# Oxygen Therapy

## Helping You Live With COPD

COPD FOUNDATION

www.copdfoundation.org





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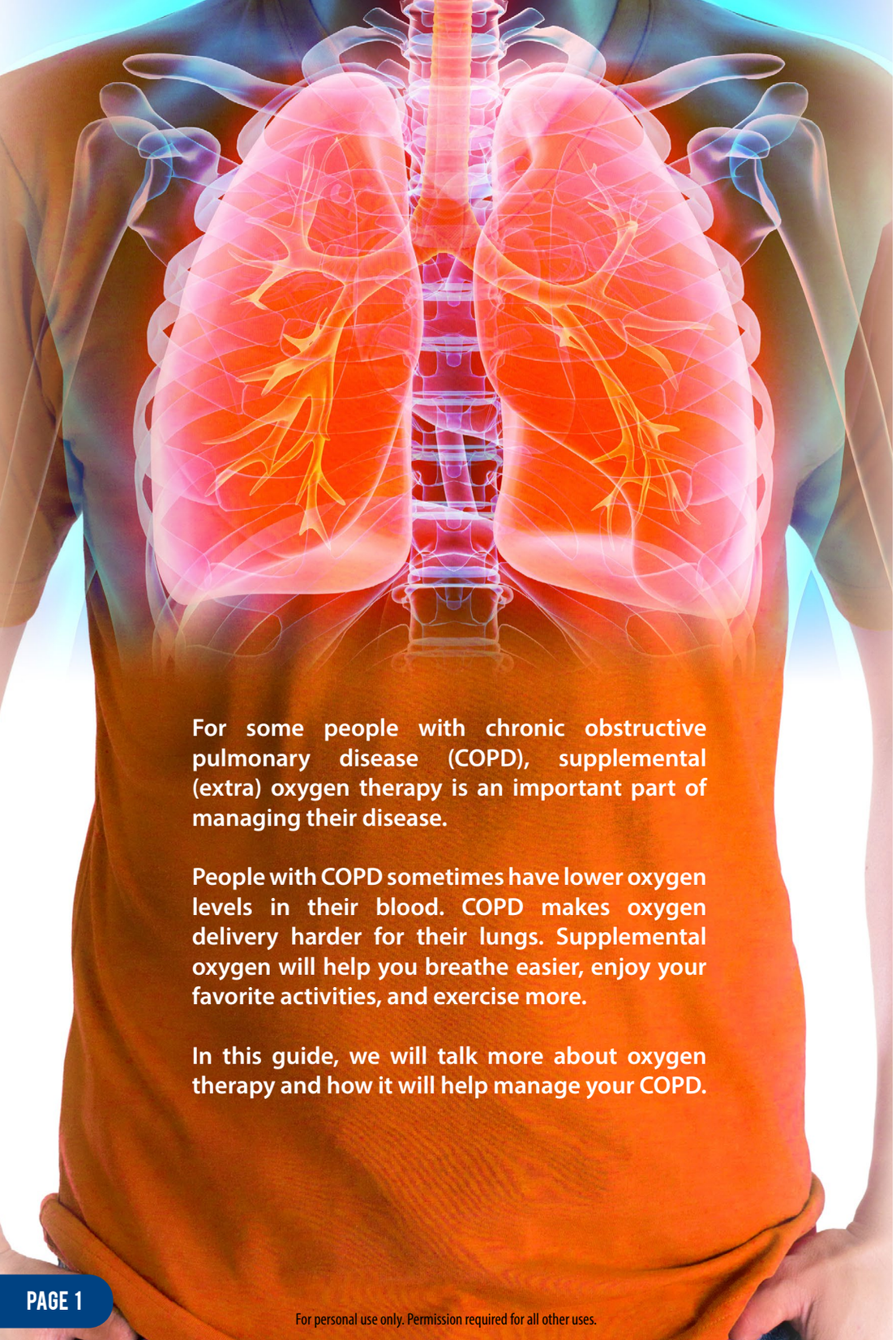


For some people with chronic obstructive pulmonary disease (COPD), supplemental (extra) oxygen therapy is an important part of managing their disease.

People with COPD sometimes have lower oxygen levels in their blood. COPD makes oxygen delivery harder for their lungs. Supplemental oxygen will help you breathe easier, enjoy your favorite activities, and exercise more.

In this guide, we will talk more about oxygen therapy and how it will help manage your COPD.





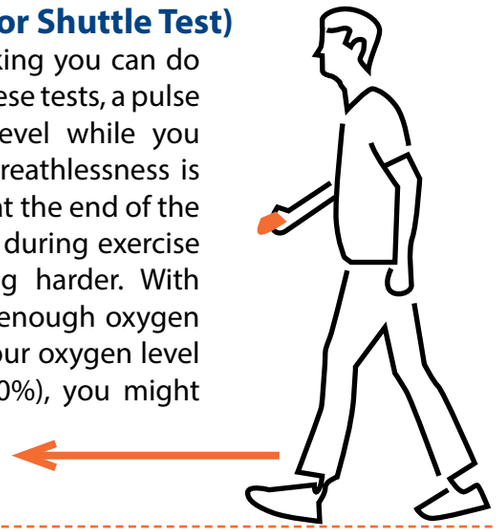
# HOW DO I KNOW IF I NEED OXYGEN THERAPY?

Your health care professional will decide if you need oxygen therapy. They may order some tests such as:

## Pulse Oximetry


A pulse oximeter is a special light that measures the oxygen levels in your blood. The light is placed on your finger or ear and indirectly measures your oxygen level. Normal readings are between 95-100%. However, it is not uncommon for people with COPD to have readings between 90-95%.

## Walk Tests (6-Minute Walk Test or Shuttle Test)



Walk tests measure how much walking you can do before you feel breathless. During these tests, a pulse oximeter measures your oxygen level while you walk for a certain period of time. Breathlessness is measured both during the test and at the end of the test. Your body needs more oxygen during exercise because your muscles are working harder. With COPD, you may not be able to get enough oxygen into your body. During the test, if your oxygen level drops too low (usually less than 90%), you might need oxygen therapy with activity.

## Arterial Blood Gas Test

An arterial blood gas test is the most accurate way to measure the oxygen level in your blood. This test is a little different than most blood tests. Instead of taking blood from a vein, it is taken from an artery. That is because arteries carry the oxygen to be used by the body. In this test, a small amount of blood is taken out of an artery in your wrist. This test gives an exact measurement of the oxygen in your blood. Normal blood oxygen values are between 80 and 100 mmHg.

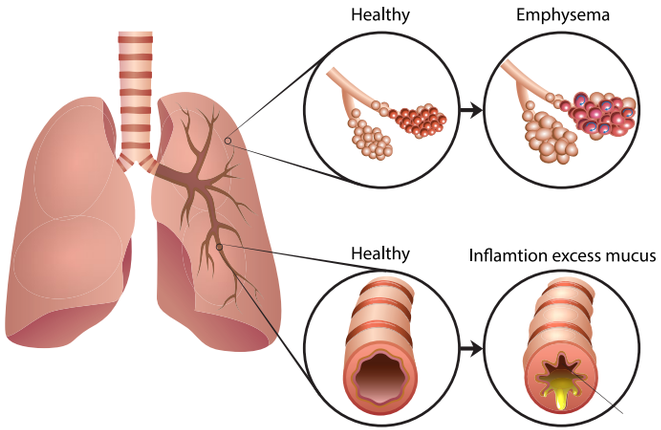
# WHAT FACTORS CAN AFFECT MY OXYGEN LEVELS?

## Loss of Lung Tissue (Emphysema) and Mucus Production (Chronic Bronchitis)

For some people with COPD, their lung tissue is damaged. Their lungs have trouble bringing oxygen into the bloodstream. This is common in people with emphysema.

Some people with COPD may produce extra mucus in their lungs. This also makes it hard for the lungs to bring oxygen to the body. This is common in people with chronic bronchitis.

People with these types of COPD may have lower oxygen levels. They may need oxygen therapy to help their bodies get enough oxygen.




## Activity and Exercise

Exercise makes our bodies work harder and need more oxygen. For some people with COPD, it is hard to get enough oxygen during exercise or activity. When this happens, oxygen therapy might be needed. Your health care provider may recommend using oxygen only during activity. If you already use oxygen, your health care provider may tell you to use a higher flow rate during activity.

## Acute Exacerbations of COPD

Exacerbations or "flare-ups" can affect your oxygen levels. Exacerbations are often caused by a virus. During an exacerbation, you may need oxygen therapy. This will help your body get the oxygen it needs.

Your oxygen needs should be re-checked by your health care provider one to three months after your exacerbation and re-checked for up to a year after your flare-up. You may not need oxygen therapy once you completely recover.



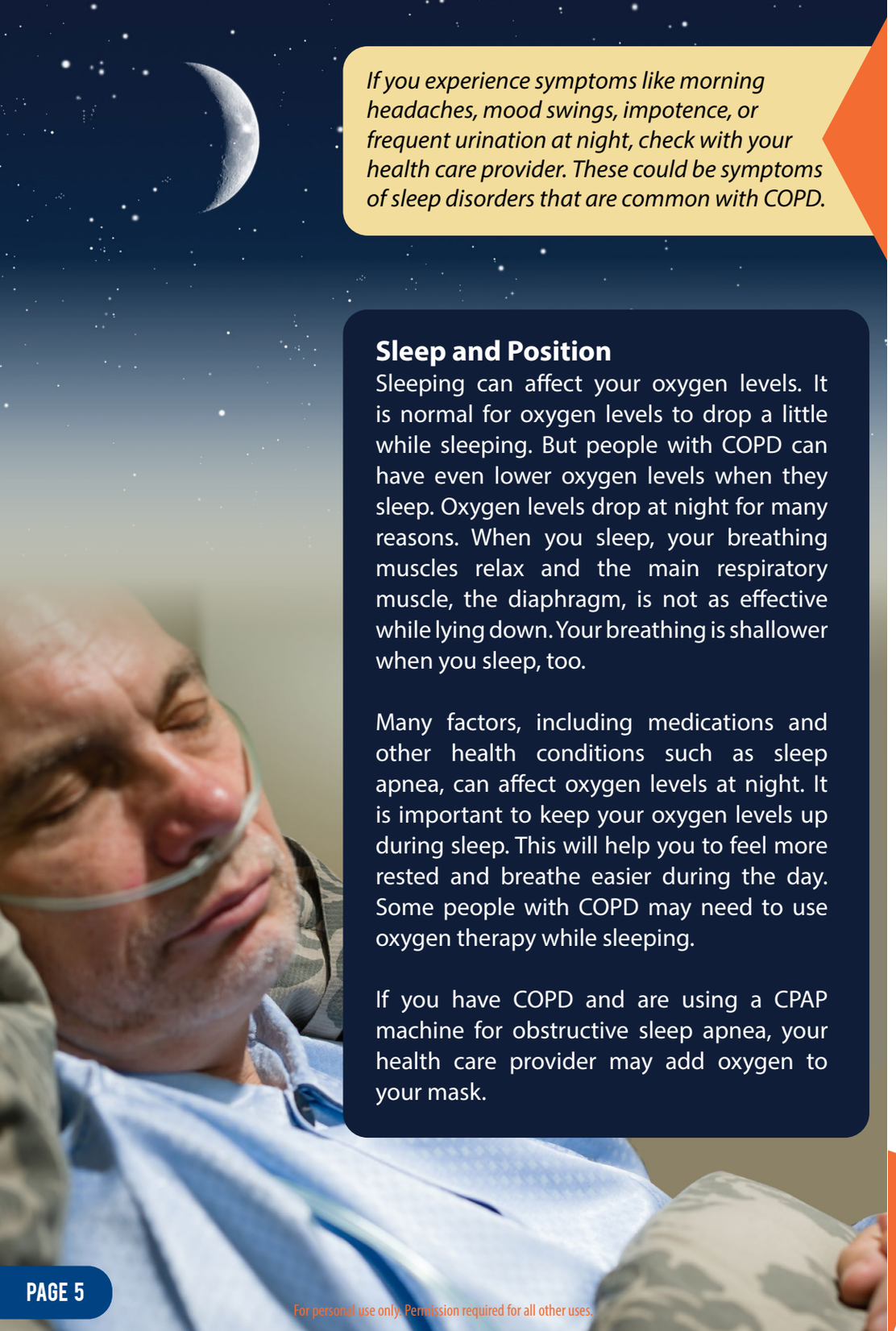


## Altitude

Changes in altitude affect everyone's oxygen levels. People with COPD are especially sensitive to changes in altitude. At higher altitudes, there is less oxygen in the air. This makes your lungs and heart work harder when you breathe. Changes in altitude can make you feel tired, dizzy, and breathless. If you are planning a trip to a place in a higher altitude, you may need oxygen therapy.

Or, if you already use oxygen, you may need to use more than you normally do. Be sure to check with your health care provider if you are planning a trip to a place at a high altitude.

For more information on traveling with oxygen, download the Traveling With COPD guide on the COPD foundation's website: www.copdfoundation.org.



*If you experience symptoms like morning headaches, mood swings, impotence, or frequent urination at night, check with your health care provider. These could be symptoms of sleep disorders that are common with COPD.*

## Sleep and Position

Sleeping can affect your oxygen levels. It is normal for oxygen levels to drop a little while sleeping. But people with COPD can have even lower oxygen levels when they sleep. Oxygen levels drop at night for many reasons. When you sleep, your breathing muscles relax and the main respiratory muscle, the diaphragm, is not as effective while lying down. Your breathing is shallower when you sleep, too.

Many factors, including medications and other health conditions such as sleep apnea, can affect oxygen levels at night. It is important to keep your oxygen levels up during sleep. This will help you to feel more rested and breathe easier during the day. Some people with COPD may need to use oxygen therapy while sleeping.

If you have COPD and are using a CPAP machine for obstructive sleep apnea, your health care provider may add oxygen to your mask.





# YOUR OXYGEN PRESCRIPTION

Oxygen is a medication. If you need oxygen therapy, you will need a prescription from your health care provider. Your prescription will give you important information. Write down your own oxygen prescription information below.

1. When to use your oxygen

_____

_____

2. How many liters per minute (lpm) of flow you will need

_____

_____

3. When to change your flow rate (such as during activity or sleep)

_____

_____

4. What kind of oxygen equipment you will be using

_____

_____

It is important to use the amount of oxygen that your doctor prescribed to you. Some people think that more oxygen is better. This is almost never true. In fact, too much oxygen can be bad for your health. Like all medication, oxygen must be used as prescribed. Talk to your health care provider if you have any questions about your oxygen therapy.

*Did you know that some people think oxygen is addictive? This is a myth. Some individuals with COPD need supplemental oxygen because their bodies can't get enough from the air around them. It is not addictive or dangerous when used as directed.*

# TYPES OF OXYGEN DELIVERY EQUIPMENT

To deliver oxygen to the body, you need equipment like a nasal cannula and an oxygen "reservoir" (container). This equipment can include:

**Nasal Cannulas:** These small plastic prongs deliver oxygen to your nostrils. The tubing attaches to a portable oxygen tank or concentrator.

**High Flow Nasal Cannulas:** These cannulas often look and work just like a regular nasal cannula. The difference is that these give you higher flow rates. Often, these cannulas are heated and used with a humidifier. This makes it more comfortable and less drying.

People who use nasal cannulas can use **extension tubing**. This will help them to walk around their house freely. You lose a little bit of oxygen flow with every piece of extension tubing you add. Don't use more than one extension tube (about 50 feet total length.) Talk with your professional about using extension tubing. You may need a higher flow rate if you use it.

**Oxygen Reservoir Cannulas:** This is a special type of nasal cannula. It has a pouch on the tubing that holds extra oxygen while you are breathing out. This allows more oxygen to be available when you breathe in.





# OXYGEN RESERVOIRS

There are two main types of oxygen reservoirs for home use: oxygen tanks and liquid oxygen.

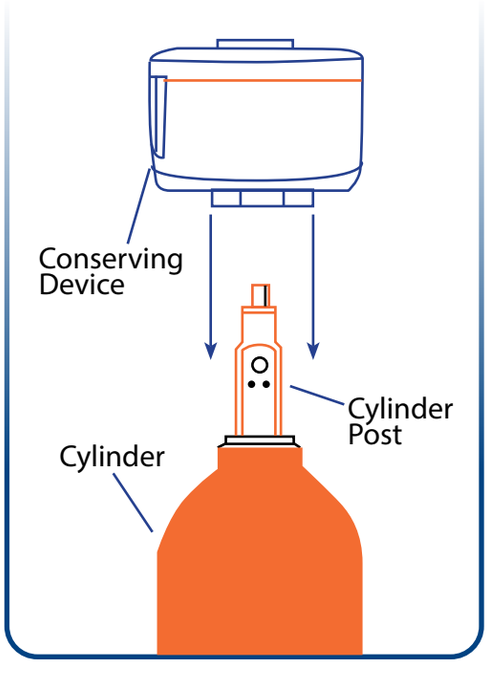

1. **Oxygen Tanks:**
   Oxygen tanks store oxygen at a high pressure. The largest tanks can hold thousands of liters of oxygen. They can last several days without needing to be refilled. Oxygen tanks are usually made of metal and can be very heavy. Smaller and somewhat portable tanks are also available. These have a limited amount of oxygen, so they do not last long.

2. **Liquid Oxygen:**
   Liquid oxygen is stored in large, heavy containers. They are filled by your oxygen company twice each month. The main liquid oxygen container is not portable, but you can fill smaller, portable oxygen systems from the larger container. Portable liquid oxygen systems don't run on electricity. You can take them along when traveling. They can be expensive though, and some insurance companies may not cover liquid oxygen. However, the portable units can last several hours, which can be very convenient.

*Concentrators run on electricity. You may need a backup system if the power goes out. Portable units are battery powered. Some portable concentrators can also be plugged into your car adapter.*

3. **Concentrators:**
An oxygen concentrator is a machine that extracts the oxygen from the air using a compressor; these can provide you with the necessary supplemental oxygen. The main unit is heavy but much lighter than the main oxygen tanks. Portable concentrators are also available and can be very convenient. They are smaller and easy to carry.

4. **Oxygen Conserving Devices (OCDs):**
Oxygen conserving devices help you to not waste your oxygen. They attach to your oxygen tank. OCDs give you a burst of oxygen only when you breathe in. This helps your oxygen supply last longer.








# OXYGEN SYSTEMS ADVANTAGES AND DISADVANTAGES

| Oxygen System | Advantages | Disadvantages | Maximum Liter Flow |
|---|---|---|---|
| **Tanks** | Can hold thousands of liters of oxygen<br><br>Widely available | Are large and heavy<br><br>Tanks must be securely stored | Standard flow meters deliver up to 15 liters per minute (lpm) |
| **Concentrators** | Continuously produce oxygen<br><br>Portable ones can be plugged into a car adapter for travel | Can be heavy<br><br>Require electricity to work<br><br>Portable systems need backup batteries and a charger | Recommended for up to 6 lpm |
| **Liquid Oxygen Systems** | Can fill portable systems from the larger container<br><br>No electricity needed<br><br>Portable ones can last up to 8 hours at 2 lpm | The large container is very heavy<br><br>Needs to be refilled by your oxygen supplier twice per month<br><br>Can evaporate over time<br><br>Liquid oxygen is cold and can burn your skin if spilled | Can deliver up to 15 lpm |

# WHO SUPPLIES MY OXYGEN?

Your health care professional will help you find an oxygen company that works with your insurance. The company will answer any questions you have. They will also show you how to use your equipment. And of course, you can ask your health care professional questions, too!

Here are some ideas about what to ask:

1. Will I be able to do my normal activities when I'm using this equipment?

_____

_____

_____

2. What should I do if I feel short of breath while using my oxygen?

_____

_____

_____

3. Who should I call if my equipment isn't working?

_____

_____

_____





# WILL MEDICARE COVER MY OXYGEN?

Oxygen is often covered by Medicare and other insurance plans. Your health care professional will help you work with your insurance and get your oxygen equipment. Medicare requirements for oxygen are listed below:

| You have had a blood gas study with the following results: | |
|---|---|
| **At Rest**<br>(you must meet one of these requirements) | • *Arterial PO2 at or below 55 mmHg<br>• Arterial oxygen saturation at or below 88% |
| **During Sleep**<br>(you must meet one of these requirements) | • Arterial PO2 at or below 55 mmHg<br>• Arterial oxygen saturation at or below 88%<br>• You have a decrease in the arterial PO2 of more than 10 mmHg<br>• There is more than 5% decrease from the baseline saturation for at least five minutes AND the decrease is associated with symptoms that are probably due to hypoxemia |
| **During Exercise**<br>(you must meet all of these requirements) | • Arterial PO2 falls to at or below 55 mmHg or oxygen saturation falls to at or below 88%<br>• Oxygen therapy improves shortness of breath<br>• Blood gas studies at rest without oxygen and during exercise with and without oxygen are documented in the medical record |
| *Arterial PO2 measures the "pressure" of oxygen (the dissolved oxygen gas tension) in your blood. It is not the same as the oxygen saturation number in a blood gas test or on your pulse oximeter. | |

**Medicare Requirements for Oxygen**

*Medicare has certain requirements for oxygen use, but your health care provider may prescribe oxygen outside of those guidelines based on your condition.*

**The blood gas study must be performed under the following conditions:**

- Performed by a qualified physician or laboratory service and NOT your oxygen supplier.
- Performed during an inpatient hospital stay during the last two days of the hospital stay AND as the last test obtained prior to discharge.
- Done no more than 30 days before the start of oxygen therapy AND the treating healthcare provider has seen and evaluated you no more than 30 days before the start of oxygen therapy.





# OXYGEN SAFETY TIPS

Oxygen makes any fire or spark burn hotter and faster. It should never be used around open flames. Here are some important safety tips for using supplemental oxygen.

1. Never allow smoking near your oxygen equipment.
2. Never use your oxygen around an open flame, and keep your oxygen equipment away from stoves, fireplaces, and other areas with possible sparks.
3. Don't use oil- or petroleum-based products on your equipment.
4. Make sure your oxygen tanks are stored securely and can't fall over.
5. Notify the fire department and gas, electric, and phone companies that you use oxygen therapy. Ask to be designated as a "priority service listing." This will help when there is a power or phone failure.

**For information on preparing for a power outage, see the COPD Foundation Disaster Preparedness Plan kit.**
**For help with ordering, email: info@copdfoundation.org or call: 866-731-2673 (COPD).**
**For a free download go to: copdf.co/dpp**

# RESOURCES

Learn more about oxygen use on the COPD Foundation website at *copdf.co/oxygen-therapy*

For information designed to help you manage your COPD and thrive with this condition, please visit The COPD Foundation Guides for Better Living at *copdf.co/guides* Click on "register" for free access.

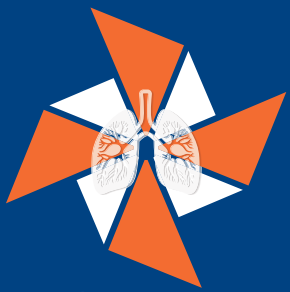
To hear more about what others with COPD are saying about oxygen use, visit the COPD Foundation's online community, at *www.copd360social.org*

American Thoracic Society "Oxygen Therapy" *https://www.thoracic.org/patients/patient-resources/resources/oxygen-therapy.pdf*





# NOTES



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Miami, FL | Washington, DC

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COPD360 Community Support Line:
1-866-316-COPD (2673)

Bronchiectasis and NTM Information Line:
1-833-411-LUNG (5864)


This guide has been reviewed by members of the
COPD Foundation Guides for Better Living Review Team