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Oxygen Conserving Device

Purpose

An oxygen conserving device has the sole purpose of conserving the oxygen that would otherwise be wasted, thus increasing the duration of portable oxygen systems. A physician must write a prescription for oxygen and the conserving device. Conserving devices do affect the amount of oxygen provided to the patient and they must be used under the supervision of a physician. Always abide by all manufacturers' operational and safety procedures.

Types

Oxygen conserving devices come in three main technology types: pulse systems, demand systems, and hybrid systems. In addition to the technology type, conserving devices can be electrically powered or pneumatically powered. Electrically powered units use batteries and electricity to control the conserving device. Pneumatic models use the pressure of the oxygen being delivered to power the unit.

Pulse conserving systems deliver large doses of oxygen early in the inspiratory cycle and stop at a preset limit. The earlier the oxygen is delivered, the more oxygen reaches the lung tissue where oxygen can enter the blood. Because most of the oxygen is delivered early in the inspiratory cycle, pulse systems have the highest level of oxygen conservation.

Demand conserving systems provide oxygen at the prescribed flowrate during the entire inspiratory cycle and stop during exhalation. Because the oxygen flowrate is lower throughout the entire inspiratory cycle, the amount of oxygen conserved and the amount that reaches the lung tissue is lower than with pulse systems.

Hybrid conserving devices use a combination of features from pulse and demand systems.

Use

The most important part in using your oxygen conserver is to understand your oxygen prescription and to use the oxygen only as prescribed by your physician. Do not deviate from your prescription without first contacting your physician and then contacting your oxygen supplier. Too much oxygen can be harmful. Oxygen conserving devices cannot be used with a humidifier. Oxygen conserving devices should only be used while the user is awake and reasonably attentive. The amount of oxygen conservation varies between units, the oxygen flowrate, and frequency of breathing.

Use (Continued)

Most oxygen conservers attach to a compressed oxygen cylinder in the same manner as a regular oxygen gas regulator. For instructions on attaching an oxygen regulator, see the Small Compressed Oxygen Cylinder Patient Education Sheet. The below instructions are general in nature and do not apply to a specific brand of conserving device:

1. Open the battery door and insert the correct size alkaline battery. Close the battery door (if applicable).
2. Remove the seal from the oxygen cylinder.
3. Point the outlet of the oxygen cylinder away from you. Quickly open and close the cylinder valve to clear the outlet of any debris with a short blast of oxygen.
4. Check the conserver to ensure that the inlet seal washer at the oxygen inlet is in place and in good condition. Check that the inlet is clean and free of debris. Use only an approved inlet seal washer.
5. Loosen the cylinder attachment knob counterclockwise and slide the conserver over the cylinder post. Align the two pins on the conserver with the matching holes in the cylinder post.
6. Secure the conserver to the cylinder post by turning the cylinder attachment knob clockwise until hand tight.
7. Place the cylinder and conserver in its carrying case or cart.

Some conserving devices require special nasal cannulas. If your model requires a special cannula, make sure you only use the approved type. Use only a standard *adult* nasal cannula. Do not use an oxygen mask with an oxygen conserving device. The below instructions are general in nature and do not apply to a specific brand:

1. Firmly press the end of the nasal cannula onto the oxygen supply outlet on the front of the conserver. Do not use any oxygen extension tubing.
2. Open the oxygen supply by SLOWLY turning the cylinder valve until you hear oxygen flow into the conserver. The oxygen contents gauge on the conserver now reads the oxygen pressure remaining in the cylinder.
3. Listen for leaks around the cylinder connection. If a leak is detected, close the cylinder valve and reposition the conserver on the cylinder post. Then slowly reopen the cylinder valve and recheck for leaks. Make sure the operation mode is set to the conserving mode and not to the continuous flow mode.
4. Turn the selector knob to the prescribed flow rate for your desired level of activity. Selector settings represent oxygen delivered in liters per minute (LPM).
5. Unwind the cannula and ensure that there are no kinks or twists in the tubing. Place the cannula over your ears and position the prongs in your nose.
6. Breathe in normally through your nose. Notice that the conserver provides a pulse of oxygen during each inhalation cycle and stops oxygen flow during exhalation.
7. Periodically check the contents gauge on the conserver. Install a new cylinder when the gauge reading drops into the red "Refill" zone to continue operation.
8. When you are finished using the conserving device, turn the cylinder to the closed position and rotate the rotary selector to the OFF position.

Use (Continued)

If at anytime you feel your oxygen needs are not being met by your oxygen conserving device, convert to continuous oxygen use and call your oxygen provider immediately. The continuous flow mode generally does not use any battery power and should be setup by your oxygen provider. When you are through using your conserver, follow these instructions:

1. Turn the oxygen cylinder valve clockwise until it is completely closed to shut off the oxygen supply.
2. Purge the oxygen in the conserver by inhaling from the cannula several times until oxygen is no longer delivered in response to inhalation.
3. Turn the cylinder to the closed position and rotate the rotary selector to the OFF position.
4. Remove the cannula from your head. Coil the cannula tubing and store with equipment.

To disconnect from the oxygen cylinder, follow the below instructions:

1. Ensure that the cylinder valve is closed and that the conserver is turned off.
2. Disconnect the cannula from the conserver.
3. Turn the knob counterclockwise to disconnect the conserver from the cylinder.
4. Replace the oxygen cylinder if the pressure gauge was reading in the red "Refill" zone.

Most conservers can remain connected to the oxygen cylinder for short-term storage. Ensure that the cylinder valve is closed and that the conserver is turned off. Store the equipment securely in a clean, cool environment.

For long-term storage, disconnect the conserver from the cylinder. Place the conserver in its original package and store in a clean, dry environment away from oils, grease, dirt, or other contaminants.

Maintenance

Keep your oxygen equipment clean and dust-free by wiping down with a damp cloth. Do not let water enter any holes or joints on the conserver. Do not use liquid cleaners or spray any fluid directly on the conserver. Fluids can cause a fire hazard or may damage internal components that could lead to a malfunction. Only qualified repair technicians should diagnose, perform maintenance, or repair any part of your oxygen delivery system. Call your oxygen provider if your oxygen delivery system is not functioning properly.

If your conserver uses a battery, replace it when indicated. Always keep an extra battery on-hand.

Safety

The safe use of an oxygen conserver requires it to be used as instructed, which includes the following safety precautions:

- Ensure that there is a functional smoke detector in the residence. Contact your local fire department to see what the legal requirements are for smoke detectors in the home.
- Ensure that oxygen delivery tubing is routed and secured so that it does not become entangled and/or damaged.
- Ensure that oxygen is stored in a well-ventilated place.
- Ensure that there are “No Smoking” signs displayed on all home entry doors.
- Ensure that oxygen delivery equipment is kept dust-free.
- Keep all flammable materials away from the oxygen source, especially oil, grease, solvents, creams, lotions, petroleum products, paper, fabric, aerosol containers, and alcohol. Oxygen is not flammable, but it will make a fire burn hotter and faster.
- Keep all devices that are electrically powered, or can produce sparks, at least 5 feet away from the oxygen delivery device.
- Never add, remove, or disable any feature, part, or function of your oxygen system.
- Never allow any untrained person or child to touch or manipulate your oxygen equipment.
- Never store compressed oxygen cylinders in the trunk of a car.
- Never immerse the conserver in any liquid.
- Do not allow smoking or flames in the room where oxygen is being used.
- Do not cook with a gas stove when oxygen is in use.
- Do not use Nylon®, wool, or any synthetic material for clothing or bedding; cotton is the preferred material.
- Do not carry or wear the conserver under clothing.
- Do not connect to any cylinders with pressures greater than 3000 psi.
- Do not use an oxygen mask or low-flow cannula with an oxygen conserving device.
- Do not use the conserver with a humidifier.
- Do not try to fix, repair, or lubricate the oxygen delivery system.

In order to ensure care and provide operator safety, make sure you follow these safety guidelines:

- Use nightlights to increase vision around areas of use.
- Wipe up any water or slippery floor spills.
- Remove tripping hazards (loose floorboards, uneven floors, throw rugs, extension cords, clutter, etc.)
- Install grab bars, use bath mats with suction cups, and use an elevated toilet seat to prevent falls.