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Sleep Apnea Treatment Could Save Lives and Money

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Description

Each year, potentially 980 lives could be saved and \$11.1 billion in automobile-accident costs could be avoided if drivers who suffer from a disorder called obstructive sleep apnea were successfully treated with continuous positive airway pressure (CPAP), according to a study by researchers.

Contact:

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Sleep Apnea Treatment Could Save Lives & Money
By Reducing Auto Accidents, According to Researchers

Newswise — Each year, potentially 980 lives could be saved and \$11.1 billion in automobile-accident costs could be avoided if drivers who suffer from a disorder called obstructive sleep apnea were successfully treated with continuous positive airway pressure (CPAP), according to a study by researchers at the University of California, San Diego (UCSD) School of Medicine.

Published in the May 2004 issue of the journal *Sleep*, the study determined the percentage of accidents related to sleep apnea and applied the success rate of treatment to conclude how many of these accidents could potentially have been prevented.

The research team noted that 1,400 fatalities each year are caused by sleep-deprived drivers with obstructive sleep apnea, a breathing disorder caused by intermittent blockage of the airway. The condition is a common problem affecting

millions of Americans. During sleep, these individuals stop breathing for 10 to 30 seconds at a time, sometimes up to 400 times a night. As a result of poor quality sleep, persons with sleep apnea experience excessive daytime sleepiness which can lead to motor vehicle crashes.

The most common, effective treatment for obstructive sleep apnea is CPAP, where a patient wears a mask over the nose during sleep. Pressure from an air blower forces air through the nasal passages, preventing the throat from collapsing while the individual sleeps.

However, most people with obstructive sleep apnea don't realize they have the condition and don't get help.

In their study, the research team, which included investigators from the U.S. and Canada, analyzed medical research data from 1980 to 2003 to investigate the relationship between auto collisions and obstructive sleep apnea in untreated individuals. Additional data from the National Safety Council were used to estimate collisions related to obstructive sleep apnea, plus costs and fatalities, and their reduction with treatment. A final analysis included a determination of the annual cost of screening, diagnosing and treating the disorder in drivers.

"Qualitatively, the scientific community has known for approximately 20 years that sleep apnea increases the risk for automobile crashes. This is the first study to quantify the impact of obstructive sleep apnea on society, which is quite significant," noted the study's primary author, Alex Sassani, M.D., a UCSD medical student when the study was conducted and a current resident in UCSD's Department of Radiology. "The consequences of untreated obstructive sleep apnea are great, both in terms of monetary costs and lives disrupted. This is an enormous burden that demands attention."

Past studies have shown that drivers with obstructive sleep apnea have a higher rate of collisions than do individuals without the disorder. In fact, studies comparing alcohol-impaired subjects to individuals with untreated obstructive sleep apnea show that persons with untreated sleep apnea perform as poorly on simulated steering and psychomotor reaction time tests as legally intoxicated individuals.

"It is estimated that as many as 40 million Americans have undiagnosed sleep apnea," said the paper's senior author, Terence Davidson, M.D., professor of surgery, UCSD Division of Otolaryngology-Head and Neck Surgery*. "Dr Sassani's study clearly demonstrates that these people are falling asleep while driving, killing themselves and innocent bystanders. It is time for American Medicine and the American people to wake up to sleep."

The UCSD investigators noted the prevalence of obstructed sleep apnea in drivers is estimated at 3 percent, or 4.7 million drivers. A recent study of 1,391 commercial truck drivers found that 28 percent had obstructive sleep apnea, with more than one-third characterized as moderate to severe. Sassani indicated that in one year alone – the year 2000 – more than 800,000 drivers with the condition were involved in motor-vehicle accidents.

The researchers estimate that 980 of the 1,400 fatalities each year will be avoided with treatment, based on a 70 percent CPAP success rate. While the annual cost of treating sleep apnea patients is approximately \$3.18 billion, including screening costs, the researchers noted that collision costs for accidents caused by sleep apnea patients were \$15.9 billion annually. These collision costs would be reduced annually by \$11.1 billion, using a 70 percent effectiveness rate.

Furthermore, the study investigators added that the savings from CPAP treatment "do not take into account the other economic, medical and social benefits of treating obstructive sleep apnea syndrome, including decreased accidents at work, decreased hospitalization costs, and the improved quality of life."

The authors also noted that their results pertain only to CPAP treatment and not to non-CPAP treatments whose efficacy in preventing collisions has not been fully established. These include weight loss (surgical and nonsurgical), maxillomandibular advancement (surgery involving facial changes), laser correction, uvulopalatopharyngoplasty (minor surgery to lessen excessive soft-palate tissue), and oral appliances.

According to Davidson, "It is noteworthy that this study was made possible by a \$2,000 educational grant from a local sleep company, ResMed, to Dr. Sassani when he was a UCSD medical student. This is an exemplary example of how the business community and the university can partner to make good things happen."

Additional authors of the paper included Larry J. Findley, M.D., Sleep Disorders Center of Northern Colorado; Meir Kryger, M.D., University of Manitoba and Sleep Disorders Centre, St. Boniface General Hospital, Winnipeg, Canada; Eric Goldlust, Ph.D., UCSD Department of Family and Preventive Medicine; and Charles George, M.D., University of Western Ontario.

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* Dr. Davidson is a member of Medical Advisory Board for ResMed and Restore Medical.

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