

# Late afternoon and early evening caffeine can disrupt sleep at night

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A new study shows that caffeine consumption even six hours before bedtime can have significant, disruptive effects on sleep.

"Sleep specialists have always suspected that caffeine can disrupt [sleep](#) long after it is consumed," said American Academy of Sleep Medicine President M. Safwan Badr, MD. "This study provides objective evidence supporting the general recommendation that avoiding caffeine in the late afternoon and at night is beneficial for sleep."

Results show that 400 mg of caffeine (about 2-3 cups of coffee) taken at bedtime, three and even six hours prior to bedtime significantly disrupts sleep. Even when caffeine was consumed six hours before going to bed, objectively measured total sleep time was dramatically reduced (more than one hour). However, subjective reports suggest that participants were unaware of this sleep disturbance.

The study is in the Nov. 15 issue of the *Journal of Clinical Sleep Medicine*, which is published by the American Academy of Sleep Medicine.

"Drinking a big cup of coffee on the way home from work can lead to negative effects on sleep just as if someone were to consume caffeine closer to bedtime," said lead author Christopher Drake, PhD, investigator at the Henry Ford Sleep Disorders and Research Center and associate professor of psychiatry and behavioral neurosciences at Wayne State University in Detroit, Mich. "People tend to be less likely to detect the disruptive effects of caffeine on sleep when taken in the afternoon," noted Drake, who also is on the board of directors of the Sleep Research Society.

Drake and his research team studied 12 healthy normal sleepers, as determined by a physical examination and clinical interview. Participants

were instructed to maintain their normal sleep schedules. They were given three pills a day for four days, taking one pill at six, three and zero hours prior to scheduled [bedtime](#). One of the pills contained 400 mg of caffeine, and the other two were a placebo. On one of the four days, all three pills were a placebo. Sleep disturbance was measured subjectively with a standard sleep diary and objectively using an in-home sleep monitor.

According to the authors, this is the first study to investigate the effects of a given dose of caffeine taken at different times before sleep. The results suggest that [caffeine](#) generally should be avoided after 5 p.m. in order to allow [healthy sleep](#).

**More information:** "Caffeine Effects on Sleep Taken 0, 3, or 6 Hours before Going to Bed," *Journal of Clinical Sleep Medicine*, 2013.

Provided by American Academy of Sleep Medicine

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