

Expecting an afternoon nap can reduce blood pressure

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Where does the benefit lie in an afternoon nap" Is it in the nap itself--or in the anticipation of taking a snooze" Researchers in the United Kingdom have found that the time just before you fall asleep is where beneficial cardiovascular changes take place.

This finding is part of a study entitled Acute Changes in Cardiovascular Function During the Onset Period of Daytime Sleep: Comparison to Lying Awake and Standing, found in the online edition of the Journal of Applied Physiology, published by The American Physiological Society. The study was conducted by Mohammad Zaregarizi, Ben Edwards, Keith George, Yvonne Harrison, Helen Jones and Greg Atkinson, of the Liverpool John Moores University in Liverpool, U.K.

The Afternoon Nap

Afternoon naps, or siestas, are practiced in many Mediterranean and Latin American countries such as Spain and Argentina. They are typically short naps or rest periods of no more than an hour that are taken in the afternoon.

While earlier studies on siestas have found that this practice may slightly increase the risk of heart attack, newer and more controlled studies have shown an inverse relationship between siesta taking and fatal heart attacks. In a recent epidemiological study of 23,000 people in Greece, those who regularly took siestas showed a 37% reduction in coronary

mortality compared to those who never nap, while individuals who occasionally napped in the afternoon had a reduction of 12%.

Why do afternoon naps affect cardiovascular function" One reason could be changes in blood pressure. At night, our blood pressure and heart rate decreases as we sleep. Some researchers hypothesize that the lower blood pressure reduces strain on the heart and decreases the risk of a fatal heart attack.

Most studies have focused on cardiovascular behavior in nighttime sleeping. This study provides a detailed description of changes in cardiovascular function of daytime sleep in healthy individuals, comparing napping with other daytime activities such as standing and lying down without going to sleep.

Nap versus Conscious Rest

The researchers tested nine healthy volunteers (eight men, one woman) who did not routinely take afternoon naps. The volunteers attended the university laboratory on three separate afternoons after sleeping four hours the night before. The volunteers wore equipment that checked blood pressure, heart rate, and forearm cutaneous vascular conductance (which determines dilation of blood vessels).

During one afternoon session, the volunteer spent an hour resting, lying face-up in bed. During another session, the volunteer spent an hour relaxed, but standing. And in one session, the volunteer was allowed an hour to sleep, lying face-up. During the sleep stage, the researchers measured the volunteer's different stages of sleep.

The session in which the volunteer was allowed to fall asleep was delineated into three phases:

- Phase 1: A five-minute period of relaxed wakefulness before lights were turned off (volunteers had been lying on the bed for a minimum of 15 minutes before this phase)
- Phase 2: The period between “lights out” and the onset of Stage 1 sleep (loss of some conscious awareness of the external environment)
- Phase 3: The period between the Stage 1 and the onset of Stage 2 sleep (conscious awareness of the external environment disappears)

Changes Found Only in Pre-Sleep

Researchers found a significant drop in blood pressure during the sleep trial, but not during the resting or standing trials. What’s more, this drop in blood pressure occurred mostly after lights out, just before the volunteer fell asleep.

This reduction in blood pressure may be one explanation for the lower cardiovascular mortality that some studies have found among people who habitually take siestas. On the other hand, some studies of nocturnal sleep have shown that blood pressure rises when we awake and that more cardiac deaths occur in the mornings. So the John Moores team will next look at blood pressure during the waking portion of the afternoon nap to see if this period may also pose an increased danger of coronary mortality.

Source: American Physiological Society

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