

Sleep Apnea

Sleep apnea is a medical disorder characterized by frequent interruptions in breathing of up to ten seconds or more during sleep. The condition is associated with numerous physiological disorders, including fatigue, headaches, high blood pressure, irregular heartbeat, heart attack and stroke. Though sleep apnea often goes undiagnosed, it is estimated that approximately four percent of men and two percent of women ages 30 to 60 years old suffer from the disease.

A limited number of preclinical studies assess the role of cannabinoids on sleep-related apnea. Writing in the June 2002 issue of the journal of the *American Academy of Sleep Medicine*, researchers at the University of Illinois (at Chicago) Department of Medicine reported "potent suppression" of sleep-related apnea in rats administered either exogenous or endogenous cannabinoids.[1] Investigators reported that doses of delta-9-THC and the endocannabinoid oleamide each stabilized respiration during sleep and blocked serotonin-induced exacerbation of sleep apnea in a statistically significant manner. A more recent animal trial also reported that injected doses of synthetic THC mitigates apnea and augments upper airway muscles in rats.[2] In a clinical trial setting, the administration of synthetic THC/Marinol has similarly been shown mitigate apnea in adults. Writing in the journal *Frontiers in Psychiatry* in 2013, investigators concluded that THC administration significantly mitigated symptoms of the disorder in patients with Obstructive Sleep Apnea over a three-week period. "Dronabinol treatment may be a viable alternative or adjunctive therapy in selected patients with OSA," authors concluded.[3]

REFERENCES

[1] Carley et al. 2002. Functional role for cannabinoids in respiratory stability during sleep. *Sleep* 25: 399-400.

[2] Calik et al. 2014. Intranodose ganglion injections of dronabinol attenuate serotonin-induced apnea in Sprague-Dawley rat. *Respiratory, Physiology & Neurobiology* 190: 20-24.

[3] Prasad et al. 2013. Proof of concept trial of dronabinol in obstructive sleep apnea. *Frontiers in Psychiatry* [online journal only]