



PTSD:

A gateway to sleep apnea?

Veterans with posttraumatic stress disorder (PTSD) are at high risk of having sleep apnea, according to a new study conducted at the Sleep Disorders Center at the San Antonio Military Medical Center in Fort Sam Houston, TX.

The complete study, Obstructive Sleep Apnea Syndrome and Posttraumatic Stress Disorder: Clinical Outcomes and Impact of PAP Therapy, was published in the February issue of CHEST. Christopher J. Lettieri, MD; Scott G. Williams, MD; Jacob F. Collen, MD, conducted the study.

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PPD: Protecting Professional Drivers is a production of Precision Pulmonary Diagnostics, specializing in premium news and analysis on sleep apnea for the commercial trucking industry, and is published 2-4 times a year.

Precision Pulmonary Diagnostics
8275 El Rio, Suite 110
Houston, TX 77054
Phone: 713-520-5864
Fax: 713-528-0433
e-mail: info@ppdsleep.com

Precision Pulmonary Diagnostics (PPD), provides professional screening for drivers who are at risk for sleep apnea. This is a HIPPA-compliant, online tool customized to a company's requirements.

Once a driver has been diagnosed with sleep apnea, PPD will provide local diagnostic services with the ease of Web-based scheduling and quick, reliable turn-around – from diagnosis to treatment.

Drivers who require treatment will be fitted for and provided with a CPAP mask, flow generator, and heated humidifier for nightly use.

In order to ensure drivers are using their masks correctly, PPD has partnered with a leading manufacturer of CPAP equipment, masks, and the only provider of a patented wireless compliance monitoring system.

The wireless compliance monitoring system provides daily information of CPAP use, efficacy, and allows real-time troubleshooting of any problems your drivers may be experiencing. With this data, we can enhance your drivers' CPAP acceptance and long-term compliance. In short, our protocols can maximize your results and your return on investment.

Dear Reader:

I want to take this opportunity to introduce myself to PPD's newsletter readership – my name is Brian Kinnerk and I am the newest member of the PPD Leadership Team, recently taking on the role of Chief Operations Officer, overseeing the day-to-day function of our Houston-based operations.

Although this is my initial foray into the sleep apnea testing and diagnostics sector, I have amassed over 15 years' professional experience in managing successful business units within the Life Sciences, Medical Devices and Telecommunications industries and I plan to draw heavily from these previous assignments and apply the same processes, strategies and principals in support of PPD's mission of delivering a comprehensive, world-class, driver-focused sleep apnea testing and treatment service to our carrier's drivers.

The opportunity to be part of the Precision Pulmonary Diagnostics Team is quite gratifying for me both personally and professionally and I am anxious to contribute in any way I can to enhance PPD's standing as an invaluable partner to our carriers and a dependable, efficient service-provider for our drivers.

I am very interested to hear from our readers and invite you to reach out to me with any comments, questions, concerns or criticisms that might prompt an opportunity for operational improvement or challenge the status quo – I can best be reached via email at bkinnerk@ppdsleep.com ; I look forward to hearing from you!

Brian Kinnerk

Chief Operation Officer
Precision Pulmonary Diagnostics, LLC

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OSA treatment helps heart-failing patients

Catching and treating sleep apnea before it worsens may reduce six-month readmissions for patients with heart failure, according to a study published by the American Journal of Cardiology.

First author Sunil Sharma, M.D., FAASM, (Associate Professor of Pulmonary Medicine in the Sidney Kimmel Medical College at Thomas Jefferson University) and the team screened patients for OSA who were admitted to the hospital with heart failure. Of the 75 patients screened, 70 received a positive diagnosis. For the following six months, the team tracked the patients' CPAP

compliance, emergency visits and readmissions. By comparing pre- and post-treatment readmissions in compliant (n=37) and non-compliant patients (n=33), the researchers found a reduction in hospital visits for those who used their CPAP regularly over a period of six months.

Sharma suggested hospitals can implement screening programs to catch sleep apnea in high-risk, hospitalized patients.

"Multi-center, randomized studies are needed to replicate and validate these findings," Sharma said.



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Researchers studied 200 military medical patients with PTSD and diagnosed 56 percent with sleep apnea. According to the study, these patients were compared with 50 matched patients with OSA but not PTSD and with another 50 patients without PTSD or OSA controls.

Those diagnosed with both disorders experienced lower quality of life, more sleepiness and less adherence and response to CPAP therapy. Lower quality of life may include poor physical health, strained family relationships, unemployment and/or financial strains.

The control group with OSA alone saw 82 percent resolution of sleepiness, compared to only 62 percent of CPAP-adherent and 21 percent on CPAP non-adherent patients with both disorders.

The results point out that patients with both PTSD and OSA should be followed especially closely for adherence and response to CPAP treatment.

The complete study, Obstructive Sleep Apnea Syndrome and Posttraumatic Stress Disorder: Clinical Outcomes and Impact of PAP Therapy is available for download in the February issue of CHEST.

PTSD by the numbers

According to the Department of Veteran Affairs, the number of Veterans with PTSD varies by service era:

Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF): About 11-20 out of every 100 Veterans (or between 11-20%) who served in OIF or OEF have PTSD in a given year.

Gulf War (Desert Storm): About 12 out of every 100 Gulf War Veterans (or 12%) have PTSD in a given year.

Vietnam War: About 15 out of every 100 Vietnam Veterans (or 15%) were currently diagnosed with PTSD at the time of the most recent study in the late 1980s, the National Vietnam Veterans Readjustment Study (NVVRS). It is estimated that about 30 out of every 100 (or 30%) of Vietnam Veterans have had PTSD in their lifetime.

Source: Department of Veteran Affairs

OSA creates domino cancer effect

Melatonin is key, study suggests

Patients suffering from sleep apnea are at higher risk of developing breast cancer, according to a new study published in the journal of GENES AND CANCER by Michigan State University.

Researchers grew tumors from stem cells and determined, by supplementing with melatonin, the number and size of these tumors would decrease compared to the control group. The study concluded melatonin kept breast cancer stem cells from growing.

Where does sleep apnea come in?

It is important to note, serotonin is manufactured in the brain at night, which in turn manufactures melatonin. Melatonin is used to regulate sleep stages – 1,2,3,4 and rapid eye movement (REM) – with serotonin produced at stage 4. Sleep apnea prevent patients from getting into stage 4 of the sleep cycle. With little chance



to produce serotonin, little melatonin is produced and, in turn, there is possibly a greater risk of breast cancer.

In fact, the journal Epidemiology reported an increased risk of breast cancer among women who work mostly night shifts. So how can you safeguard yourself from cancer? Aside from adhering to CPAP treatment, be mindful of the following tips:

Turn off the tube

Normally your brain starts secreting melatonin between 9-10pm so avoid blue light (from TV or computer), which your brain think it's still daytime and could slow that process.

Get morning sunlight

Get 10-15 minutes of morning sunlight every day to tell your internal clock day is here! This will make it less likely confused by weaker light at night.

Sleep in the dark

Sleep in complete darkness. Even the slightest bit of light in your bedroom can disrupt your biological clock and your pineal gland's melatonin production.

Know your EMFs

Electromagnetic fields in your room had disrupt your pineal gland and its melatonin production

Apnea worsens liver disease, study says

Low oxygen levels can wreak havoc on your liver, according to a growing number of studies. Sleep apnea hampers the amount of oxygen which reaches the bloodstream each night, when cellular restoration takes place. This lack of oxygen levels cause oxidative stress, which is blamed as the main culprit in the progression of liver disease.

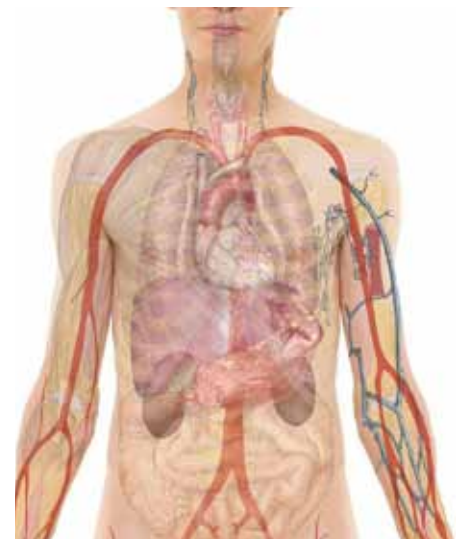
And research is backing it up.

In another study, published in the journal Chest (March 2014), researchers studied 226 obese patients with suspected OSA. Researchers found two-thirds had fatty

liver disease and severity increased with severity of their OSA.

And last, in The Journal of Pediatrics (April 2014), a study published results of sleep apnea among 60 percent of young subjects with fatty liver disease. In fact, the worse their OSA, the more likely they were to have scarring of their livers.

The data of these studies also conclude these individuals have a greater imbalance between free and their body's ability to counteract their harmful effects than subjects without OSA and low oxygen.



Take care of your equipment

Proper care and maintenance of your CPAP is important to ensure optimal treatment

CONSISTENT CARE

Your CPAP unit should be kept in a dirt and dust free environment. You will need to store your CPAP unit inside the carrying case it came in, or wrap it inside a towel/blanket after your treatment session. This will ensure that your CPAP unit is also protected from cigarette smoke contamination.

Make sure your CPAP unit is secured while you are driving to protect it from bouncing and falls.

DAILY

If possible, disconnect your air tubing from your CPAP unit and hang it in a clean and dry place until next use.

If using a humidifier with your treatment, make sure you empty the water chamber of any left over water prior to driving. The CPAP unit is NOT waterproof and if there is water in the water chamber- it is very likely that your CPAP unit will suffer water damage. It is preferable to use distilled water in your humidifier chamber (to reduce the mineral ring build up inside your chamber), but not necessary.

WEEKLY

Wash the air tube (hose) in warm water using mild detergent (i.e. Ivory Liquid Soap) and rinse thoroughly. Drip dry away from sunlight.

Wash your mask and cushion components including the harness in mild detergent. Wipe the mask and cushions dry and air dry the harness.

MONTHLY

Clean the exterior of the CPAP unit with a damp cloth and mild detergent.

AIR FILTERS

Your CPAP unit has a disposable air filter in the back, under the blue air filter cover. If driving in dusty conditions, it is probably a good idea to change your air filter every other month or sooner. The air filter is NOT washable or reusable.

To change the air filter:
Remove the air filter cover in the back of your CPAP unit and remove the old air filter. Insert a new filter with the blue tinted side facing out from the device. Make sure to replace the air filter cover.

REPLACEMENT OF YOUR CPAP EQUIPMENT

The wear and tear on CPAP equipment is different for each individual, but most people need to replace their equipment as follows:

Every 6 Months: Mask, Hose and Water chamber

Every 2 Months or sooner:

Cushions for your mask and air filters.

*Cushions (like a toothbrush) need to be replaced often because they wear out from usage. It may not be visually obvious to you, but a worn out cushion could affect your treatment by increasing leaks around the mask.

Precision Pulmonary Diagnostics will automatically place you on a bi-yearly equipment replacement schedule. If you feel you need more or less equipment replacement items, please call us at 1-866-370-3102 and we will be happy to accommodate your special needs. We understand that following the above recommendations may be difficult for many of you, especially those who are away from home for long periods of time. If you can incorporate as many of these steps as possible, especially making sure your air filter is clean and your humidifier chamber is dry when driving, you will greatly increase the lifespan of your CPAP unit.