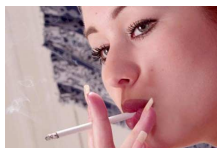


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By: Stefan Anitei, Science Editor



Smoking Impairs the Sleep!

Less deep sleep caused by nicotine!

A cigarette for calming you before going to bed? Bad news: a new study reveals that smokers are 4 times more exposed than non-smokers to sleep impairment, experiencing less of the resting deep sleep, especially in the early stages of sleep. This may be connected to a nicotine withdrawal experienced each night. "It is possible that smoking has time-dependent effects across the sleep period. Smokers commonly experience difficulty falling asleep due to the stimulating effects of nicotine. As night evolves, withdrawal from nicotine may further contribute to sleep disturbance," said co-author Dr. Naresh M. Punjabi, from Johns Hopkins University School of Medicine. The research was made on smoking and non-smoking subjects, free of diseases and drug use that could impact sleep. "In order to isolate the effects of smoking on sleep architecture, we needed to remove all factors that could potentially affect sleep, in particular, coexisting medical conditions. In the absence of several medical conditions, sleep abnormalities in smokers could then be directly associated with cigarette use," said Punjabi. Sleep patterns were analyzed using both visual analysis of electroencephalogram (EEG) patterns and power spectral analysis of the EEG (mathematical analysis of various frequencies observed within the sleep EEG). "Previous sleep studies have relied on visual scoring of sleep stages, which is time-consuming and subject to misclassification. Spectral analysis allows us to more objectively classify the sleep EEG signals and helps detect subtle changes that may have been overlooked with visual scoring," said Punjabi. Visual assessing of sleep stages appeared to be similar between smokers and non-smokers, but the spectral analysis revealed a decreased percentage of delta power (deep sleep) and an increased percentage of alpha power (light sleep) in the case of the smokers. Moreover, 22.5% of the smokers reported a non-restful sleep, compared with only 5% of non-smokers. The highest difference in sleep patterns took place at the onset of sleep, pointing to nicotine withdrawal, whose effects are more powerful in the early stages of sleep and gradually get down along the sleep cycle. "Many smokers have difficulty with smoking cessation partly because of the sleep disturbances as a result of nicotine withdrawal. By understanding the temporal effects of nicotine on sleep, we may be able to better tailor nicotine replacement to minimize the withdrawal effects that smokers experience, particularly during sleep," said Punjabi.