Multiple regression analyses in these 259 participants suggest that sleepiness is negatively associated with age and with THC percentages in cannabis products used within the prior 24-hours, and positively associated with SMHQ score; but not associated with time of day, other medication use, or cannabis use dependency. Increased THC percentage and decreased time between consumption and bed were indicators of improved sleep quality. Percentage of CBD or ratios of THC:CBD run in separate models for prior night's sleep quality and sleepiness did not reach significance.
Conclusion: These findings support previous indications that THC can improve sleep in people using cannabis for that purpose, and suggest that increased THC results in decreased sleepiness the following day. The study limitations include no objective measure of sleep and no placebo condition. The significance of time of cannabis use in relation to sleep highlights the need to study the pharmacokinetics of smoked versus eaten cannabis products and their subsequent effects on sleep.
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0131
PLANES, TRAINS AND AUTOMOBILES: TRAFFIC NOISE AND ITS IMPACT ON SLEEP DEPTH MEASURED BY ODDS RATIO PRODUCT

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Introduction: Traffic noise events can lead to cortical and autonomic activation, disrupt sleep and impair physical and mental restoration. The odds ratio product (ORP) is a validated continuous measure of sleep depth and quality, based on automatic analysis of EEG data in 3s epochs. More so than traditional manual scoring of sleep in 30s epochs or the binary scoring of arousals, ORP allows tracking temporal changes of sleep in response to external stimuli. Here we examine event-related changes in ORP in response to nocturnal noise events.
Methods: Seventy two healthy participants (mean age 40 years, range 18-71; 40 women) slept for 11 nights in the laboratory, during which sleep was measured with polysomnography. In 8 nights they were exposed to 40, 80 or 120 road, rail and/or aircraft noise events at maximum sound pressure levels between 45-65 dBA. Event-related maximum change of ORP in a 90s window relative to pre-event baseline was analyzed with linear mixed models.
Results: Average whole night ORP increased with age (β=0.008; p<0.001), indicating decreasing sleep depth, but was not significantly affected by the average nighttime noise level or number of noise events. For events where participants were asleep at noise onset (n=29,663), ORP increased monotonically with sound pressure level (F(4,27964)=88.4; p<0.001) for all traffic modes. There was a main effect of traffic mode (F(2,25809)=58.6; p<0.001) on ORP, with a higher response to road (p<0.001) and rail (p<0.001) noise than to aircraft. The magnitude of ORP increase depended on sleep stage at noise onset, decreasing in the order of S2, SWS, REM (F(3,20955)=133.9; p<0.001), but recovery time to pre-event baseline ORP was in the reverse order. ORP change decreased as a function of age (β=-0.002; p=0.004). There were no significant effects of noise duration, sex or sleep spindle density on event-related ORP change.
Conclusion: Traffic noise led to increased ORP in an exposure-dependent manner, reflecting decreased sleep depth and quality. The clinical relevance of event-related elevations of ORP is currently unknown, and warrants further investigation.
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SELF-REPORTED SLEEP DISTURBANCE BY AIRCRAFT NOISE AROUND ATLANTA AIRPORT

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Introduction: Aircraft noise can disrupt sleep and impair recuperation. A recruitment survey for a field study on the effects of aircraft noise on sleep was sent to residents living in the vicinity of Atlanta International airport. To examine effects of aircraft noise on sleep, the survey included items on sleep quality, sleep disturbance by noise, strategies to cope with nocturnal noise and health conditions.
Methods: Questionnaires were mailed to randomly selected households around Atlanta airport. Questionnaires were completed by 290 respondents (mean age 53 years, range 21-97 years; 186 women, response rate 10.1%). Outdoor aircraft noise between 22:00-07:00 (L_{Night}), calculated in decibels (dB) for the dwelling of each respondent, was the main independent variable of interest. Logistic regression was performed for each dependent questionnaire response variable, adjusted for age, BMI, sex, race, marital status, income, education and employment.
Results: With increasing L_{Night}, there was significantly worse sleep quality (OR=1.04/dB; p<0.05), increased frequency of difficulty falling asleep within 30 minutes (OR=1.06/dB; p<0.01) and greater difficulty staying awake during daytime (OR=1.06/dB; p<0.05). An increase in L_{Night} was also associated with increased noise-induced sleep disturbance (OR=1.17/dB; p<0.0001) and annoyance (OR=1.19/dB; p<0.0001), with respondents more likely to close windows to protect their sleep (OR=1.05/dB; p<0.01) and to report difficulties concentrating (OR=0.95/dB; p<0.05). There were no statistically significant effects on diagnosed sleep disorders, hearing impairment, hypertension, arrhythmia, chronic migraine or diabetes.
Conclusion: The physiologic mechanisms underlying the negative effects of aircraft noise on sleep may be of relevance for the development of disease. Future public health policy should be informed by evidence of noise-induced sleep disruption, of which the current study is but a first step.
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STUCK SONG SYNDROME: BEDTIME MUSIC AFFECTS NOCTURNAL POLYSOMNOGRAPHY OUTCOMES

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