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NHOPA NEWS

National Home Oxygen Patients Association

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Sleep Apnea

Sleep disordered breathing affects approximately twelve million Americans[1]. Sleep disordered breathing is commonly referred to as sleep apnea. While obstructive sleep apnea is the most prevalent form of the sleep apnea disorders, there are actually three types: obstructive, central and mixed. According to the American Sleep Apnea Association website, these apneas are defined as:

- *Obstructive sleep apnea (OSA)* is caused by a blockage of the airway, usually when the soft tissue in the rear of the throat collapses and closes during sleep;
- In *central sleep apnea*, the airway is not blocked but the brain fails to signal the muscles to breathe;
- *Mixed apnea*, as the name implies, is a combination of the two. With each apnea event, the brain briefly arouses people with sleep apnea in order for them to resume breathing. Consequently, sleep is extremely fragmented and of poor quality.

Much of the population with moderate to severe sleep apnea has not been diagnosed by a health care provider.

Risk factors associated with sleep apnea include but are not limited to being: male, overweight, over the age of forty, and ethnicity. Sleep apnea can affect all age groups.

Symptoms include excessive daytime sleepiness, loud snoring, apnea or abnormally long pauses during breathing, awakening from sleep with choking and coughing, restless sleep or heavy sleep, intellectual deterioration, short-term memory loss, and morning headaches[2,3]. Left untreated, other clinical symptoms associated with sleep apnea may develop, including heart rate and rhythm problems, gastroesophageal reflux disease (GERD), and impotence. Untreated sleep apnea increases the possibilities of hypertension, stroke, ischemic heart disease, mood disorders and even weight gain. Research has shown a link between the increase in daytime sleepiness from sleep apnea as a cause of many motor vehicle crashes.

Obesity is a common occurrence with persons diagnosed with OSA. Increased weight may cause an increase in the tissue around the neck area leading to obstruction. However, this is not the only cause of OSA. OSA is seen in patients with an increase in size of the soft palate and tongue. Others have a small mouth or a receding jaw that is unable to accommodate the tongue. In addition, muscle tone is relaxed during sleep and gravity pulls at the muscle tissue especially when a person is in a horizontal or sleeping position, further compromising airflow during sleep.

Diagnosis

Sleep apnea is diagnosed with a sleep study, typically conducted in a sleep lab. The study is conducted over a single night and measures multiple parameters such as oxygen saturation, eye movement, brain activity (EEG), respiratory efforts/movements, heart rhythm (EKG), nasal and oral airflow movements and others. If the person is noted to have periods of apnea during the test a CPAP/BiPAP machine will be placed on the person to determine treatment options.

Home studies may also be done. Home studies however, typically do not measure as many parameters as a laboratory study and generally, a technician is not present to ensure the equipment is functioning properly.

Nocturnal oximetry can be used as an initial screening tool but is usually not recognized by insurance companies as documenting sleep apnea specifically so a sleep study is usually done. *(cont'd on pg 2)*

Treatment

The first line of treatment for OSA and the easiest is weight loss for overweight individuals. The most common intervention is positive airway pressure, CPAP (continuous) or BiPAP (bi-level). These units deliver positive pressure to the airway and keep it open allowing the patient decreased sleep interruption and stable oxygen saturation throughout the night. The machines are small beside units that may be humidified. The person is fitted with a mask as part of the delivery system. When being fitted with the mask it is critical that the clinician perform a good mask fitting, as this will increase ease of use with the unit. Counseling and education also play an important part in use of the unit.

Other treatment options include surgery i.e. a UPPP (uvulopalatopharyngoplasty), or use of an appliance, such as tongue retaining devices or bite guards, for anatomical deformities.

For information visit: www.sleepapnea.org.

References:

1. American Sleep Apnea Association website www.sleepapnea.org
2. Hawker, B. *Part of the Solution*. Advance for Respiratory Care Practitioners. May 26, 2008.
3. Victor, L.D. *Obstructive Sleep Apnea.* American Family Physician website: http://www.aafp.org/afp/991115ap/2279.html

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The National Home Oxygen Patients Association is devoted exclusively to improving the lives of people across the country who require supplementary oxygen on a regular basis.

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More Information on New Airline POC Ruling

In the May newsletter, the U.S. Department of Transportation's (DOT) recent ruling that will make flying with oxygen easier was outlined. **The new ruling states that airlines operating in the US must accept certain approved portable oxygen concentrators (POCs) onboard flights.**

Batteries have been a concern when traveling with the POCs and this new regulation outlines the responsibility of the oxygen user with regard to batteries. In Section 8 of the *Federal Register*, titled Batteries, it states:

The Department has decided to allow a carrier to require an individual who uses a ventilator, respirator, CPAP machine or FAA-approved POC to ***bring an adequate number of fully charged batteries onboard to operate the device for not less than 150% of the expected maximum flight duration***. The appropriate number of batteries should be calculated using the manufacturer's estimate of the hours of battery life while the device is in use and the information provided in the physician's statement (*e.g.,* flow rate for POCs). The expected maximum flight duration is defined as the carrier's best estimate of the total duration of the flight from departure gate to arrival gate, including taxi time to and from the terminals, based on the scheduled flight time and factors such as (a) wind and other weather conditions forecast; (b) anticipated traffic delays; (c) one instrument approach and possible missed approach at destination; and (d) any other conditions that may delay arrival of the aircraft at the destination gate. This rule also makes it clear that a carrier may deny boarding, on the basis of safety, to an individual who does not carry the number of fully charged batteries prescribed in the rule or who does not properly package the extra batteries needed to power his/her device. Information for passengers on how to safely travel with batteries is available at *http://safetravel.dot.gov*. However, a carrier may not deny boarding due to an inadequate number

of batteries unless the carrier can provide information from a reliable source demonstrating that the number of batteries the passenger has supplied will not provide adequate power for 150% of the expected maximum flight duration based on the battery life indicated in the manufacturer's specification when the device is operating at the flow rate specified in the physician's statement. It is also worth noting that the requirement to bring an adequate number of batteries to continuously operate the device for up to 150% of the expected maximum flight duration does not apply in circumstances where the passenger will be using an FAA approved POC while boarding or disembarking from the aircraft and will not be relying on the POC during flight because the passenger has contracted for carrier-supplied oxygen. Instances where the carrier denies boarding to an individual, the carrier must provide the individual a written statement of the reason for the refusal to provide transportation within 10 days of the incident.

The final rule can be read in its entirety at **www.regulations.gov**, docket number DOT-OST-2004-19482 or at **www.federalregister.gov**. This ruling was release on Tuesday May 13, 2008.

Traveling with Oxygen

One reader's family member wrote, "My parents are planning a trip by car to Canada and back to the US. My dad is on oxygen. They have made arrangements in Canada to receive a supply of oxygen while there. Our questions concern what will they need to do at the Canadian border on their way there, and similarly, what will they need to do when crossing back into the US? Thanks for your help. The government website was simply too taxing."

The NHOPA Executive Office contacted both the Canadian Border Agency and the US Border Agency. While there are no specific requirements, they recommend the following:

- *Canada suggests that you carry a letter from your physician stating that you require medical oxygen and how much you will be carrying with you into and out of Canada.*
- *The US does not have any required paperwork either and states that you may be required to bleed off some of the oxygen at the border for a dog sniff test to prove that it is indeed oxygen in the tanks.*
- *NHOPA recommends that you carry the physician letter and your prescription for oxygen in both directions and present them on request or inspection.*

Intal Nebulizer Solution Discontinued

King Pharmaceuticals recently issued a notice informing the public that they will discontinue the manufacture of Intal® Nebulizer Solution (cromolyn sodium solution).

The notice states this decision was "based upon many factors, including our understanding of current medical therapy and the availability of alternative asthma therapies." Intal® Solution will remain available through pharmacies and wholesalers until current supplies are exhausted.

If you are currently taking Intal® Nebulizer Solution, contact your physician regarding any medication changes that you may have to make in the future.

New Products

The following information on new products/companies available on the market is for informational purposes only. NHOPA does not specifically endorse ANY products. Contact your physician for further information regarding your healthcare or the specific company for product information.

Oxy-View has **two new pulse oximeters** available for oxygen users. These are model OX300C2H and OX300C4P. Both require 2 – AAA batteries or rechargeable batteries for more than 30 hrs of continuous operation. Both carry a two-year warranty and have an automatic power off and low battery indicator. Model OX300C4P is $59.95 and has a reversible LED display. Model OX300C2H is $149.95 but has a Color OLED display with six display options and two waveform displays.

A pediatric model is also available and more information on this model can be found on the website.

An optional carrying case is available for $4.95.

Visit www.oxyview.com and click Oxy-View Accessories for more information or call Oxy-View at 1-877-699-8439.

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Two New POCs Available

Superior Oxygen Systems is marketing **Life Choice**, a new POC. This unit is a pulse mode system with settings, according to the website of "equivalent to a continuous flow of 1, 2 and 3 lpm". The compact unit weighs less than 5 lbs and delivers 90% (+ 3%) oxygen concentration. Measurements are height of 9.5", width of 7.5" (at widest point), and depth of 3.125". According to the website "an integrated battery or patient-replaceable batteries that are capable of providing at least 2 hours of remote portability at a minimum of 2LPM equivalency". The approximate battery recharge time is 2-3 hours. An oxygen concentration alarm will sound if oxygen concentration is below 85%. The unit is equipped with "state of the art SLEEP MODE technology." A 36 month limited warranty accompanies the unit.

For more information, visit www.superioro2.com or call 1-888-767-6994.

EVO Medical Solutions also has a demand unit POC available – the **Central Air** unit. According to their website, "The evo Central Air portable oxygen concentrator (POC) by Delphi . . . weighs less than 10 pounds and can be easily carried or pulled by cart for maximum mobility and convenience. Built specially for the on-the-go patient, the Central Air's smallest footprint in class design allows it to fit where other POCs do not. . . Maintains fixed bolus volume (925 ml/minute sustained) over all breath rates utilizing proprietary breath detection technology. . . Exclusive rotary compressor operates at lower temperatures and less vibration." The size of the unit is height of 11.6", width of 7.4" and depth of 4.6" with a weight of approximately 9.8 lbs. with battery. Flow rates are 1 to 5 demand settings, with 0.5 increments. The unit delivers 90% (+ 3%) oxygen concentration. Battery duration is approximately 3 hours on a setting of 2 at 15 BPM. A 3-year warranty accompanies the unit.

For more information visit www.evomedical.com or call 1-800-759-3038.

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