

Does Acute Exercise Improve Driving Performance In Patients With Untreated Sleep Apnea?

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Decreased awareness among drivers with obstructive sleep apnea (OSA), a condition in which the airflow decreases during breathing, has been shown to increase motor vehicular crash risk. Those who suffer from OSA have been found to have between a two and tenfold increase of accident risk due to feelings of fatigue resulting from fragmented sleep (George, C.F.P. 2007). Treatment using continuous positive airway pressure (CPAP) has shown mixed effects in improving driver performance (Vkaulin, et al., 2011). Therefore, our objective is to determine if acute aerobic exercise (i.e. walking) prior to driving for patients with OSA can reduce the amount of accidents. Patients with OSA that are awaiting sleep apnea treatment will first undergo a ten minute moderate-intensity exercise session and then use a high fidelity driving simulator for the next fifteen minutes. A nighttime countryside scenario with two naturalistic obstacles at random times will be used. While the subject is driving, the simulator will record lane deviation, collision events, and braking response time. The same subjects will also test the simulator without doing any exercise in order to determine if there was any benefit from the exercise. The order of the simulator sessions, both with and without exercise, will be randomized to prevent practice effect. We hope to see improved driving behavior when the subjects undergo a ten minute aerobic exercise prior to driving.

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