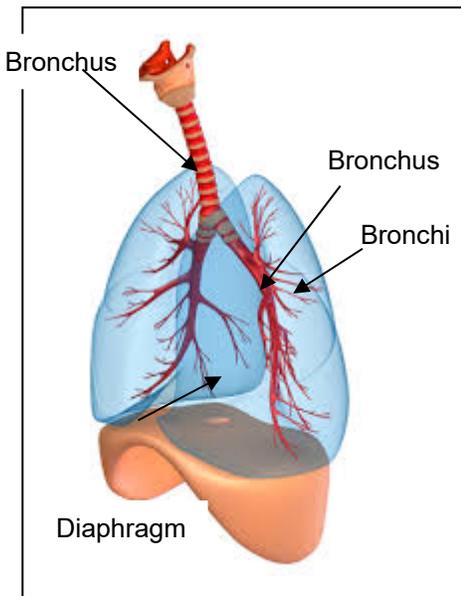
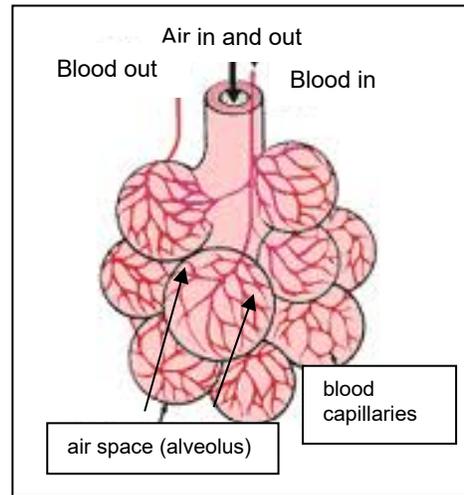


OXYGEN ADMINISTRATION

Vocabulary:

Alveoli: Tiny balloon-like sacks at the end of a bronchi.



Bronchus: One main air passage into each lung. Originates at the end of the trachea.

Bronchi: Smaller air passages originating from the bronchus in each lung. There are many of these.

Capillaries: Very tiny blood vessels in the wall of the alveolus that absorb oxygen that is distributed to the body.

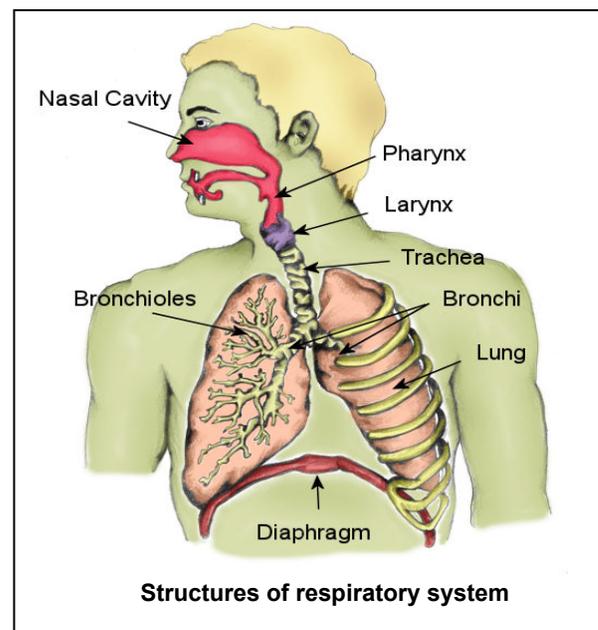
Diaphragm: Dome shaped muscle separating the chest from the abdomen. It is the muscle that makes breathing happen.

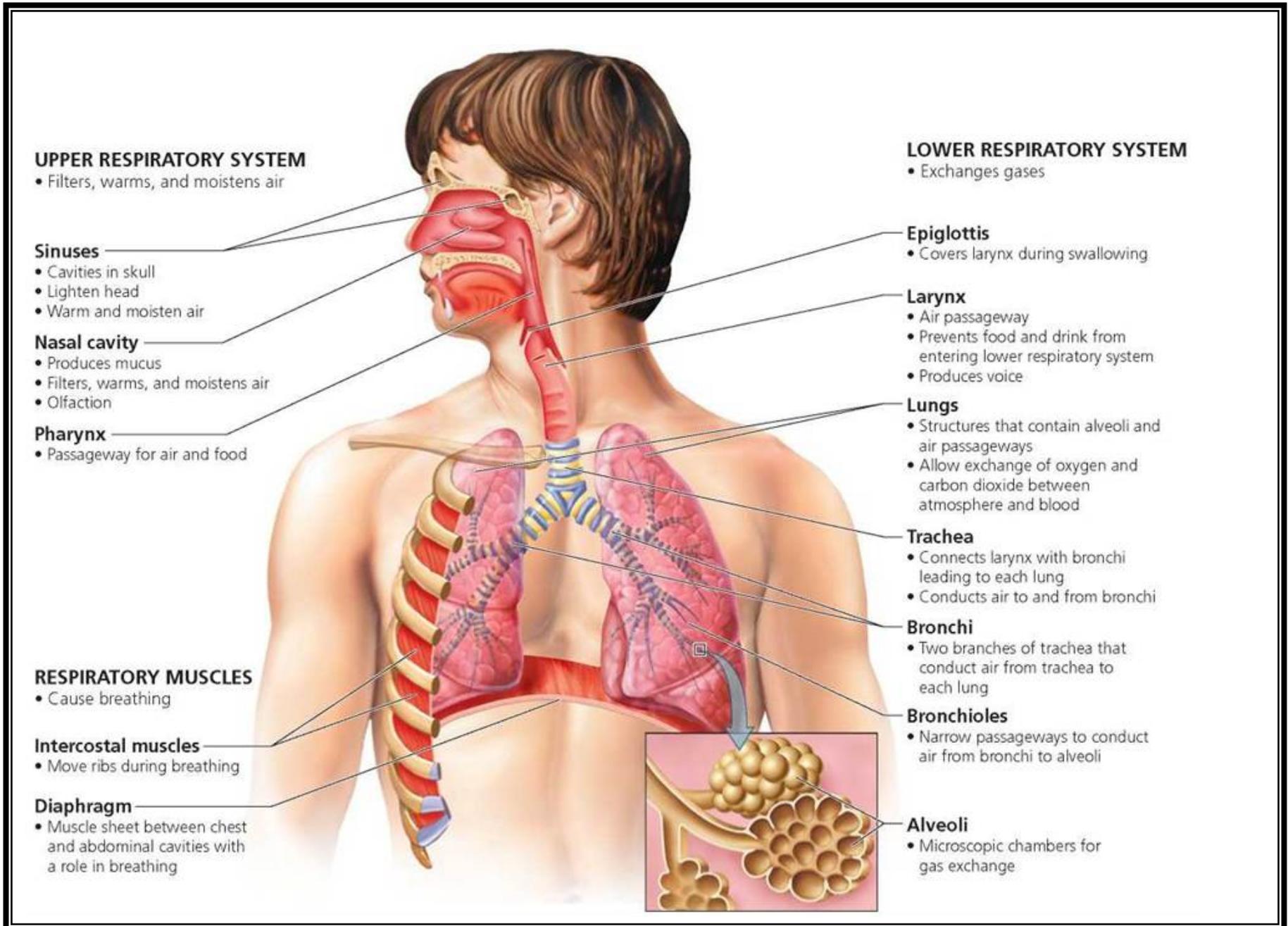
Lungs: Main organ for the respiratory system. Contains 5 lobes – 2 on the left and 3 on the right. They supply oxygen to the body as well as eliminate carbon dioxide from the body.

Epiglottis: A flap of cartilage at the entrance of the trachea. It closes over the trachea to prevent food and fluid from entering the windpipe and lungs.

Trachea: Windpipe. Tube that allows air to pass from the back of the mouth into the lungs.

Pleura: Thin membrane with 2 layers. Fluid between these 2 layers provides for lubrication allowing for smooth, uniform expansion and contraction of the lungs during breathing.





Administration of Oxygen (O₂)

Oxygen: What is it?

O₂ is a colorless, odorless gas. It is essential for life. O₂ in the air is absorbed through the lungs and into the blood where it binds to the hemoglobin in red blood cells. It's the circulating red blood cells that distribute oxygen throughout the body.

Why is O₂ used?

- ◀ Decrease shortness of breath and fatigue.
- ◀ To restore O₂ blood levels to normal.
- ◀ Improve sleep in those with sleep apnea.
- ◀ Increase life span of some people with COPD (chronic obstructive pulmonary disease).



Regulator on oxygen tank



Oxygen tank on a transporter

How can O₂ be given?

- ◀ By nasal cannula
- ◀ By mask

A person may use a concentrator – a device that extracts oxygen from the air;

OR

A person may use oxygen supplied from an oxygen tank

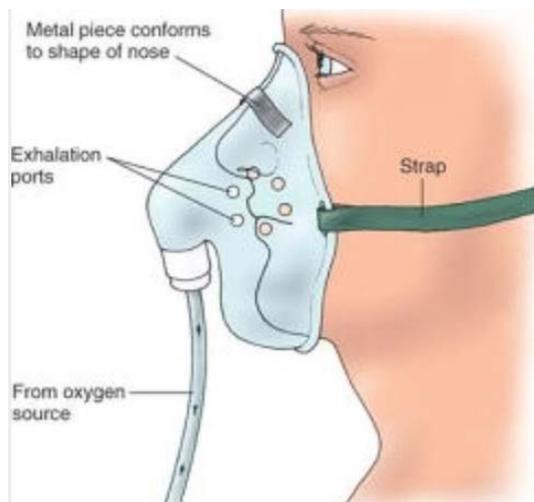


Nasal cannula (small flexible plastic tubes) directs oxygen into the nose.

Portable Oxygen Tank

Woman with portable O₂ tank

Person wearing O₂ mask



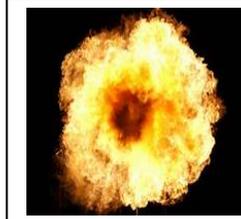
Man using oxygen concentrator



OXYGEN THERAPY

Are there any safety hazards with use of oxygen (O₂) therapy?

◀ **Fire or explosion is a huge safety hazard.**



◀ **NO SMOKING WHILE RECEIVING O₂ THERAPY!!**

◀ A person on O₂ therapy may not be in the same room where a flame is active or where electrical equipment is in use. O₂ is highly flammable.

◀ Avoid materials that cause static electricity. Use cotton blankets.

◀ Do not use acetone or any other volatile material when oxygen in use.

◀ Anyone transporting an individual on oxygen needs to know how to shut off the tank if it is hissing or there is an accident.



Is there a limit on the amount of time the person can receive oxygen?

No. Oxygen may be given as needed, intermittently, or continuously – depending on the needs of the person.

What care does the person on oxygen need?

◀ Protect the person's nose, face and ears from irritation caused by nasal cannula or face mask. Use a water-based lubricant where the mask or cannula rub the face, nose or ears. Vaseline® or petroleum jelly is NOT water based!

◀ Be sure to strictly follow safety measures to prevent fire or explosion.

◀ Provide frequent opportunities for the person to keep their mouth and throat moist.

Side Effects of Oxygen Therapy Can Include:

- Fatigue (tiredness)
- Morning headaches
- Dry and/or bloody nose
- Skin irritation from face mask or nasal cannula

Whose responsibility is it to order more supplies?

Getting more supplies is everyone's job!



Call equipment provider for refills when you see supplies are getting low. Record and communicate with others that you reordered supplies.

What are the signs of receiving too little oxygen?

- ◀ Confusion
- ◀ Headache
- ◀ Restlessness
- ◀ Blurred vision
- ◀ Tunnel vision
- ◀ Cyanosis (bluish tint to the lips, earlobes, and / or nail beds)
- ◀ Rapid heart rate
- ◀ Elevated blood pressure
- ◀ Rapid breathing
- ◀ Shortness of breath
- ◀ Excessive tiredness

What are the signs of receiving too much oxygen?

- ◀ Slow respiratory rate < 8 breaths/min
- ◀ Difficult to wake up



When do I need to call a health-care professional (HCP)?



- ◀ If you see any signs of too much or too little oxygen (see boxes to left)
- ◀ For any of the side effects listed on page 4
- ◀ If the equipment is not working right
- ◀ If the person is refusing oxygen therapy or insisting you change the number of liters given
- ◀ The person is having trouble sleeping because they cannot breathe well

How do I clean oxygen equipment?

Oxygen Concentrator

- ◀ Clean at least once a week. The outside of the concentrator can be wiped down with a damp cloth and a mild dish detergent. Never spray the cleaner directly onto the machine.
- ◀ The oxygen concentrator may have exterior filters that need to be cleaned at least once a week. They can be easily removed and placed under warm running water. Excess water should be squeezed out and the filters should be left out to air dry.

Cannula / Mask

- ◀ Clean daily; if visibly soiled; or after intermittent use. Use mild dish detergent and rinse.
- ◀ Towel or air dry. ◀ Replace every 2 (two) weeks.

Tubing

- ◀ Replace monthly.

Water Trap

- ◀ Empty as needed.
- ◀ Remove at least twice a week and clean with mild dish detergent and rinse.

Humidifier Bottle

- ◀ Use only distilled or sterile water.
- ◀ Empty daily and replace with fresh distilled or sterile water.
- ◀ Clean and disinfect at least twice a week. First wash with mild dish detergent and rinse well; then soak in 1 part water and 1 part distilled white vinegar. Rinse thoroughly.



Distilled white vinegar



Distilled Water

Oxygen is a medicine. It is a gas. As a medicine, you are expected to follow doctor's orders precisely as written on the MAR. The dose (amount) is the flow rate per minute that will be displayed on the cylinder gauge. The flow rate must be set only at the prescribed rate. Example: 2 liters per minute.

Below is a listing of precautions you MUST take when oxygen is in use. To help you grasp the precautions more clearly, they are arranged in categories according to where the person might be when using their oxygen.

Smoking

- ◄ **No one should be smoking** when oxygen is in use. If the individual using oxygen insists on smoking, they will need to remove their mask / cannula. Turn off the oxygen, remove mask / cannula from their face and body. Then, have them wait 10 minutes after turning the oxygen off before smoking. Anyone else in the house that insists on smoking, must go outside.
- ◄ **Post "No smoking" signs in every room of the home where oxygen is in use.**

Precautions while working in the kitchen

- ◄ When the stove is in use and the person is in the kitchen, turn off their oxygen and remove their mask / cannula.
- ◄ When using electrical devices such as can openers, mixers, blenders, knives, or skillet while the person using oxygen is in the kitchen, turn off the oxygen and remove their mask / cannula.
- ◄ A person wearing a mask or cannula must be at least 10 feet away from the stove or active electrical appliances. Tanks or concentrators must also be at least 10 feet from the stove or electrical appliances in use even if the O₂ is turned off.

Precautions with use of health, hygiene and beauty products

- ◄ Products containing oil or grease, such as body oil and some moisturizers can easily ignite. Keep oils and grease away from where oxygen is in use. This includes petroleum products such as lip balm and nail polish remover (acetone).
- ◄ Aerosol sprays containing combustible materials (i.e. hairspray, air fresheners) should not be used while the oxygen is in use.
- ◄ Electric razors or hairdryers should not be used while oxygen is on. Battery powered razors and hairdryers can be used when oxygen is on.
- ◄ Appliances that have a control switch (i.e. heating pad, vibrating devices, electric blankets, electric toothbrushes) should not be used because the control switch could generate a spark.

Precautions while tinkering with projects/crafts

- ◄ No one should use petrol, cleaning fluids, or anything in an aerosol can while oxygen is on.

Oxygen Cylinder (contains compressed oxygen gas)

- ◄ Keep oxygen cylinders at least 10 feet away from a heat source (heater, gas stove), open flame or electrical devices.
- ◄ Store oxygen cylinder (tank) upright in a well-ventilated area away from flame, heat source or direct sunlight. Do not cover the cylinder with cloth or plastic. Do not store in closets, behind curtains, or other confined spaces. Secure cylinder on a stand with a strap to hold it in place.
- ◄ Handle the cylinder gently to avoid damaging it.
- ◄ If transporting oxygen cylinder, do not lay it down in the bed of a truck or trunk of a car. Place it carefully on the back seat of the car. Secure it so it does not roll around, but stays in place.
- ◄ Be sure to use the correct pressure gauge and regulator.
- ◄ When the cylinder is almost empty, close the valve and mark the cylinder as empty. Do not store full and empty cylinders together.

Oxygen Concentrator (these filter nitrogen out of the air, providing almost pure oxygen)

- ◄ Be sure the concentrator is plugged into an electrical outlet. Never use an extension cord or power strip.
- ◄ Keep concentrator away from curtains or drapes and place in a well-ventilated area.
- ◄ Do not store or keep concentrator in a closet or other confined space.
- ◄ Be sure the concentrator is inspected and serviced per the supplier's instructions.

General Precautions

- ◄ Be sure all electrical equipment near the oxygen is properly grounded.
- ◄ Be sure you have smoke alarms in the home.
- ◄ Candles, matches, wood stoves and sparking toys can serve as ignition sources. Keep these items out of the home.
- ◄ Keep oxygen equipment clean and dust free.
- ◄ Keep people at least 10 feet away from an open flame if oxygen is flowing. This includes fire places, wood burning stoves and gas stoves.
- ◄ Avoid build-up of static electricity by using a humidifier in the winter when the heat is on and the air tends to be dry. Encourage the person to wear cotton. Avoid wool and nylon as these fabrics attract static electricity.
- ◄ Be aware of oxygen tubing dragging on the floor to prevent falls or tangles.

Checklist for Oxygen Therapy

- _____ 1. Check tank for adequate oxygen supply
- _____ 2. Explain procedure to person
- _____ 3. Explain safety precautions
- _____ 4. Wash your hands and put on gloves
- _____ 5. Connect the nasal cannula or mask to the oxygen source
- _____ 6. Adjust flow rate as directed by healthcare professional (prescription)
- _____ 7. Check that oxygen is flowing from cannula or mask
- _____ 8. Place cannula in person's nostrils, or place mask on person's face
- _____ 9. Adjust cannula or mask as necessary for person's comfort
- _____ 10. Instruct person using a cannula to breathe through their nose with mouth closed
- _____ 11. Recheck the tank for oxygen supply
- _____ 12. Assure proper flow rate
- _____ 13. Remove gloves, wash hands
- _____ 14. Document:
 - ◀ rate of oxygen flow
 - ◀ person's response to cannula/mask
 - ◀ any comfort measures initiated
 - ◀ problems encountered with use of cannula/mask
 - ◀ measures taken to address problems encountered
- _____ 15. Recheck flow rate and oxygen supply, and flow from cannula every 2 hours. Also before and after transition to different activities and locations. Document findings.
- _____ 16. Check pulse oximeter reading as directed by healthcare professional. Document outcome. Continue or discontinue oxygen as prescribed.
- _____ 17. When oxygen gauge is near or at the red zone, change tank and repeat steps 2-14
- _____ 18. The cannula/mask should be removed and cleaned if oxygen is not flowing, after use of PRN oxygen, and if visibly soiled.

Trainee name: _____ **Date:** _____

_____ **Instructor initials** **Instructor Name** _____

Comments: