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Breathing Related Sleep Disorders

The Latest News on Airway Orthotic Therapy

Dr. John S. Viviano SnoreSolutions@aol.com

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Physical Exercise and Sleep Apnea

A reduction in body weight through diet or exercise has long been associated with a reduction in the severity of an existing breathing related sleep disorder. Regular exercise and achieving an ideal body weight should always be a component of the initial therapy for these disorders. A recent study indicates that even a very modest level of regular exercise can lead to a dramatic improvement in the severity of sleep apnea.

Giebelhaus et al. (Sleep and Breathing Vol. 4, No 4, 2000) recently published a study designed to determine if physical exercise in sleep apnea patients is safe and/or influences respiratory disturbance index (RDI).

In this study, after a minimum of 3 months nCPAP therapy, 11 moderate to severe apnea patients began a six-month supervised exercise program involving 2 hours of exercise twice a week. A sleep study was conducted without CPAP both before and after this exercise program.

The results of the regular exercise program demonstrated no adverse effects. There was no significant change in body weight, blood oxygen saturation or fitness level. No adverse cardio-pulmonary effects

were observed. However, there was a decrease in RDI from 32.8 to 23.6 ($p < 0.05$), without any significant changes in total sleep time or sleep architecture.

The authors concluded that a prescription for mild to moderate exercise is safe in the management of sleep apnea, and that even in the absence of an improvement in fitness, a meaningful decrease in RDI was experienced without a change in sleep architecture.

Oral Appliance Therapy (OAT) has been demonstrated to be effective at all levels of RDI. However, studies have demonstrated that the % success rate is considerably higher at lower levels of apnea. A regular exercise program could reduce a patients RDI and increase the likelihood of success with an Oral Appliance.

Regular modest exercise, even in the absence of an improvement in the level of fitness, can reduce RDI and increase the likelihood of success with Oral Appliance Therapy.



Exercise can Reduce the Severity of Apnea

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Hi-lights

- Regular exercise can be safely instituted for Sleep Apneics, and leads to a reduction in Sleep Apnea Severity
- Sleep Apnea Severity & Cardio-Vascular abnormalities—closely related to weight gain and obesity
- Amount of Deep Sleep closely related to weight gain in men

News Flash!

Acoustic Rhinometry has been added to our customary protocol for Sleep Disorder consultations.

This process utilizes Acoustic technology to access the patency of the nasal passages. Should obstructions be discovered, the appropriate referral to an Ear Nose and Throat specialist can be made.

Through Acoustic Pharyngometry and Rhinometry, we can now assess the complete upper airway and make appropriate recommendations and referrals before proceeding with therapy.

Sleep Apnea and Obesity

As a lifestyle choice, reducing excess weight can be one of the most beneficial changes an individual with a breathing related sleep disorder can make. A current study relates severity of Sleep Apnea, Cardiac problems and blood O₂ desaturation with obesity.

VALENCIA-FLORES M et al. (Obes Res 2000;8 (3):262-9) conducted a study to determine the prevalence of sleep apnea in morbidly obese patients and its relationship with cardiac arrhythmias. : Fifty-two consecutive morbidly obese patients underwent two Sleep Studies. Comparisons were made between four groups with different severities of sleep-disordered breathing. The groups were defined by Apnea-Hypopnea index (AHI): 5 > 15, 15 > 30, 30 > 65, and > or = 65.

Ninety-eight percent of the sample (n = 51) had an AHI > or = 5 (mean = 51 +/- 37), and 33% had severe

sleep apnea with AHI > or = 65 with a mean nocturnal desaturation time of <65% over 135 minutes.

Electro-cardiographic abnormalities were present in 31% of the patients. Cardiac rhythm alterations showed an association with the level of sleep-disordered breathing and oxygen desaturation.

The authors concluded that there is a high prevalence of sleep apnea in morbidly obese patients and that the risk for cardiac arrhythmias increases in this population in the presence of a severe sleep apnea (AHI > or = 65) with severe O₂ desaturation (SaO₂ < or = 65%).



Who would of thought that the quality of your sleep is so closely related to weight gain and vice versa. To find out more about this relationship visit our web site...

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Sleep Quality Closely Related To Weight Gain in Men

Van Cauter et al. (8:16, 2000, J Am Med Ass) has found that as men age, they typically get less deep sleep. With less deep sleep, there is less bodily production of "growth hormone", which is associated with "increased fat tissue and abdominal obesity, reduced muscle mass and strength, and reduced exercise capacity".

Individuals with Sleep Apnea experience a decrease in deep sleep due to the constant interruption in normal sleep architecture they experience. Since growth hormone has been shown to increase with an increase in deep sleep, it follows that by treating sleep apnea and re-establishing a normal sleep architecture, appropriate growth hormone production can be re-established reducing the tendency to gain weight with age.

As a lifestyle choice, it has been demonstrated that exercising at least 20 minutes three or four times a week has also been associated with an increase in deep sleep.

Once again, weight loss, treatment of sleep apnea and quality of sleep all remain closely related—Treating one in isolation is rarely successful.

Dr. John S. Viviano obtained his B.Sc. and D.D.S from U of T and has practiced General Dentistry in Mississauga since 1985. He maintains a special interest in the treatment of Snoring, Sleep Apnea, and Breathing Related Sleep Disorders. He is a member of the American Academy of Sleep Medicine and Sleep Wake Disorders Canada. He is both a member of and credentialed by the certifying board of the Academy of Dental Sleep Medicine and he is also a member of and has lectured on behalf of the Canadian and Ontario Dental Associations and other organizations regarding the treatment of Snoring, Sleep Apnea and Patient Management Strategies. Dr. Viviano utilizes various appliance designs including trial appliances in his conservative treatment of Snoring, Sleep Apnea, and Breathing Related Sleep Disorders.

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Conservative Treatment
for Snoring-Sleep Apnea
and Breathing Related
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Michael Angelo's Market Place
1-4099 Erin Mills Parkway
Mississauga, Ontario, L5L 3P9

Phone: 905-820-3200
Fax: 905-820-9346
email: SnoreSolutions@aol.com
Web Site: SnoreSolutions.com