

Coffeine May Disturb Sleep Quality Even When You Fall Asleep Easily: Study – Video

Overview

Coffee may affect the quality of sleep even when it does not obviously delay falling asleep, according to emerging research examining how caffeine changes brain activity during the night.

Researchers are using electroencephalography, or EEG, to study how caffeine affects sleep beyond duration and nighttime awakenings. EEG records the brain's electrical activity and can detect changes in slow-wave activity, an important marker of deep sleep and the brain's restorative processes.

Caffeine may allow some people to fall asleep normally and remain asleep for several hours while still reducing slow-wave activity. This means a person could spend eight hours in bed and feel that they slept well, yet experience changes in the depth and restorative quality of sleep.

Experts note that subjective sleep quality does not always match findings from brain recordings. Reduced deep-sleep activity may occur without obvious awakenings, making the effect difficult to recognise.

The impact of caffeine also varies considerably between individuals. Genetics, metabolism, age, stress and existing fatigue can influence how strongly caffeine affects sleep. For some people, caffeine consumed earlier in the day may still have effects by bedtime, depending on how quickly their bodies process it.

This may be particularly relevant for people who regularly use coffee or other caffeinated products to maintain alertness and concentration. Caffeine can temporarily reduce the perception of tiredness, but if it also reduces nighttime recovery, some people may enter a cycle of greater daytime fatigue followed by increased caffeine use.

However, caffeine does not affect everyone in the same way, and its impact depends on factors such as the amount consumed, timing, individual sensitivity and overall sleep health.

The findings highlight why sleep duration alone may not fully reflect sleep quality. More research is needed to establish how different caffeine doses and consumption patterns affect long-term sleep quality and health.

REFERENCE: James Chmiel, Donata Kurpas. The Caffeinated Brain Part 2: The Effect of Caffeine on Sleep-Related Electroencephalography (EEG)—A Systematic and Mechanistic Review. *Nutrients*, 2026; 18 (8): 1220 DOI: 10.3390/nu18081220

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