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OXYGEN FOR CLUSTER HEADACHE

High-flow Oxygen has proven to relieve cluster headache attacks within 15 minutes for nearly 75-80% of attacks with no serious side effects in controlled clinical studies. The great advantage of oxygen is that it has no established side effects, it is cost effective, it can be readily combined with other treatments and it can be used multiple times a day.

The approach is to use 100% pure oxygen at a flow rate of 12-15 liters per minute, through a non-re-breather mask for approximately 15 minutes or until the attack is stopped. It is not entirely intuitive and it takes some practice to get good at it. If it is your first time using your home oxygen setup, give it a trial run BEFORE you are having an attack. The oxygen won't hurt you. Oxygen is an essential tool for dealing with cluster headaches. For most people with cluster headache, oxygen, when properly used, will abort an attack within 15 minutes. If at first you don't succeed, try again. It is worth getting Oxygen Therapy right.

Keep a few simple things in mind:

- **The Earlier the Better:** It is important to use oxygen at the first sign of an attack. In some cases, it is possible to head it off completely.

- **Pay Close Attention to the Reserve Bag:** Wait a few seconds for the reserve bag to fill completely before inhaling the oxygen. The reserve bag should be your gauge for determining if you are getting enough oxygen. If the flow rate is set too low or if the tank is running low, your reserve bag may not completely refill between breaths. The optimal situation is that you never completely flatten your reserve bag and that it is nearly fully inflated before inhaling. If your reserve bag remains inflated while inhaling, you may not be inhaling deeply enough.

- **Take Long Deep Breaths:** The idea is to consume as much pure oxygen as you can. Deep breaths allow the oxygen to fully transfer in the lungs. Rapid, short-succession breathing may make you dizzy and will not accomplish the goal of aborting the attack. For best results, breathe deeply and repeatedly, near the point of hyperventilation.

- **Stay on Oxygen:** Remain on oxygen for at least 3-5 minutes past relief of the attack. Occasionally an attack can reoccur after stopping the oxygen. Keep the oxygen mask tight against the face while inhaling. Any leaks along the mask edge will allow in room air which will dilute the oxygen ratio. It is not important to keep the mask tight during exhalation, but be cautious not to spill oxygen unnecessarily.

Equipment:

- **Mask:**
  - You want to use a mask or other device that delivers the oxygen to you without including any outside air—**a *non-rebreather mask*** is preferred:

  - With a standard non-rebreather mask, there are two things you should consider doing:
    - Most non-rebreather masks have a set of holes on each side of the mask. At least one set of holes typically has a gasket in it that closes when you breathe in and opens when you breathe out (a "flapper valve"). Often there is no gasket—just holes—on one side. You should consider closing these holes so you breathe in only the oxygen from your tank, with no outside air mixed in. You can put tape on them to close them permanently, or just put your thumb over them when you breathe in, and take your thumb off when you breathe out.

    - Consider cutting off any elastic strap that would hold the mask to your face, for two reasons: first, since many CH users can fall asleep while they're using oxygen, they will continue draining oxygen from their tank if the mask is still on; second, if they do fall asleep and the mask stays on, they might inhale oxygen for too long, which can be dangerous.

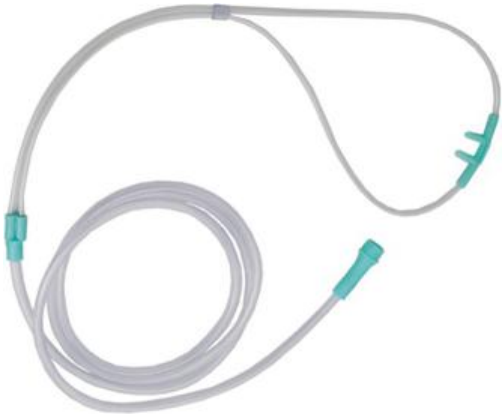
  - Other useful information about non-rebreather masks:
    - The reservoir bag attached to your mask should fill quickly enough that you can breathe deeply and steadily without waiting.

    - A tight mask seal is very important. Facial hair, or a mask that is too large for the face, can interfere with getting a tight seal. Masks come in different sizes. Be sure you get one that's the right size for your face.

- You should clean your mask regularly, and also make sure that the flapper valves in the mask are working properly. A good method of cleaning your mask is to use a benzalkonium chloride antiseptic towelette. Benzalkonium chloride is a rapid acting surface disinfectant and detergent that is active against bacteria, certain viruses, fungi, yeasts, and protozoa. Benzalkonium chloride towelettes come in packets available over the counter at any drugstore and also available at many online shopping sites.

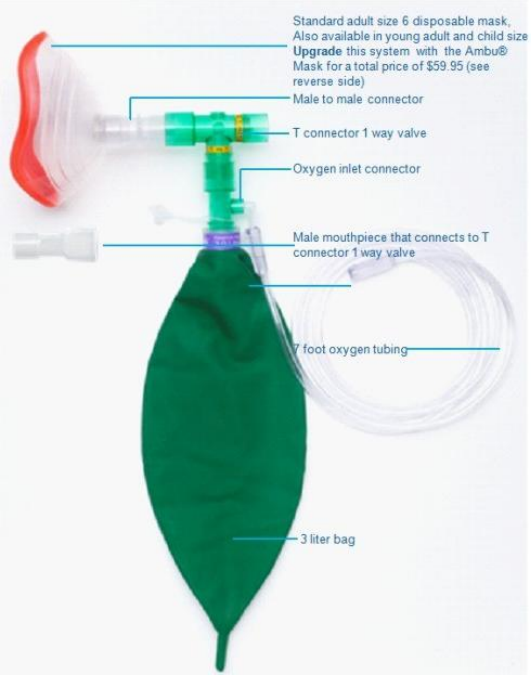
- Dipping a clean paper towel or tissue in a mild solution of a hypoallergenic soap will work equally well in keeping your mask clean. Once you've cleaned your O2 mask, place it inside a ziploc bag to keep it free of dust and lint when not in use.

- You may be provided a nasal cannula (two tubes that go into your nostrils) instead of a non-rebreather mask from your supplier. These are generally useless for dealing with cluster headaches. Do not use one of these:



- Some people can find that a mask feels uncomfortable, or even a little claustrophobic, or they can't get a tight-enough seal. These people turn to using a tube or "mouthpiece" for breathing, but this can be sometimes more difficult to coordinate breathing. That tube is illustrated in the photo below:

- One device that some people use is the O2ptimask, which is designed specifically for people with CH.



You can order an O2ptimask at
http://www.clusterheadaches.com/khxc/

- If oxygen treatment is working for you, but you would like a faster abort time, then you might think about the Demand Valve System. This system can also help conserve oxygen. Search EBay for economical options.

Demand Valve and Hose Mask:

This is what the system looks like:

Mouthpiece

T Valve

- One option is replacing the mask with either the mouthpiece or a T-Valve fitting.
- The advantage of the “T” valve is that you can inhale and exhale through the mouthpiece. If you put the mouthpiece directly to the Demand Valve, you have to exhale through your nose, or the side of your mouth, or take the unity out of your mouth to exhale.
- Different size tanks require different types of regulators. So don’t order a regulator until you know what kind of tank you have.

- **Flow Rates and Regulators**
  - It is important to make sure your regulator can provide oxygen at a rate of at least 12 L/min or more preferably 15 L/min. A high flow rate keeps the reservoir bag that is attached to your mask full of oxygen so that you can breathe in the O2 deeply, without interruption.

  - A few examples of the regulator: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  - Ordering a Regulator

    Many people order a regulator from eBay or other internet suppliers like

    - Linde Healthcare: http://www.lifegas.com/gas_devices_and_therapies/special_oxygen_needs.asp
    - Mada Medical http://madamedical.com/
    - Flotec Respiratory Products http://www.floteco2.com/htm/Products/Regulator/Regulator_RW_100-300_Catalog_Imag...
    - Tina's Homecare http://www.tinashomecare.com/oxygen_therapy_oxygen_regulators.htm?gclid=CMP24tOb...

- **Cylinders/Tanks**
  - Many patients use more than one type of oxygen tank, typically a larger tank at the bedside for nocturnal attacks, and a smaller portable tank to take in their car and for the office.

  - Large cylinders/tanks are generally "M" size; smaller cylinders are generally "E" size.
    - At 15 liters per minute, an M tank will provide approximately 198 minutes of oxygen (approximately 10 to 20 minute sessions).
    - At 15 liters per minute, an E tank will provide approximately 35 minutes of oxygen, enough for less than two 20-minute sessions.
    - Here is a link to an online calculator based on flow rates: http://www.monroecc.edu/depts/pstc/backup/paraoxca.htm

- The large tanks are quite heavy (about 70 pounds) and not portable. You will almost certainly want at least one smaller tank for your car or for work (or for any place where you are likely to be out of immediate access to your larger tanks). Since the smaller tanks run out quickly, it is wise to have more than one.

- A concentrator is a machine that creates oxygen out of room air. C*oncentrators are essentially useless for aborting cluster.* They produce low rates and less than 100% pure oxygen. Below is a concentrator:

Traveling with Oxygen

- You cannot bring an oxygen tank onto an airplane without advance arrangements, if at all. Check with your airline first and inquire about their policy. If they do provide oxygen find out what it is going to cost, what flow rate they have available, what quantity/volume they can provide, and whether you can use your own mask.

- Some suppliers will work with you to have oxygen available in places you are traveling to: http://www.linde-healthcare.com/en/about_linde_healthcare/Patient-focused_care/oxytravel/index.html

Oxygen Safety

Oxygen will not explode or burn but it will increase the flammability of objects near the concentrated oxygen. It will also cause anything that is burning to burn hotter and faster. Be sure to have a functioning smoke detector and fire extinguisher in your home and remember to change the batteries regularly. A good method to remember is to change your smoke detector batteries every spring and fall with the time change. Important factors to keep in mind:

- HEAT **–** Keep all oxygen equipment, including tubing and cannulas, at least 10 feet away from any source of heat. Common heat sources to be concerned with are: any open flames, stoves, space heaters, furnaces, radiators, candles, incense, windows exposed to direct sunlight, smoking pipes, cigars and cigarettes.

- COOKING SAFEGUARDS **–** Do not cook with a gas or electric stove while using oxygen. It is best to use a microwave oven or make other arrangements for your meals.

- SMOKING **–** For your health and safety, as well as keeping the equipment in good working order, smoking should not be permitted in the same room where oxygen is in use or stored.

- PETROLEUM PRODUCTS **–** Never use grease, oil or other petroleum products on or near any oxygen equipment, including tubing and cannulas. Flammable materials such as oil, grease, aerosols, paint; gasoline and solvents could ignite and burn when

introduced to oxygen. Never use wax or furniture polish on or near any oxygen equipment.

Compiled from clusterbusters.com, clusterheadaches.com and www.chsg.org