

Debunking myths behind sleep apnea mysteries



Many people get incorrect information from friends or relatives on how to treat sleep apnea, said Dr. Robert Israel, medical director of Unity Sleep Disorders Center in Brighton, NY.

According to an article in the *Rochester Democrat and Chronicle*, while 92 percent of patients at the center claim they use their prescribed continuous positive airway pressure (CPAP) machine successfully, they know many people who don't, according to Dr. Donald Greenblatt, director.

So what are patients missing? Why aren't their treatments successful? Israel and Greenblatt debunk the mys-

teries of sleep apnea treatment.

Myth #1 CPAP machines don't work.

Truth #1 CPAP machines are the most effective treatment available. The machine works to gently blow pressurized air into the patient's nose or nose and mouth. The pressure is high enough to keep the throat open so the patient continues breathing. This pressure level is customized according to the patient's needs.

Modern machines are small and quiet, can humidify air and drop the pressure when a patient exhales. While the masks may seem awkward, new de-

signs are softer and varied, providing for a more customized feel.

If you are unsure how to use your CPAP machine or have concerns about its comfort, seek professional help.

Myth #2 CPAP is the only treatment available.

Truth #2 Oral appliances are also available for those mild sleep apnea. The devices, which are also worn during sleep, pull the jaw forward to keep the airway clear. However, keep in mind, the device has been known to perma-

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EDITOR'S NOTE

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 4 times a year.

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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 Readers,

Since the earliest of recorded histories, people have theorized about the function and meaning of dreams. Answers came largely from the spirit world until Aristotle and Plato developed the drive related hypothesis that was later expanded on by the European psychoanalysts of the 19th and 20th centuries. This hypothesis defines dreaming as a way to act out unconscious desires in a safe or "unreal" setting, presumably because to do so in reality would be unacceptable or even detrimental. But even in the 21st century we still are not sure why we dream. The only way to study dreams is to ask the dreamer. However, one thing we know for sure is that dreaming is something that the vast majority of humans do every night of their lives.

In 1953 two researchers at the University of Chicago discovered the phenomenon of rapid eye movement (REM) during a series of sleep studies. Study participants who were awakened during REM sleep invariably recalled bizarre and vivid dreams. If awakened while eyes were motionless (non-REM sleep), participants rarely recalled dreaming. Before the REM discovery, most scientists believed that the brain was essentially inactive during sleep. The Chicago researchers proved that the brain is indeed active during sleep, a finding that helped establish the sleep science discipline, which has led to the diagnosis and treatment of 84 known or suspected sleep disorders.

A few years after the REM discovery, investigators in France recognized that brain activity during REM sleep resembles that of wakefulness. He called REM "paradoxical sleep" because of the fact that such cognitive activity is accompanied by muscular paralysis. He referred to non-REM sleep, a time of reduced brain activation, as "quiet sleep," in which there is no muscular inhibition.

In a pioneering study conducted by William C. Dement, MD, PhD, in 1960, the psychological effects of REM deprivation were discovered by waking subjects just as they began dreaming. Dr. Dement observed increased tension, anxiety and irritability among his subjects along with difficulty concentrating, an increase in appetite with consequent weight gain, lack of motor coordination, feelings of emptiness and depersonalization and hallucinatory tendencies. The results of this study clearly indicate that dreaming has profound importance and that dream deprivation can have very serious consequences. *Many individuals with untreated sleep apnea have difficulty achieving sufficient REM sleep time because of the frequent brain arousals occurring with repetitive upper airway obstruction.*

But even with these discoveries, the question of why we dream remains unanswered. Some researchers think dreaming might have evolved for physiological reasons. There is a great deal of neuronal activity occurring while we sleep, especially in REM, and it has been suggested that dreams may just be a meaningless by-product of this biological function. Another theory of dreaming is that dreams are the mechanism whereby the brain incorporates memories, solves problems and deals with emotions. In this way dreams are essential for our emotional health.

Safe Travels,

Mark B. Berger, MD FCCP

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What can you expect from a sleep lab visit?

Professional commercial drivers concerned about possible sleeping disorders receive evaluation and treatment from one of the thousands of sleep labs around the country. But what can they expect from a commercial driver trained sleep lab?

The procedure is quite simple.

When the driver arrives at the lab, after paperwork is filled out, he/she is led to a comfortable sleeping room. Some are equivalent to a hotel room with homey furnishings, snacks and private bathrooms.

The driver is then hooked up to about 20 electrodes – one on the chest, one on the ribcage, two on each leg, two on the chin, one on the neck, one below the eye, several on the scalp, one under each ear, a sensor under the nose, in addition to straps under the arms and around the waist.

Calibration movements are done to



Sleeping patients are monitored by 20 different electrodes attached to various parts of their bodies.

confirm the equipment is working before turning out the lights for 45 minutes. Drivers are then encouraged to sleep as their behaviors are monitored.

The drivers' test is reviewed by a Sleep Boarded Sleep Physician shortly after the completion of their sleep study. Drivers have the opportunity to speak with a physician at anytime after their sleep study and can ask as many questions as they need during their sleep study.

If and only if our drivers are diagnosed with sleep apnea, the driver will be given a continuous positive airway pressure (CPAP) equipment the next morning following their sleep study. This is done in order to get the driver back on the road as quickly as possible. The lab techs are specifically trained on the education needed for our commercial truck drivers.

Successful diagnosis and treatment of sleep apnea decreases a driver's chance of developing heart disease, stroke, headaches, memory problems, obesity and diabetes..

PPD has partnered with sleep labs in Houston and Dallas, Texas; Phoenix, Ariz.; Chicago, Ill.; Indianapolis, Ind.; Memphis, Tenn.; Atlanta, Ga.; Harrisburg Pa.; Columbus, Ohio; Redlands, Ca.; Seattle Wash.; Portland, Oregon; West Allis, Wisc.; Southaven and Corinth, Miss., and a newly signed lab in North Carolina. More to be announced soon.

Obstructive sleep apnea may derail your diet

Adults with severe obstructive sleep apnea (OSA) ate a diet higher in calories, cholesterol and saturated fat, according to a study published by the Journal of Clinical Sleep Medicine.

In the study, 320 adults with OSA were observed and grouped according to severity. The higher number of breathing disturbances a person had during sleep measured how severe each case was. The group with the highest severity was linked with a higher intake of calories, protein, cholesterol and saturated fat. Furthermore, with the exception of cholesterol, these associations were seen mainly in women.

On average, compared to women with less severe symptoms, those with severe sleep apnea consumed 22 more grams of protein (the amount found in three ounces of meat), 28 more grams

of total fat, 88 more milligrams of cholesterol and nine more grams of saturated fat. A higher intake of saturated fat can further boost the risk of heart disease by raising blood cholesterol.

It's well known that the severity of sleep apnea is tied to obesity and that obese individuals are more likely to consume more fat and cholesterol. But this new study revealed that severe sleep apnea symptoms affected a person's food intake regardless of body weight.

Previous studies suggest that sleepiness and fatigue influence dietary intake by altering hormones that regulate appetite, which can lead to overeating and weight gain.

Upsetting the balance of these hormones may also increase cravings for carbohydrates and fatty foods.

Get your 7-8 hours of sleep

- Lose at least 10 percent of your body weight
- Avoid meals 1-2 hours before your bedtime
- Limit caffeine to no more than 200mg per day
- Avoid alcohol
- Exercise at least three hours before bed
- Quit smoking to lower your risk of OSA by 300 percent

Sleep deprivation can affect your diet in other ways, too. Fatigue causes some people to eat more food in an effort to boost energy levels. Feeling tired also reduces the motivation to exercise and burn off excess calories.



Stick out your tongue:

Exercises may strengthen muscles affecting apnea

Participating in specific tongue and facial exercises for half hour daily may ease the severity of obstructive sleep apnea, according to the University of Sao Paulo Medical School.

Speech pathologists taught 16 of the patients to do tongue and facial exercises for half an hour daily. Those exercises included brushing the tongue with a toothbrush, putting the tip of the tongue on the soft palate and sliding the tongue backward, pronouncing vowels quickly or continuously, and keeping the tongue in a certain position when eating.

For comparison, the other 15 patients didn't learn any tongue or facial exercises.

Three months later, the patients in the tongue/facial exercise group had reduced the severity of their sleep apnea.

In contrast, the comparison group showed no such improvements.

Some of the exercises that the patients performed may have been more helpful than others, according to an editorial published with the study.

Still, "there seems to be reasonable logic to targeting tongue strength as a potential mechanism for remodeling the upper airway," writes editorialist Catriona Steele, PhD, of Canada's Toronto Rehabilitation Institute and University of Toronto.

OSA patient saved from fire by CPAP machine

Geraldine McNeil can thank her continuous positive airway pressure (CPAP) machine for saving her life after a fire gutted her Texas home earlier this year. According to reports, the fire broke out in the early morning hours. McNeil's entire face

was covered in ash and soot except for the area where the CPAP mask had been placed. Had she not had the machine on her face, she may have been overcome by the smoke, which is the No. 1 cause of death in fire – not burns.

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nently reposition the teeth or jaw. Currently the FMCSA is not endorsing oral appliances as a treatment option due to the inability to monitor compliance with same.

Myth #3 My lifestyle doesn't matter.

Truth #3 Making healthy lifestyle changes may decrease your symptoms of sleep apnea or at least reduce the amount of air pressure needed to correct the cessation of breathing if you test positive. Overweight people who use CPAP to get a good night's sleep may discover new energy to lose weight and eat healthfully instead of feeling groggy and turn to food for energy. Losing excess weight can reduce the amount of fat in your throat. Also, laying off the alcohol or sedatives four hours before sleep can reduce your symptoms. These relax the muscles and make the tissue fall into the throat easier. Also, tobacco irritates the upper airway and causes swelling, which can contribute to apnea. Keeping the weight off is also critical. Regaining the weight can worsen the symptoms of sleep apnea and require pressure changes to your CPAP machine or the need for a CPAP machine if you originally tested negative.

Myth #4 Sleeping on my side will cure my sleep apnea if I have it.

Truth #4 While sleep apnea can worsen while sleeping on your back versus your side, the treatment of choice is CPAP as most people switch positions while they sleep. A truck drivers' job is safety sensitive and consistent air pressure with CPAP is needed to refresh the driver while sleeping.

Myth #5 Surgery will solve my problems.

Truth #5 Surgery to cut the soft tissue on the back of the throat is often recommended for children but not adults. The results of such procedures have been known to have only a 50 percent long term success rate and the patient often requires CPAP therapy after the surgery. Weight, age and family history play a factor here as well.

Have a question about sleep apnea or your CPAP machine? Call the Tip Line 24 hours a day, 7 days a week at 713-520-5864 or toll-free 866-370-3102.

Sleep apnea can slow brain

Consistent surges and drops in blood pressure and blood flow in the brain may make people with obstructive sleep more prone to have a stroke and die in their sleep, a new study by the Yale University School of Medicine study suggests.

The study confirmed OSA causes a decreased blood flow to the brain during episodes, which caused the organ's blood pressure to rise. After repeated episodes, the brain's ability to protect itself eventually wears down.

The study found that those with sleep apnea had lower cerebral blood flow velocity and notably lower blood oxygen levels during sleep than did people without the condition. They also took longer to recover from a drop in blood pressure and to re-establish normal blood flow to the brain. This, the researchers said, points to problems with the way the brain regulates blood flow to meet its needs.



In a previous study by the same Yale team, people with OSA were three times more likely to suffer a stroke or die than people of similar health who do not have OSA.

The findings were published in the December 2008 issue of the Journal of Applied Physiology.

OSA vs. Snoring Know the difference

OSA

Sleep disorder; person stops breathing or breathes shallowly

Serious medical condition; effects include heart diseases, stroke, obesity, diabetes, even death

Cause of snoring

Causes person to be tired during the day

Can be treated with CPAP machine or surgery

Snoring

Vibration of respiratory system caused by air blockage

Not necessarily serious, but could be symptom of sleep disorder

Result of sleep apnea, but could also be because of enlarged tonsils or adenoids

May not necessarily cause person to be tired during the day

Treated by lying on side during sleep, maintaining healthy diet, removing tonsils, avoiding sedatives and alcohol

Stormy weather could worsen apnea symptoms

When a storm rolls in, patients suffering from obstructive sleep apnea may find their condition worsening, according to the American Academy of Neurology.

According to Michael J. Doherty, M.D., of Swedish Hospital, apnea worsened as atmospheric pressure dropped due to weather-related changes.

Previous research found altitude is linked to worsening apnea, possibly a result of changes in air viscosity. Altitude changes, however, correspond to central apnea, more so than obstructive apnea, which was most affected in the present study.

To investigate the impact of low-altitude, weather-related changes in

atmospheric pressure on respiration during sleep, the researchers retrospectively correlated 30 months of Seattle weather data with polysomnography data from sleep studies of 537 patients at the University of Washington Sleep Disorders Center. The lab is located 200 feet above sea level.

Doherty said when patients suffering from sleep-disordered breathing at high altitudes are brought down to lower altitudes, they often experience more obstructive apnea events and fewer central apnea events than before.

Though the mechanism remains a mystery, Doherty said the obstructive apnea index is clearly altered by changes in weather-related atmospheric pressure.

