Five things you need to know about Sleep Apnea.

Dr. Shawn Ciecko

What is Sleep Apnea?

Sleep Apnea is a condition, which results in oxygen desaturations (drop in blood oxygen level) throughout the night due to cessation in breathing either by a central or an obstructive cause.

There are two varieties of Sleep Apnea - Central Sleep Apnea and Obstructive Sleep Apnea. Patients with Central Apnea have a lack of airflow due to the absence of ventilatory effort. The center in the brain that is responsible for regulating breathing has a problem with sending the signal to the body. This signal disturbance then results in breathing pauses throughout the night.

Obstructive Sleep Apnea occurs when there is a physical blockage of the airflow in the upper respiratory track leading to the disruption of airflow to the lungs that subsequently results in a drop in the blood oxygen level. In addition to repeated oxygen desaturations, the patient is repeatedly awoken many times during the night with each obstructive event leading to an interrupted sleep pattern and daytime hypersomnolence (daytime fatigue).

What are the symptoms of Sleep Apnea?

One of the hallmark signs of obstructive sleep apnea. is loud snoring with apneic events (breathing pauses). Daytime hypersomnolence (daytime fatigue and tiredness) are often what brings a patient in for evaluation by a physician. Morning headaches are also a common complaint of Sleep Apnea patients. Patients who report falling asleep at work or during class or have difficulty concentrating along with loud snoring should discuss their symptoms in detail with their doctor.

Why is Sleep Apnea important?

Obstructive Sleep Apnea affects nearly 12 million individuals in the United States. In individuals ages 30-60, select studies have estimated that nearly 24% of men and 9% of women may suffer from Sleep Apnea. Sleep Apnea not only causes daytime tiredness, but has significant cardiovascular effects as well. 50% of patients with Obstructive Sleep Apnea have hypertension (high blood pressure). A significant amount of patients develop pulmonary hypertension which can lead to heart failure. Sleep Apnea has also been implicated in impotence, decreased libido, and increased risk of traffic accidents.

How is Obstructive Sleep Apnea diagnosed?

An overnight polysomnography (sleep study) is the gold standard in diagnosis of Sleep Apnea. During this study, the patient stays overnight in a monitored setting. Depending on the center, many parameters are measured which usually include an EEG, EKG, EMG, blood oxygen saturation, carbon dioxide levels. Events where the patient stops breathing at night and oxygen levels drop are monitored and are subsequently reported back to the ordering physician. One of the main ways of assessing if a patient has sleep apnea is their AHI or RDI (sleep number that determines how severe sleep apnea is).

The AHI (Apnea Hypopnea Index) or RDI (Respiratory Distress Index) is determined by the number of events occurring in an hour. An Apneic event is defined as a complete cessation of breathing for 10 seconds or greater and a Hypopneic event is a decrease in airflow associated with a drop in blood oxygen level. The number of events is generated from the patient's sleep study putting them in one of four categories:

Normal AHI	0-5 (any number >0 is abnormal in children)
Mild OSA	5-14
Moderate OSA	15-29
Severe OSA	> 30

What can be done to treat Obstructive Sleep Apnea?

Treatment for Sleep Apnea consists of both surgical and non-surgical options. Conservative attempts to treat OSA include weight loss, smoking cessation, increase in exercise, and the avoidance of sedatives and alcohol at night. Obesity is a large contributing factor to the severity of OSA and even mild weight loss can aid in the treatment of Sleep Apnea.

Continuous Positive Airway Pressure (CPAP) is a machine which delivers positive pressure to the patient when they breathe, opening the airway and alleviating the airway obstruction. Studies have demonstrated a decrease in cardiovascular risk and cholesterol when CPAP is tolerated greater than four hours per night. Patients also feel better rested after the use of CPAP.

Surgical options for Sleep Apnea are performed by an Otolaryngologist Head & Neck surgeon (ENT surgeon) and should be tailored specifically for each patient since no two patients are exactly alike. The aim of surgery is to alleviate upper airway obstruction. Septoplasty and turbinate reduction open the nasal airway allowing the patient to breath through their nose. Uvulopalatopharyngoplasty (UPPP) and tonsillectomy are operative procedures that would allow the physician to remove the

tonsils and trim the palate. This would successfully provide the patient a larger opening to breath. Some of the other procedures to alleviate Sleep Apnea based on very specific anatomic conditions as assessed by a physician include hyoid advancement, tongue base reduction and tracheostomy.

If you think you may have Sleep Apnea or are concerned about your nighttime breathing, start by asking your primary doctor or consider seeking the assistance of an ENT surgeon or other sleep professional.

The author of this article, Dr. Shawn C. Ciecko is an active member of the Richmond County Medical Society. He specializes in Otolaryngology, Head and Neck Surgery and Head and Neck Endocrine Surgery and practices in New Springville.