

sleep was associated with higher prevalence of CAC relative to no insomnia/normal sleep duration (actigraphy, RR 1.29; C.I., 1.16,1.43; PSG, RR 1.30; C.I., 1.17, 1.45). After adjustment for age, sex, race/ethnicity, education, smoking, physical activity, apnea hypopnea index, and antidepressants, relationships between insomnia with actigraphic-short sleep (RR 1.13;1.02,1.25) and PSG-short sleep (RR 1.07; 0.97,1.18) were attenuated.

Conclusion: In this large multiethnic cohort, insomnia with actigraphic-short sleep was significantly associated with subclinical CVD. These findings highlight the potential importance of using objective assessments of sleep in patients with insomnia when assessing CVD risk, as well as exploring the role of actigraphy in further defining this vulnerable phenotype.

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0365

INSOMNIA SUBTYPES BEFORE AND AFTER CPAP TREATMENT OF SLEEP APNEA

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Introduction: Difficulty initiating and maintaining sleep (DIMS) and complaints of insomnia are common among obstructive sleep apnea (OSA) patients. However, the frequency of different types of DIMS (i.e., difficulty with sleep onset, waking after sleep onset, early awakening) experienced by those with untreated OSA and the impact of CPAP treatment on different types of DIMS are relatively unknown.

Methods: Participants (mean age = 54) recruited from family practice clinics completed a sleep questionnaire and underwent polysomnography (PSG). Pre-PSG data are available for those 105 who were diagnosed with OSA, including those 46 who were prescribed CPAP treatment. One and a half years after diagnosis, 20 were adherent and, for various reasons, 26 were not. Traditional adherence and DIMS criteria were used. Insomnia was defined as DIMS plus a complaint of insomnia.

Results: Of 105 participants tested pre-PSG, 27% reported sleep onset, 33% sleep maintenance, 36% early awakening problems and 43% overall DIMS. Of those with DIMS, 32% complained of insomnia; 68% did not. However, this creates an inadequate picture; results also show that the 20 CPAP adherent participants were LESS likely to have each of these sleep problems (e.g., DIMS 25%, insomnia 20%) than the 26 nonadherent participants (e.g., DIMS 52%, insomnia 38%). Moreover, although CPAP treatment resulted in improved levels of all types of DIMS (overall DIMS = 17%, insomnia = 14%), these were small reductions. The 26 nonadherent participants 1½ years later had slight increases in DIMS (56%) and insomnia (44%).

Conclusion: Different types of DIMS are common in OSA. This is especially so among large numbers who are not adherent to CPAP, but who could benefit from insomnia therapy. Perhaps severe DIMS contributes to poorer adherence. While CPAP treatment improved DIMS and insomnia complaints, it did this in the relatively few adherent individuals who reported DIMS and insomnia.

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0366

POWER OFF IS BETTER OFF: THE IMPACT OF TECHNOLOGY USE ON SLEEP AMONG UNIVERSITY STUDENTS

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Introduction: University students are more vulnerable to sleep disturbance than other populations. Sleep problems are influenced by a number of factors, including the use of Light-emitting diode (LED)-backlit devices. LED screens are present in most modern technological devices, and emit monochromatic blue light (~460 nm) that disrupts melatonin production at night. Appropriately timed exposure to light and darkness is a key factor in sleep regulation, so night-time use of LED devices likely represents a major culprit in the sleep disturbance of university students. The present study investigated the relationship between insomnia severity and LED device use before sleep.

Methods: 1,670 students at Memorial University of Newfoundland (MUN), aged 19–35, were surveyed. Participants responded to questions probing the number of devices they own, as well as their device use duration and frequency in the hours leading up to sleep and throughout the night. The Insomnia Severity Index (ISI) was used to measure insomnia symptoms. Chi-square tests of independence and odds ratios were used to examine differences in ISI scores between high- and low-level LED device users.

Results: The sample was representative of the MUN student body, with 70.6% of respondents being female, and with an average age of 22.7 years. Fifty-two percent of participants received an ISI score above the cut-off for mild insomnia, with a mean score of 8.77. Students who used their devices for one hour or more after lights out were 1.8 times more likely to experience insomnia symptoms (95% CI, 1.37 to 2.35; $p = .0005$). Those who endorsed having their sleep interrupted by their devices a few nights per week or more were also 1.64 times more likely to experience insomnia symptoms (95% CI, 1.16 to 2.31; $p = .004$).

Conclusion: This study provides strong evidence, with a large and generalizable sample, that LED device use after lights out is associated with an increase in insomnia symptoms. Additional research is needed to strengthen these findings and to ultimately inform prevention/intervention programs specific to insomnia symptoms/disorder in this population.

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0367

WILL DAYTIME ENVIRONMENTAL NOISE EXPOSURES INDUCE NIGHTTIME SLEEP DISTURBANCE?

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