

Institute of Aerospace Medicine

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Caffeine and human sleep-wake regulation

Caffeine is the most widely used psychoactive substance worldwide, often consumed on a daily basis. The stimulating properties of caffeine have often been confirmed in so-called caffeine-naïve individuals, particularly during extended wakefulness. Under these conditions, evening intake of caffeine dampens homeostatic sleep pressure and phase-delays the circadian system. However, only little is known about whether these effects of caffeine persist under habitual daily intake of the stimulant during daytime, i.e., under the common pattern of consumption. I will present data from our recent study targeting the effects of daily daytime caffeine intake on several output-measures of the sleep-wake regulatory system, including cognition, sleep, and melatonin. I will discuss whether and how fast humans adapt to the continuous presence of caffeine in the diet and potential consequences of these adaptations.