levels.
- **Try to time it right.** Sex may be more tiring right after a big meal, after drinking alcohol, or when you are feeling stressed. Wait until you are relaxed and well rested.
- **Realize that your age and medications may play a role.** Talk to your doctor about changes in your sexuality and what may be causing them.
- **Be with your partner in other ways, too.** Sexual activity is wonderful. But it is not the only way to feel close or to share love. Holding hands, laying down together, sitting side by side on the couch—all of these can help you stay connected.



# My Symptoms and Action Plan

---



## Pay attention to your symptoms so that you can:

- Communicate with your healthcare team about your health and treatment.
- Catch an exacerbation early, when you have the best chance to treat it effectively.

## What to watch for—and why it is important:

- **Increase in shortness of breath.** If you are having more trouble than usual catching your breath, you may be having a bronchospasm from stress, an irritant in the air, or a lung infection.
- **Chest tightness or chest pain.** A tight or full feeling in your chest can also be a sign of bronchospasm. Chest pain can come from many different things, but sudden or severe chest pain may be an emergency.
- **Wheezing.** A whistling sound when you breathe out or in can be caused by a bronchospasm or an infection that creates more mucus.
- **Change in the mucus you cough up.** Changes in the color or thickness of the mucus may signal a lung infection.
- **Sudden weight gain** (more than 3 or 5 pounds overnight). A sudden weight increase is probably from fluid retention (water weight gain). It can be a sign of heart trouble or an infection.
- **Sore throat or runny nose** (with green or yellow secretions). These symptoms could signal a cold or sinus infection.
- **Extreme fatigue, drowsiness, or irritability.** These could mean low oxygen levels or high carbon dioxide levels.
- **Fever or chills.** These usually mean an infection of some kind.
- **Trouble sleeping, eating, or concentrating; trouble finding energy for everyday activities.** These could mean anxiety or depression. It could also signal other health problems.

# MY ACTION PLAN: A tool for people with COPD or other chronic lung disease.

To help you manage your lung disease, review and complete this Action Plan with your doctor.

Name \_\_\_\_\_ Date \_\_\_\_\_

Physician \_\_\_\_\_ Diagnosis:  COPD  Asthma  Other \_\_\_\_\_

## How you feel—your symptoms

### I'M DOING FINE

- Breathing is okay
- Mucus is easy to cough up
- Able to do daily activities
- Able to exercise as my doctor advises
- Sleeping well
- Good appetite
- Thinking clearly



## What to do—your Action Plan

### Keep up with medication, exercise, and other aspects of your treatment.

Controller Medications: \_\_\_\_\_

\_\_\_\_\_

Rescue Medications: \_\_\_\_\_

\_\_\_\_\_

### I FEEL WORSE

(May have one or more of the symptoms below)

#### Lung symptoms

- Short of breath
- Mucus is thicker than usual, or colored
- Coughing or wheezing more
- Chest feels tight or "full"
- Some trouble with daily activities
- Trouble concentrating
- No appetite
- Feeling very tense or restless
- Sore throat and runny nose
- Fever and chills

#### Heart symptoms

- Sudden weight gain (3 to 5 pounds overnight)
- Swelling in ankles



### Continue with daily control medications.

- Add or increase quick-relief medication (as needed)
  - Increase inhaler (e.g., albuterol)
  - Add nebulizer (albuterol and ipratropium)
- Call physician
- Increase oxygen as your doctor advises for goal of oxygen saturations of 89% to 93%
- Add steroid(s)
  - Prednisone, 40 mg, daily for 5 days
  - Other steroid burst
- Add antibiotics
  - Doxycycline, 100 mg, twice daily for 7 days
  - Azithromycin, 500 mg, daily for 3 days
  - Other
- Add diuretic: ask your doctor if appropriate
- Do breathing exercises and stress relief exercises
- Use secretion clearance techniques

### I FEEL I'M IN DANGER

(May have one or more of the symptoms below)

- Feel like I cannot breathe—very short of breath—and quick-relief medication doesn't help
- Coughing a lot, cannot cough up mucus
- Blood in mucus
- Cannot do my normal activities
- Feel confused or faint
- Sudden or severe chest pain



### CALL 911 NOW.

Do not drive yourself to the hospital.

Bring your quick-relief medication with you.



# My PLAN

HEALTHCARE CONTACTS		Name	Phone
	Clinic		
	Primary Care		
	Pulmonologist		
	Care Manager		
	Health Insurance		
	Oxygen Supply Company		
	Pharmacy		
OXYGEN	<p><b>Goal:</b> Maintain oxygen saturations between 89% and 93%.</p> <p><b>Oxygen liters per minute:</b> Rest _____ With activity _____</p> <p style="text-align: center;"> <input type="checkbox"/> Continuous           <span style="margin-left: 150px;"><input type="checkbox"/> Bleed-in</span> <span style="margin-left: 150px;"><input type="checkbox"/> Nighttime</span> </p>		
RESPIRATORY MEDICATIONS	Name	Dose	How Often
	<b>Other Medications</b>		
<b>Comments:</b>			

# Resources

---

These organizations can provide more information and support for people with COPD and other chronic lung diseases.

## Resources

### Smoking cessation

CDC Smoking & Tobacco Use: [cdc.gov/tobacco](https://www.cdc.gov/tobacco)

Smokefree.gov: [smokefree.gov](https://www.smokefree.gov)

Or find your state's resources using these websites:

**Utah** – Way to Quit: [waytoquit.org](https://www.waytoquit.org)

**Idaho** – Project Filter: [projectfilter.org](https://www.projectfilter.org)

**Wyoming** – Wyoming Quit Tobacco: [quitwyo.org](https://www.quitwyo.org)

**Nevada** – Quit Now: [nevada.quitlogix.org](https://www.nevada.quitlogix.org)

### Lung health education

**American Lung Association:** [lung.org](https://www.lung.org)

Information and news from a leading lung health organization

**COPD Foundation:** [copdfoundation.org](https://www.copdfoundation.org)

Research and support for those with COPD

**Pulmonary Fibrosis Foundation:** [pulmonaryfibrosis.org](https://www.pulmonaryfibrosis.org)

Education and resources to support you and your family with pulmonary fibrosis

**Allergy & Asthma Network:** [allergyasthmanetwork.org](https://www.allergyasthmanetwork.org)

Education and support for those with asthma

**Intermountain Healthcare:** [intermountainhealthcare.org](https://www.intermountainhealthcare.org)

Education and resources to support you and your family

**National Jewish Health:** [nationaljewish.org](https://www.nationaljewish.org)

Medical information from one of the nation's leading respiratory hospitals

**National Lung Health Education Program:** [nlhep.org](https://www.nlhep.org)

Lung health education from the National Institutes of Health

### Air quality

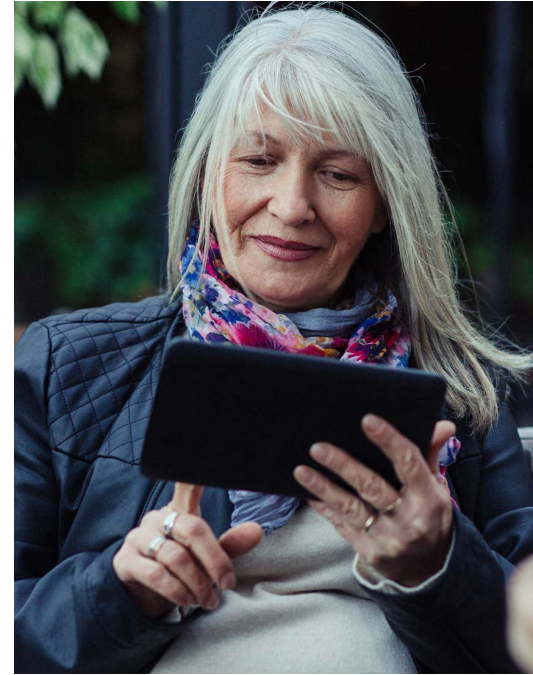
Get real-time air quality reports and see what you can do to protect air quality and your lungs.

Utah: [ucair.org](https://www.ucair.org)

Idaho: [airquality.deq.idaho.gov](https://www.airquality.deq.idaho.gov)

Wyoming: [wyvisnet.com](https://www.wyvisnet.com)

Nevada: [nvair.ndep.nv.gov](https://www.nvair.ndep.nv.gov)



### Additional resources

[lung.org/lung-health-diseases/  
lung-disease-lookup/copd/  
living-with-copd/nutrition](https://www.lung.org/lung-health-diseases/lung-disease-lookup/copd/living-with-copd/nutrition)

[Goldcopd.org](https://www.goldcopd.org)

[Resmed.com](https://www.resmed.com)

[Respironics.com](https://www.respironics.com)

[Oxygentogo.com](https://www.oxygentogo.com)

[Myplate.gov](https://www.myplate.gov)







To find this booklet and other patient education, go to:  
[intermountainhealthcare.org](http://intermountainhealthcare.org)



Intermountain Healthcare complies with applicable federal civil rights laws and does not discriminate on the basis of race, color, national origin, age, disability, or sex. Se proveen servicios de interpretación gratis. Hable con un empleado para solicitarlo. 我們將根據您的需求提供免費的口譯服務。請找尋工作人員協助。

©2010–2022 INTERMOUNTAIN HEALTHCARE | All rights reserved. MAWDS® is a registered service mark of Intermountain Healthcare (Intermountain) and may not be used without written consent from Intermountain. The content presented here is for your information only. It is not a substitute for professional medical advice, and it should not be used to diagnose or treat a health problem or disease. Please consult your healthcare provider if you have any questions or concerns. PLM001 - 09/22 (Last reviewed -09/22) Also available in Spanish.