



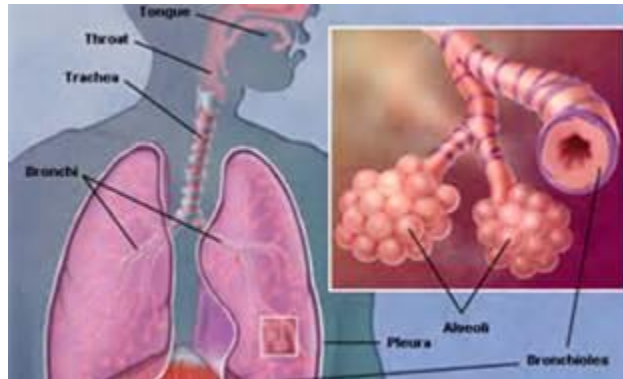
Lifespan Cardiovascular Institute

**Rhode Island Hospital • The Miriam Hospital
Newport Hospital**

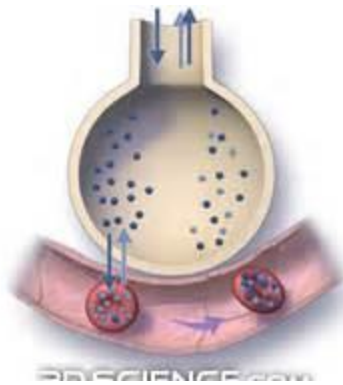
Delivering health with care.®

Center For Cardiac Fitness
Pulmonary Rehab Program
The Miriam Hospital

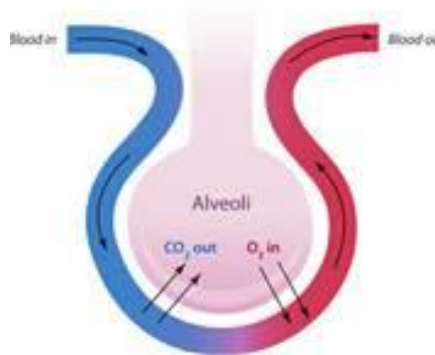
How does the Oxygen get into your body?



- When you inhale room air, you are breathing in about 21% Oxygen and 1% Carbon Dioxide
- The air flows down through your lungs until it gets to the very ends of the airways.
- These parts of the lung are called alveoli



Pulmonary Gas Exchange



- The alveoli are like air bubbles. This is where the oxygen transfers into your blood stream.
- At the same time, the CO₂ transfers back into your lungs so you can blow it out.
- Different lung diseases can interfere with the O₂ and CO₂ trading places in different ways.

2 ways oxygen can be measured

- **Blood Gases**
 - ABG: arterial blood gases
 - This test uses a blood sample to determine how much O₂ and CO₂ you have in your body.
 - Less than 55 mmHg would qualify someone for home O₂



2 ways oxygen can be measured

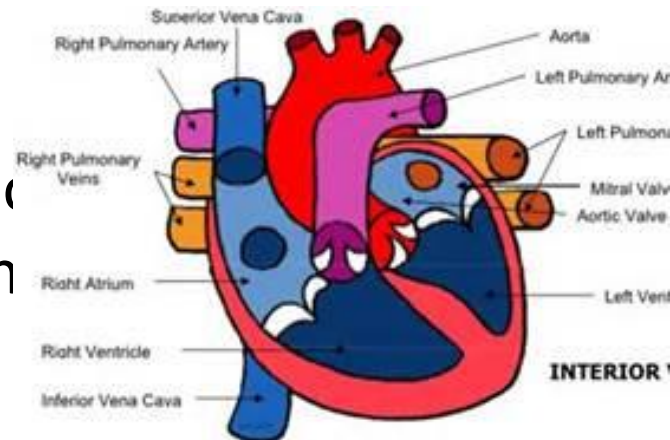
- **Pulse Oximetry**

- This device is an estimate of how much O₂ is in your blood.
- It can only measure O₂, not CO₂ levels
- Not as accurate as an ABG, but convenient
- SPO₂ of <88% would qualify someone for home O₂



What happens when your O2 level is too low?

- Hypoxemia means that the O2 levels in your blood are too low. It can cause some long term problems:
 - Vasconstriction: blood vessels get narrower, so the heart has to work harder to pump blood through the lungs. Over time the heart can weaken because of this.
 - The body may make compensate for the low O2 levels such as blood clots, high blood pressure, and other problems



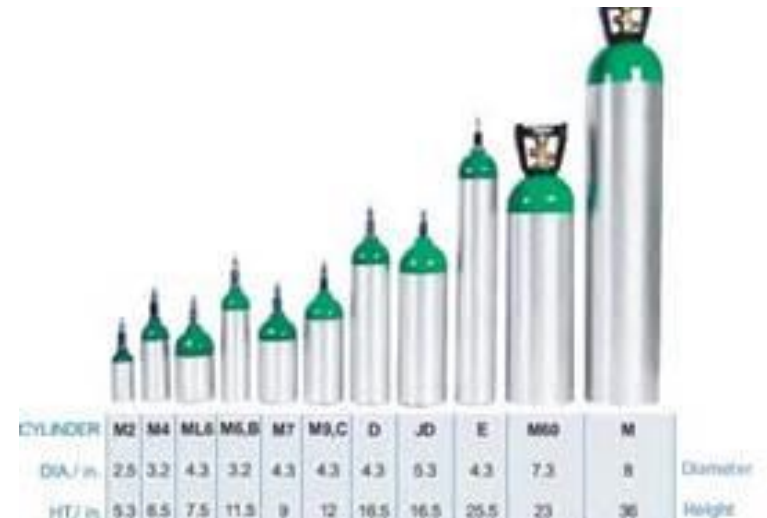
Other systems can be affected as well:

- Mobility problems:
 - Low endurance
 - Muscle fatigue
- Brain function:
 - Poor concentration/attention
 - Memory problems
 - Problem solving



Does extra O2 help?

- **Oxygen therapy can help with:**
 - Decreasing shortness of breath
 - Help prevent heart failure
 - Improve activity levels
 - Improved alertness
 - More restful sleep
 - Increased survival rates



Will I get addicted to Oxygen?

- Oxygen is not addictive. It is a medication that is used to treat a chronic illness. It can offset the effects of low oxygen in the blood on your body.
- “The benefits of O₂ are well-known and measureable. Compare the benefits with feeling tired, out of breath and not well”



Why do I feel so out of breath when my O2 reading is in the 90's??

- The oximeter reads your O2 levels only, not your CO2 levels. The fatigue and breathlessness can also be related to muscular weakness and poor endurance.

- Why do I feel fine when my O2 reading is in the 80's?

- Some people can adjust to a certain oxygen in their body over time and decrease. The effect is still the same in the body.



Types of Oxygen-There are way more options available now!



O2 Safety

- O2 canisters should be kept at least 5-10 feet away from gas stoves and open flames
- Do not use an electric razor while on O2
- Do not use oil, grease or petroleum products on the O2 equipment or on your body
- No smoking should occur in the home or car while O2 is in use
- **Use caution with the tubing so you don't trip**
- Make sure that you have working smoke detectors in the home.