

Sleep Apnea Information for Pilots

Please note: this paper supercedes 10MEDBL04 - Sleep Apnea Information for Pilots

INTRODUCTION

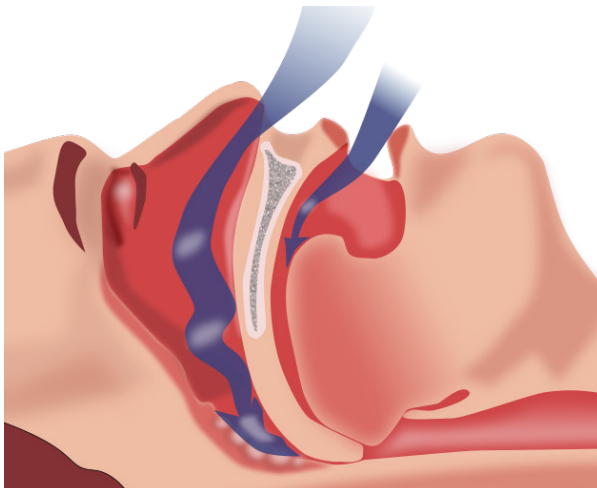
The prevalence of sleep apnea in adults is estimated to be seven percent. In contrast, the US Federal Aviation Administration (FAA) records the prevalence of sleep apnea in Class I medical certified pilots is only 0.5 percent. Thus, sleep apnea seems to be badly underdiagnosed within the pilot community. As sleep apnea results in daytime sleepiness, undiagnosed cases could pose a significant safety risk in aviation.

DEFINITION

Sleep apnea is a sleep disorder characterized by pauses in breathing during sleep. The standard definition of an apneic event includes a minimum 10second interval between breaths, with either a neurological arousal (a 3-second or greater shift in EEG frequency, measured at C3, C4, O1, or O2), a blood oxygen desaturation of 3-4% or greater, or both arousal and desaturation. The Apnea-Hypopnea Index (AHI) is expressed as the number of apneas and hypopneas per hour of sleep.

SYMPTOMS

Snoring is a nearly universal symptom in individuals with sleep apnea, but it does not mean that everyone who snores has sleep apnea. The loudness of the snoring is not indicative of the severity of obstruction. If the upper airways are extremely obstructed, there may not be enough air movement to make much sound. The sign that is most suggestive of sleep apnea occurs if snoring stops. The sleep is often restless and of poor quality and, as a result, patients can suffer from daytime sleepiness.



People with sleep apnea have pauses in breathing sometimes caused by obstruction of the airway.

COMPLICATIONS

Daytime fatigue

The apneas make normal, restorative sleep impossible, resulting in daytime drowsiness, fatigue, and irritability. People with sleep apnea have an increased risk of motor vehicle and workplace accidents.

High blood pressure or heart problems

High blood pressure is a common finding in sleep apnea patients. It is believed that the drops in blood oxygen levels increase blood pressure. Obstructive sleep apnea might also increase risk of heart attack, stroke and arrhythmia.

Type 2 diabetes

Sleep apnea increases risk of developing insulin resistance and type 2 diabetes.

Liver problems

There is growing evidence that sleep apnea is associated with abnormal results on liver function tests and nonalcoholic fatty liver disease.

Sleep-deprived partners

Loud snoring disturbs anyone sleeping near sleep apnea patient.

DIAGNOSIS

Diagnosis is done by home oximetry or polysomnography in a sleep clinic. Pulse oximetry is a non-invasive method allowing the monitoring of the oxygenation of a patient's hemoglobin. Polysomnography (PSG), also known as a sleep study, is a multi-parametric test used in the study of sleep and as a diagnostic tool in sleep medicine.

The test result is called a polysomnogram, also abbreviated PSG. Polysomnography is a comprehensive recording of the biophysiological changes that occur during sleep. It is usually performed at night, when most people sleep, though some labs can accommodate shift workers and people with circadian rhythm sleep disorders and do the test at other times of day. The PSG monitors many body functions including brain (EEG), eye movements (EOG), muscle activity or skeletal muscle activation (EMG) and heart rhythm (ECG) during sleep.

TREATMENT

In mild cases of obstructive sleep apnea, the use of a specially shaped pillow or shirt may reduce sleep apnea episodes, usually by causing users to sleep on the side instead of on the back or in a reclining position instead of flat. Lifestyle changes, such as avoiding alcohol or muscle relaxants, losing weight, and quitting smoking might be beneficial. However, sleep apnea usually needs a more advanced treatment such as a continuous positive airway pressure (CPAP) device, Oral Appliance Therapy (OAT) or surgery.

The CPAP device keeps the patient's airway open during sleep by means of a flow of pressurized air into the throat. The CPAP mask is similar to the cockpit oxygen mask and the devices are light-weight and quiet. Therefore, CPAP is the most commonly used treatment for sleep apnea. Dentists specializing in sleep disorders can prescribe Oral Appliance Therapy (OAT). The oral appliance is a custom-made

mouthpiece that shifts the lower jaw forward which opens up the airway. OAT is usually successful in patients with mild to moderate obstructive sleep apnea. For patients who do not tolerate or do not respond to non-surgical measures, there are several surgical treatments to anatomically alter the airway. The surgical treatment needs to be individualized in order to address all anatomical areas of obstruction.



The CPAP device, which keeps the patient's airway open during sleep by means of a flow of pressurized air into the throat, along with OAT, is one of the common treatments for sleep apnea, and an alternative to surgery.

SLEEP APNEA AND AVIATION

Pilots with sleep apnea syndrome are generally allowed to continue flying if the disease is treated. As sleep apnea increases the risk of cardiovascular diseases, medical certification often requires satisfactory cardiological evaluation. ICAO provisions do not mention sleep apnea, but it is included, for example, in the EASA regulation (MED.B.015.(d)(5) and AMC1.MED.B.015 (h).

Pilots who suspect that they might be suffering from sleep apnea should consult their doctor for diagnosis and treatment.

©2019 The International Federation of Air Line Pilots' Associations. This publication is for your information only. In all cases, pilots should follow their company's guidance and procedures. In the interest of flight safety, reproduction in whole or in part is encouraged. All reproductions must credit IFALPA. This publication may not be sold or used commercially.