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Sleep Apnea Takes a Toll On Brain Function

One in 15 adults has moderate to severe obstructive sleep apnea, a disorder in which a person's breathing is frequently interrupted during sleep -- as many as 30 times per hour.



Source: University of California - Los Angeles

People with sleep apnea also often report problems with thinking such as poor concentration, difficulty with memory and decision-making, depression, and stress. According to new research from the UCLA School of Nursing, published online in the *Journal of Sleep Research*, people with sleep apnea show significant changes in the levels of two important brain chemicals, which could be a reason that many have symptoms that impact their day-to-day lives.

UCLA researchers looked at levels of these neurotransmitters -- glutamate and gamma-aminobutyric acid, known as GABA -- in a brain region called the insula, which integrates signals from higher brain regions to regulate emotion, thinking and physical functions such as blood pressure and perspiration. They found that people with sleep apnea had decreased levels of GABA and unusually high

levels of glutamate.

GABA is a chemical messenger that acts as an inhibitor in the brain, which can slow things down and help to keep people calm -- like a brake pedal. GABA affects mood and helps make endorphins. Glutamate, by contrast, is like an accelerator; when glutamate levels are high, the brain is working in a state of stress, and consequently doesn't function as effectively. High levels of glutamate can also be toxic to nerves and neurons.

"In previous studies, we've seen structural changes in the brain due to sleep apnea, but in this study we actually found substantial differences in these two chemicals that influence how the brain is working," said Paul Macey, the lead researcher on the study and an associate professor at the UCLA School of Nursing. Macey said the researchers were taken aback by the differences in the GABA and glutamate levels.

"It is rare to have this size of difference in biological measures," Macey said. "We expected an increase in the glutamate, because it is a chemical that causes damage in high doses and we have already seen brain damage from sleep apnea. What we were surprised to see was the drop in GABA. That made us realize that there must be a reorganization of how the brain is working."

Macey says the study's results are, in a way, encouraging. "In contrast with damage, if something is working differently, we can potentially fix it." The link between sleep apnea and changes in the state of the brain is important news for clinicians, Macey said.

"What comes with sleep apnea are these changes in the brain, so in addition to prescribing continuous positive airway pressure, or CPAP -- a machine used to help an individual sleep easier, which is the gold standard treatment for sleep disturbance -- physicians now know to pay attention to helping their patients who have these other symptoms," Macey said. "Stress, concentration, memory loss -- these are the things people want fixed."

In future studies, the researchers hope to determine whether treating the sleep apnea -- using CPAP or other methods -- returns patients' brain chemicals back to normal levels. If not, they will turn to the question of what treatments could be more effective. They are also studying the impacts of mindfulness exercises to see if they can reduce glutamate levels by calming the brain.

Thank You!

To My Dear CSS Family,

I would like to thank everyone for your continued support for Clinical Sleep Solutions. As some of you may be aware, we had an unfortunate incident at our Richmond location that resulted in its temporary closure due to a fire at the pharmacy next door. I would like to apologize to all that have been inconvenienced by this closure. You can rest assured that we will be reopening the location shortly and renovating the clinic to be better than ever! In the meantime, please contact us at one of our other locations and we will do our best to accommodate your needs the best we can. You can also email us at info@clinicalslee.com for any specific requests and we will be sure to get back to you as soon as possible. Thank you for your support and understanding.

Sincerely Yours,
Cox Tan-Ngo
President/ CEO
tan-ngo@clinicalslee.com

Pillow Talk Sleep Hygiene Tips 2016 edition

Many of us have seen the standard sleep hygiene recommendations that have been around for decades. Although those recommendations continue to apply to the modern times, there are additional "Tips" that may be important to consider in order to improve your ability to sleep better.

1. Turn off your gadgets - as blue light emitted from smartphone, TV and computer screens can suppress melatonin (a hormone helping you sleep) and increase your alertness
2. Avoid drinking before bedtime - However enjoyable nightcaps may be, unfortunately they could lead to more shallow sleep. A shallower sleep could lead to a negative cycle where you're dependent on sedatives to sleep, and stimulants such as caffeine or sugary food to stay awake during the day.
3. Get up early - If you're having trouble sleeping, getting up earlier and exposing yourself to morning light could be the solution for you. It may seem brutal, but it can get results.
4. Forget your worries - It's important to let go of the worries that build up during the day as they can effect both the initiation and maintenance of sleep.
5. Work Out - Whether you're swimming, running, or practicing yoga, regular exercise can make for a great night's sleep. It's best to work out around six hours before you go to bed as your body stays overheated for several hours after vigorous exercise, causing wakefulness.
6. Have a hot drink - A hot (non alcoholic) beverage before bed is a great way to relax and prepare for sleep. Avoid coffee, chocolate and fizzy drinks at least six hours before you go to bed.
7. Listen to music - Soothing sounds can be a good way to doze off, but anything louder might have the opposite effect.
8. Only use medication as a last resort - While you may get results in the short term, it's important to be aware of unwanted effects and see your doctor if you're having trouble sleeping.
9. Keep it simple and you should be on your way to a good night's sleep

Clean-up Clinics

Vancouver - May 2 to May 4, 2016
#103 - 805 West Broadway - (604) 875-1440

Burnaby - Apr 25 to Apr 27, 2016
#115 - 5050 Kingsway - (604) 432-9271

Abbotsford - May 3 to May 4, 2016
#105 - 1975 McCallum Rd. - (604) 746-2290

North Van - May 5 to May 6, 2016
#215 - 1433 Lonsdale Ave - (604) 985-1440



Richmond - May 5 to May 6, 2016
#180 - 7031 Westminster Hwy - (604) 278-1540

Squamish - May 12, 2015
#2 - 38003 2nd Avenue - (604) 390-1130

White Rock - Apr 28 to Apr 29, 2016
#107 - 1461 Johnston Road - (604) 542-2276

AWAKE Seminar Series

This seminar series was developed exclusively by Clinical Sleep Solutions to help our communities understand the science of sleep and improve the management of various sleep disorders. We will be hosting a new topic every quarter and this will be done at each of the 7 locations! We are excited to launch this new initiative to help serve you and our communities better. Please feel free to invite your family and friends, we look forward to seeing you there!

Part 3: How does sleep apnea affect my health?

Sleep apnea is an aggravating condition to a number of health problems that include high blood pressure, diabetes, obesity, and depression. This seminar will provide an in-depth look at how the diagnosis and proper management of sleep apnea is important to the prevention and effective treatment of these medical conditions.

[Click here for more details](#)



Now Open

Clinical Sleep Solutions is proud to be growing to serve you better! Starting off 2016 with openings of our brand new testing centre in Chilliwack as well as our new clinic in West Vancouver.

PHILIPS RESPIRONICS



Philips Respironics DreamStation CPAP

The DreamStation CPAP machine from Phillips Respironics is a simple, easy to use fixed pressure CPAP machine with advanced setting capabilities including OptiStart, SmartRamp, and Bluetooth connectivity. Phillips Respironics's DreamStation CPAP Machine has an accessible and user-friendly menu designed to provide alerts and sleep results for CPAP users. Choose from one of the many detailed, setup options to select flex pressure relief, ramp, or optional humidification.

Philips Respironics Dreamwear

Philips Respironics DreamWear's unique design offers many of the benefits of nasal and pillows masks to allow patients to have the best of both mask types. Allowing more freedom of movement and more comfort than their prescribed mask, DreamWear patients feel like they are not wearing a mask at all.



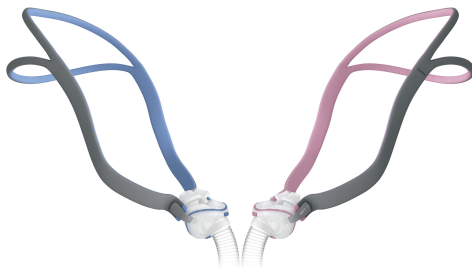
ResMed S10 Wireless Signal Problem

If you have noticed a red circle with a line through it where the cell signal should be. It means that their unit is not sending/receiving a wireless signal. To troubleshoot this, you need to unplug their CPAP machine from the wall and replug it in. If the red circle does not go away then the unit will need to be replaced.



ResMed AirFit P10

The ResMed AirFit P10 nasal pillows mask is our quietest mask yet! Bringing you the latest technology in sleep apnea therapy, the AirFit P10 is approximately 50% quieter and 50% lighter than its predecessor, and has been shown to deliver more than 40 minutes of additional sleep per night. Offering premium comfort and ease of use without compromising stability, the AirFit P10 also sports a unique split-strap headgear design for minimal facial contact and a real sense of freedom. It is so comfortable and effective, it won a world-coveted Red Dot Award for excellent product design.



ResMed AirCurve 10 S

The AirCurve 10 S is ideal for sleep apnea patients who find it difficult to adjust to sleep apnea therapy on a continuous fixed pressure device, as well as patients who need extra pressure support. This bilevel machine has two different, adjustable set pressures which can make therapy feel more comfortable. An integrated humidifier simplifies setting up the device and makes therapy easier.

