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Sleep Disorders Breathing and Air Travel

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Sleep disordered breathing is a syndrome that ranges from simple snoring, changes in airway resistance, and obstructive sleep apnea (OSA).

OSA is a multisystem disorder with an unstable airway during sleep. This leads to repetitive upper airway obstruction and oxygen desaturation, arousals, snoring and altered physiologic alteration [1]. OSA has been linked with cardiovascular complications and sudden death [2]. OSA is not only associated with increased prevalence of myocardial infarction, cerebral, vascular accidents and hypertension [3] but also with performance degradation in activity of daily living. Passengers with sleep breathing disorders (SBD) are particularly vulnerable to severe physiological consequences of air travel. Sleep deprivation due to long flight time may enhance the adverse physiologic effects of OSA [4].

Nearly 1.4 billion passengers traveled by commercial airlines in 1995 and the number of people traveling by air have reached 2.5 billion annually [5]. Peterson et al. [6] recently reported outcomes of medical emergencies during airline flights by reviewing records of in-flight medical emergency calls from five domestic and international airlines to a physician-directed medical communications center from January 1, 2008, through October 31, 2010. He reported respiratory symptoms and syncope to be the main culprit for aircraft diversion and hospital admission [6]. Unfortunately, patient's underlying medical problems were not recorded.

Altitude changes during travel results in acute variations of barometric pressure and may result in hypoxia.

It is reasonable to assume that multiple time zone changes combined with oxygen starvation resulting from many occurrences of apnea at night, both inhibit arousal mechanisms and may result in oxygen deprivation. In patient with OSA the degree of hypoxia during commercial flight travel remain unknown. Further research and modification of guidelines are necessary to ensure passenger safety in the future.

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