

# Cigarette Smoking and Nocturnal Sleep Architecture

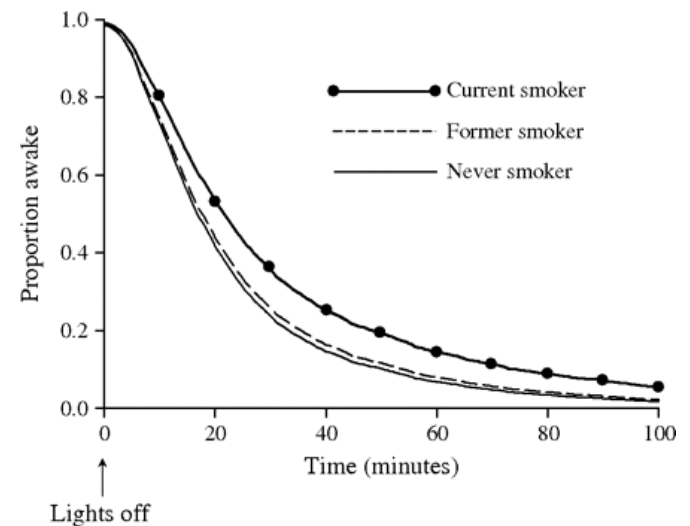
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## ABSTRACT

Cigarette smoking has been associated with a high prevalence of sleep-related complaints. However, its effects on sleep architecture have not been fully examined. The primary objective of this investigation was to assess the impact of cigarette smoking on sleep architecture. Polysomnography was used to characterize sleep architecture among 6,400 participants of the Sleep Heart Health Study (United States, 1994–1999). Sleep parameters included total sleep time, latency to sleep onset, sleep efficiency, and percentage of time in each sleep stage. The study sample consisted of 2,916 never smokers, 2,705 former smokers, and 779 current smokers. Compared with never smokers, current smokers had a longer initial sleep latency (5.4 minutes, 95% confidence interval (CI): 2.9, 7.9) and less total sleep time (14.0 minutes, 95% CI: 6.4, 21.7). Furthermore, relative to never smokers, current smokers also had more stage 1 sleep (relative proportion = 1.24, 95% CI: 1.14, 1.33) and less slow wave sleep (relative proportion = 0.86, 95% CI: 0.78, 0.95). Finally, no differences in sleep architecture were noted between former and never smokers. The results of this study show that cigarette smoking is independently associated with disturbances in sleep architecture, including a longer latency to sleep onset and a shift toward lighter stages of sleep. Nicotine in cigarette smoke and acute withdrawal from it may contribute to disturbances in sleep architecture.

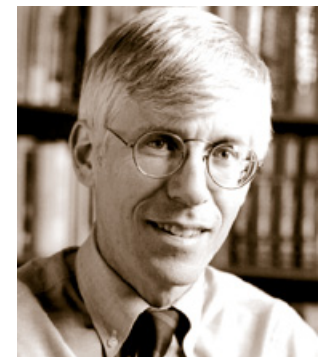
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Adjusted survival curves for time to sleep onset by smoking status, Sleep Heart Health Study, United States, 1994–1999.



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