Patient Education Tool

SIMT

The use of supplemental oxygen in the home remains the most common and popular respiratory home care modality. According to the National Home Oxygen Patients Association,[1] more than 1 million people use supplementary oxygen in the US. Because oxygen can be both beneficial and detrimental, it is regulated by many agencies and is considered a drug. As such, the minimal amount of dose required to obtain the appropriate oxygenated response should be used. It is important to use the prescribed liter flow as given by the physician.

Supplemental oxygen is ordered to maintain adequate tissue oxygenation with the minimum amount of energy expenditure by the heart and lungs. The objective is to prevent or correct the abnormal condition in which available oxygen to the body's cells is inadequate to meet the body's needs.

Benefits of Supplemental Oxygen Therapy

1. Decrease the work of breathing
2. Prevent the abnormal deficiency of oxygen in the arterial blood
3. Decrease the excessive work of the heart
4. Decrease abnormal high pressures in the pulmonary artery

Safety Tips for Use of Supplemental Oxygen Therapy[2,3]

Although oxygen is nonflammable it greatly accelerates the rate of combustion. Oxygen is colorless, odorless, transparent and is a tasteless gas that occurs in nature. Safe use of oxygen demands that all flammable materials and potential ignition sources be removed from the area.

1. No-smoking signs should be posted on the front door so that everyone who enters knows oxygen is in use. Also post signs in the room in which the oxygen is being used or is stored.
2. Relocate or remove flammable materials from the area where oxygen will be used. Flammable materials include: cotton, wool, polyester fabric, bed clothing, paper materials, plastics, and certain lotions or salves, such as petroleum jelly.
3. Learn and teach others in the home that the most common potential ignition sources are smoking materials, sparks from electrical equipment, or static electrical discharge.
4. Have a functional smoke detector and fire extinguisher in the home at all times and familiarize yourself with its proper usage.
5. Inspect the home or area for these safety tips before placing oxygen in the area.
6. Do not use extension cords for your oxygen concentrators.
7. Do not place the concentrator electrical cord under a rug or furniture.
8. Stay at least 10 feet away from gas stoves, candles, lighted fireplaces, or any other open flame.

Oxygen Concentrators

Oxygen concentrators are electrically powered and are widely used as oxygen suppliers in the home. Oxygen concentrators are the most cost-efficient means of supplying oxygen to individuals who require continuous home oxygen at low liter flows.

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What Should You Know About Home Oxygen Therapy

An oxygen concentrator running 24 hours a day will increase the average monthly electric bill by approximately 5% – 10%.

1. Backup oxygen concentrator need to be available if there is a power failure.
2. Oxygen concentrators produce a lot of heat, so store them in a well-ventilated area, and never place them in a corner where you would cover the intake filter.
4. To make sure the oxygen is flowing, place the nasal cannula in a cup of water. If bubbles are present, oxygen flow is occurring.

Oxygen cylinders are also widely used in the home care setting. Cylinders come in many sizes to fit the need of the patient.

1. They must be supplied as a backup if an oxygen concentrator is in use.

Liquid oxygen systems provide large quantities of oxygen at low pressures. Portables can be filled from reservoirs for up to an 8-hour supply at 2 liters per minute. This makes it valuable for rehabilitation, travel, transport, work, and so forth.

Devices Used with Oxygen

Devices used to inhale oxygen in the home are classified as "delivery systems." Oxygen delivery systems most commonly used at home include nasal cannulas, a simple mask, and the entrainment mask. You should change cannulas or masks as needed. Also, be sure you request extension tubing for easy mobilization from room to room.

A demand valve cannula can be used to conserve oxygen while in transport or travel. This cannula employs a sensor and valve system to eliminate expiratory oxygen flow altogether. This device determines the beginning of inspiration and immediately opens the valve to deliver a quick pulse of oxygen. Closure occurs during exhalation. The demand valve cannula should provide the greatest savings in oxygen usage.

Humidification Therapy

A humidifier is a device that produces moisture, which can be used to moisten the user's airway and provide relief from the dryness of oxygen use. The general goal of humidity therapy is to ensure that the addition of water vapor be instilled to oxygen that is being administered to a person with normal functioning airways. It is important to always use distilled water in your humidifier as the mineral content of tap water may occlude the humidifier.

Safety measures should be periodically and thoroughly reviewed by a respiratory therapist or a medical equipment specialist. The therapist or specialist will work with you and your family members to ensure safe and efficient use of home oxygen therapy. Always ask questions if you are not sure about any aspect of therapy.

Additional Safety Tips[2,3]

1. Do not adjust the oxygen flow rates on your own. Contact your physician if you feel you are not getting enough oxygen.
2. Never use more than 50 feet of tubing as it can dilute the concentration of the oxygen you receive.
3. Do not place tubing under rugs as this may reduce the amount of oxygen that you receive.
4. Secure any loose cords, extra tubing, floor mats, and throw rugs to avoid any trips or falls.
5. Notify the electric company that you have an oxygen concentrator so they can make your house a priority during a power outage.
7. Avoid alcohol or sedatives during oxygen use as these may slow your breathing.

References

1. National Home Oxygen Patients Association. http://www.homeoxygen.org/. Accessed 01/08/2013.
2. American Association for Respiratory Care. Home oxygen therapy, 2008. http://ingen-tech.com/files/documents/HomeOxygenTherapy-AARC.pdf. Accessed 01/08/2013.
3. Seattle Fire Department. Information bulletin 2003-5. Home oxygen safety, 2003. http://www.seattle.gov/fire/pubed/brochures/OxygenSafety.pdf. Accessed 01/08/2013.

Additional Resources

American Thoracic Society
www.thoracic.org
National Heart, Lung & Blood Institute
www.nhlbi.nih.gov/index.htm
American Lung Association
www.lungusa.org

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