



Centre de Neurosciences Psychiatriques

CNP SEMINARS

ANNOUNCEMENT

Friday, October 22 2021, 11:00 – 12:00

Will it keep me awake? Common caffeine intake habits and sleep in real life situations

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Daily caffeine consumption and chronic sleep restriction are highly prevalent in society. It is well established that acute caffeine intake under controlled conditions enhances vigilance and promotes wakefulness but can also delay sleep initiation and reduce electroencephalographic (EEG) markers of sleep intensity, particularly in susceptible individuals. To investigate whether these effects are also present during chronic consumption of coffee/caffeine, we recently conducted several complementary studies. We examined whether repeated coffee intake in dose and timing mimicking 'real world' habits maintains simple and complex attentional processes during chronic sleep restriction, such as during a busy work week. We found in genetically caffeine-sensitive individuals that regular coffee (300 mg caffeine/day) benefits most attentional tasks for 3-4 days when compared to decaffeinated coffee. Genetic variants were also used in the population-based HypnoLaus cohort, to investigate whether habitual caffeine consumption causally affects time to fall asleep, number of awakenings during sleep, and EEG-derived sleep intensity. The multi-level statistical analyses consistently showed that sleep quality was virtually unaffected when > 3 caffeine-containing beverages/day were compared to 0-3 beverages/day. This conclusion was further corroborated by quantifying the sleep EEG in the laboratory in habitual caffeine consumers. Compared to placebo, daily intake of 3 x 150 mg caffeine over 10 days did not strongly impair nocturnal sleep nor subjective sleep quality in good sleepers. Finally, we tested whether an engineered delayed, pulsatile-release caffeine formula can improve the quality of morning awakening in sleep-restricted volunteers. We found that 160 mg caffeine taken at bedtime ameliorated the quality of awakening, increased positive and reduced negative affect scores, and promoted sustained attention immediately upon scheduled wake-up. Such an approach could prevent over-night caffeine withdrawal and provide a proactive strategy to attenuate disabling sleep inertia. Taken together, the studies suggest that common coffee/caffeine intake habits can transiently attenuate detrimental consequences of reduced sleep virtually without disturbing subjective and objective markers of sleep quality. Nevertheless, coffee/caffeine consumption cannot compensate for chronic sleep restriction.

Invited by jean-marie.petit@chuv.ch

Related publications

1- Baur et al (2021) Prog Neuropsychopharmacol Biol Psychiatry 109

2-Dombierer et al (2021) Sci Rep. proofs

3-Weibel et al (2021) Sci Rep 11, e4668

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Link for videoconference

<https://chuv.webex.com/chuv/j.php?MTID=m6b91e5d621537f8423ddc50b157694fd>