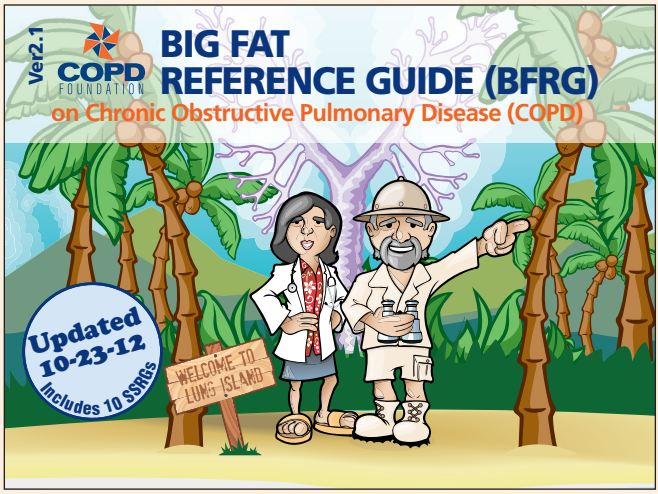
COPD Foundation's
Slim Skinny Reference Guide® (SSRG)

Oxygen Therapy

COPD FOUNDATION



This "Slim Skinny Reference Guide: Oxygen Therapy" is part of the COPD Foundation's *Slim Skinny Reference Guide*® series which have been taken from the *COPD Big Fat Reference Guide*®.

To access the complete *COPD Big Fat Reference Guide*®, visit www.copdbfrg.org.

The mission of the COPD Foundation is to develop and support programs which improve the quality of life through research, education, early diagnosis, and enhanced therapy for persons whose lives are impacted by Chronic Obstructive Pulmonary Disease (COPD).

What is Oxygen Therapy?

The lungs work by bringing in the "good air" and getting rid of the "bad air." You breathe in oxygen and it is passed into your blood through the tiny air sacs or alveoli in the lungs. Carbon dioxide is the waste that is created when your tissues and muscles are active. Carbon dioxide is passed out of the blood and into the lungs. You breathe out carbon dioxide. If you have lung disease you may, at some point, need oxygen therapy. Oxygen therapy means you breathe in extra oxygen from an oxygen tank. You may need this oxygen because the oxygen level in your blood is low. Chronic obstructive pulmonary disease (COPD*) can damage your lungs. This makes it hard for your lungs to put the oxygen you breathe in, into your blood. Oxygen therapy is a medical treatment. It must be prescribed by a doctor. For people with COPD, oxygen therapy can be a helpful part of their treatment plan.

***COPD** is an umbrella term used to describe the progressive lung diseases including: emphysema (em-fa-see-ma), chronic bronchitis (kron-ick-brawn-kie-tis), refractory (re-frac-ta-ree) asthma (az-ma) and some forms of bronchiectasis (brawn-key-eck-tay-sis). If you have COPD you have trouble moving air in and out of your lungs because of damage to the airways and/or the air sacs.*

What Happens to My Body When I Have Low Oxygen Levels?

When the oxygen level in your blood is low, it is called **hypoxemia** *(hi-pock-see-me-ah).* Low oxygen levels can affect many parts of your body.

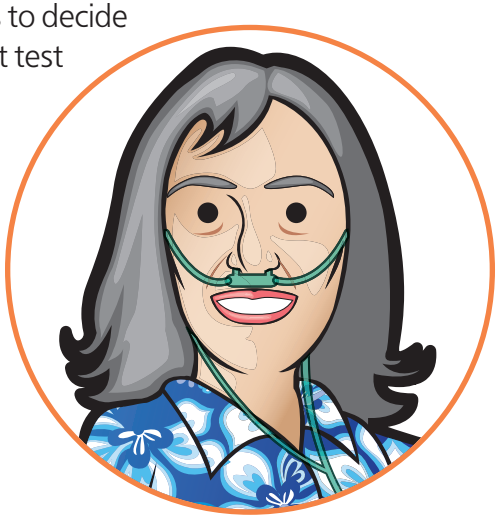
Low oxygen in the blood can cause:

- The tubes of the lungs to become smaller. This can cause the heart to pump harder. Over time this strains the heart. It can become larger and weaker.
- Your body to make more red blood cells. Red blood cells carry oxygen through the body. By creating more red blood cells, the body is trying to deliver more oxygen. In some people this can cause blood clots, headaches and high blood pressure.
- Harm to your brain. Your ability to pay attention may be reduced. You may have memory and even speech problems. You may have trouble problem-solving and doing complex tasks.
- Problems exercising. Your ability to exercise or do physical activities may be reduced. Your muscles may become weaker.

Very low levels of oxygen in your blood can lead to confusion, coma and even death.

Deciding If You Need Oxygen Therapy

Your doctor will use a couple of tests to decide if you need to be on oxygen. The first test is the most accurate. This test of **arterial** *(r-tear-ree-el)* **blood gases** can tell how well your lungs are getting oxygen into your blood and carbon dioxide out of your blood. For this test, blood is taken out of your arm, usually near your wrist. The blood is taken from an



Oxygen Therapy CAN Help

If the oxygen in your blood is low, getting oxygen therapy can help. In fact, getting oxygen can reverse all those bad effects that happen when blood oxygen levels drop. Oxygen can reduce shortness of breath. It will allow you to exercise longer and harder. It will help you think and remember better. And it will help you sleep better. Oxygen therapy CAN make a difference in how you feel.

artery. Arteries are large blood vessels that carry blood filled with oxygen from the lungs to the rest of the body. This test measures both the oxygen and carbon dioxide levels in your blood. Knowing how much carbon dioxide is in your blood is important to your doctor in deciding if you need to receive oxygen.

The second test to measure your blood oxygen level is **pulse oximetry** *(ahk-sim-e-tree)*. But this test is done without taking a blood sample. The amount of oxygen is only *estimated.* A pulse oximeter is used for this simple test. This small device is clipped to your finger or an ear lobe. It is able to read the oxygen level directly through your skin. This pulse oximeter can be used by anyone. It gives fast results. But pulse oximetry cannot measure your blood carbon dioxide level or other elements in your blood. Pulse oximetry is not as reliable as the arterial blood gases test. But it can be done while you are exercising or sleeping.

The decision to try oxygen therapy may be made during a hospital stay. A lung infection or **exacerbation** *(x-saa-cer-bay-shun)* can cause oxygen levels to drop. If oxygen is started during this time, the need for it should be reviewed one to three months later. You may not need long term oxygen therapy.

Before your doctor writes a prescription for oxygen, there are guidelines that must be met. The results of your blood tests will show if you meet these guidelines. The medical guidelines must be met for Medicare or insurance to pay for the oxygen costs. (For more information on these guidelines, see the COPD Foundation's Big Fat Reference Guide®, Chapter 5-B.)

Choosing an Oxygen Supplier

After you have a prescription for oxygen, you will need to choose an oxygen supplier. First, check with your insurance provider. They may have contracts with specific suppliers. If you have the freedom to choose, shop for the best service. Asking the questions below should help you compare companies:

- Are you a national company?
- Where are you located?
- What systems do you provide? Why do you provide those systems?
- How often are deliveries made?
- Will you help make plans for oxygen delivery if I decide to travel?
- What is the response time in case of emergency?
- What is the turn-around time to replace bad equipment?
- How often will the respiratory therapist come to my home?
- How often will equipment be checked or serviced?
- What will this cost me?
- If I purchase a system will you still provide service?
- Do you have customer feedback you can share?
- Are you licensed and accredited? By which groups? Have you been accredited by Medicare/Medicaid? By the Joint Commission on Accreditation of Health Organizations? (Both groups have standards that must be followed.)

Your Oxygen Prescription

The prescription your doctor writes will include:

- *Info about if you need oxygen for rest, exercise and/or sleep. And how much.*
- *How many hours a day oxygen should be used.*
- *Info about if you should use a pulse oximeter during activity and sleep.*
- *What type of oxygen system you should use.*

Types of Oxygen Systems

There are two types of oxygen systems: *stationary* and *portable*. There are also storage systems that can be used to fill portable systems. This combines the two types.

Stationary Systems

(These systems can provide a lot of oxygen. But they limit movement.)

System	Features
Oxygen Concentrator	Has an electric motor. Needs electricity source. Removes nitrogen from room air to make oxygen. Relatively small. Weighs 22-70 lbs. Can have 50 ft tubing for movement. Must be in open, ventilated area. Must have regular check-ups and filter changes. *MUST have back-up oxygen in case of power failure.*
Reservoir for Liquid Oxygen	Liquid oxygen in large tank. Weighs about 124 lbs. Tank is filled by supplier twice a month. No electricity needed. Good for use at home or for filling portable systems. *Caution: must be used to prevent spills. Liquid oxygen can injure skin on contact.*
Compressed Gas Oxygen	Large steel or aluminum tank. Very heavy. Not easily moved. Must be secured to prevent falling over. Good as back up to concentrator. *Not good for someone needing continuous flow oxygen.*

Portable Systems

Oxygen Concentrators	Lighter portable models. Have electrical connections for cars. Or can have battery packs.
Portable Liquid Oxygen Units	Can be filled easily from large liquid reservoir. May come with a conserving device.* Allows for longer periods away from home.
Compressed Gas in Smaller Cylinders	Portable. Small. Weighs between 0.7 lbs and 7.9 lbs. With a conserving device,* can last (at 2 liters/minute) from 1 to 5 hours. Good as back-up for concentrators. Not good for continuous, long-term oxygen.

**See side bar on following page about conserving devices*

Portable Systems

Evergo Portable OxygenConcentrator
Photo courtesy of Phillip Respironics

Invacare XPO2™ POC
Photo courtesy of Invacare Corporation

Eclipse POC
Photo courtesy of SequalTechnoloigies, Inc.

LifeChoice® Portable Oxygen Concentrator
Photo courtesy of Inova Labs

Ways to Take In Oxygen or Oxygen Delivery Systems

In addition to choosing a type of oxygen system, you will need to decide how you want to receive or take in the oxygen. There are four ways the oxygen can be delivered to you. These are:

- **Nasal cannulas:** This is plastic tubing that is connected to your oxygen source. On the other end are two small prongs that rest in your nose. The tubing is held in place by also resting on your ears. This device is simple and cheap. The oxygen is diluted with room air before it enters the lungs. Oxygen is delivered in continuous flow. This can be drying to the nasal passages.
- **Face masks:** This plastic mask fits snugly over the mouth and nose. It delivers a higher concentration of oxygen. Can be uncomfortable. Makes talking hard. Cannot be worn while eating and drinking.
- **Transtracheal Oxygen:** This is a catheter (a plastic tube) inserted through the skin of the neck into the windpipe below the Adam's apple. Oxygen is delivered directly

Oxygen Conserving Devices

Oxygen conserving devices help reduce the size and weight of portable oxygen systems. By reducing the needs for replacing or refilling tanks, costs are reduced. The types of conserving devices are: reservoir cannulas and pulsed delivery systems. For more information about these conserving devices, see the COPD Foundation's Big Fat Reference Guide®, *Chapter B-5.*

into the windpipe or **trachea** *(tray-key-uh)*. The oxygen is not diluted. So, your required amount of oxygen can be delivered with a reduced oxygen flow rate. This makes a tank last much longer. So costs are lower. This is also a great option for people who want to remain active. It requires detailed self-care instructions. It is not a good option for people who have frequent infections or exacerbations.

Did you know that...

- *It is estimated that 1 million Americans use home oxygen.*
- *Home oxygen therapy costs more than $1 billion a year.*
- *It is the most expensive, non-surgical treatment reimbursed by Medicare.*

Will Medicare or Insurance Cover Oxygen Therapy?

Home oxygen therapy and equipment is covered by Medicare under "durable medical equipment." Medicare pays a monthly amount for home oxygen. It covers oxygen equipment and supplies. Medicare and most insurance companies pay 80 percent of the allowable costs for a stationary system. But insurance policies can differ. Talk with your insurer. Your doctor may prescribe a specific system for you. But your supplier may find it hard to provide this system. They may not get paid enough by Medicare or your insurance for some systems. You, your doctor and your supplier will need to work together to solve this problem.

Tips for Safety

BE SAFE! Know these SAFETY TIPS for using Oxygen

- Oxygen canisters should be kept 5-10 feet away from gas stoves, fireplaces, woodstoves, candles and other open flames.
- Do not use electric razors while using oxygen. Sparks could occur.
- Do not use oil, grease or petroleum-based products on or near the equipment. Avoid petroleum-based lotions and creams on your face or upper chest. These products can catch on fire very easily.

- Make sure there is NO SMOKING in your home or car when oxygen is in use.
- Tie oxygen cylinders to fixed objects. They can become shooting missiles if knocked over.
- Be careful around oxygen tubing to avoid tripping.
- Know the safety checks provided by your oxygen supplier. Keep their phone numbers (including emergency contact) near a phone.
- Do not try to fix broken equipment.
- Have smoke detectors in your home. Make sure they are working. Check them monthly.
- Keep a fire extinguisher in your home. Have an escape route planned in case of fire.
- Let the fire department, gas and electric and phone companies know when you start receiving oxygen. Ask for a "priority service listing." This will help when there is a power or phone failure.

And Finally...Can I Really Live My Life on Oxygen?

Being told you need to be on oxygen can make you feel frustrated, scared and confused. You may feel people will view you as "handicapped." You think it will be a hassle to be attached to an oxygen tank. You think it will change all the plans you had. And, finally, thinking about being on oxygen forces you to realize how serious your lung disease really is. If you are thinking or feeling any or all of the above, consider this:

Oxygen therapy will help you feel less tired, less out-of-breath and healthier. You may actually be able to DO MORE than you could before.

It is one of the most important ways you can manage your lung disease.

AND, it may help you live longer.

NOTES

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This Slim Skinny Reference Guide® (SSRG) was created by the COPD Foundation.

Take Action Today. Breathe Better Tomorrow.