

The usefulness of sleep apnea syndrome screening using a portable pulse oximeter in the workplace. | Sleep Scholar

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July 25, 2011

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Source

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Abstract

Sleep Apnea Syndrome (SAS) is a condition characterized by sleep-disordered breathing resulting in health impairment and sleep problems. From the viewpoints of the prevention of health impairment, accidents at work and traffic accidents, active implementation of screening for SAS in workplaces is necessary. Using a portable pulse oximeter, we conducted SAS screening for workers, who applied for the screening or who were instructed to participate by occupational physicians based on their symptoms at the time of medical check-up, in order to evaluate the effectiveness of a portable pulse oximeter as a screening device in the workplace. During the 2-yr study period from April 2002 to March 2004, 380 workers underwent overnight pulse oximetry at home; data on 367 of them were considered valid and included in the analysis. We deemed screening-positive as oxygen desaturation of the peripheral artery of 4% or greater if 10 or more events were observed per hour ($ODI_4 \geq 10$); or oxygen desaturation of the peripheral artery of 3% or greater if 15 or more events were observed per hour ($ODI_3 \geq 15$). Eighty-three subjects were identified as screening-positive and 54 of them underwent polysomnography. All of them were diagnosed as having SAS with an apnea hypopnea index (AHI) ≥ 5 , of which continuous positive airway pressure (CPAP) therapy was indicated in 48 cases (88.9%) with AHI ≥ 20 . On the other hand, 11 of the 284 screening-negative subjects with mild sleep disordered breathing underwent polysomnography and all of them were diagnosed as having SAS with AHI ≥ 5 . However, CPAP therapy was indicated only for 5 with AHI ≥ 20 of the 11. Therefore, in total, 65 subjects were diagnosed with SAS in this study and for 53 of them CPAP therapy was indicated. The simplicity of the SAS screening by pulse oximetry makes it easy to use for screening of workers, and this method was highly effective in detecting individuals with severe SAS for whom CPAP therapy was indicated.

J Occup Health. 2007 Jan;49(1):1-8. <http://joh.med.uoeh-u.ac.jp/e/>

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