

Naps and their effectiveness

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In today's conversation about sleep deprivation, there are a lot of misconceptions about the effectiveness of mid-day naps. Some believe that mid-day naps are helpful; some believe they are disruptive; others do not know for how long to nap. These nap-related misconceptions need clarification. Research suggests that both objective and subjective measurements indicate that some mid-day naps are effective recuperative strategies.

Before one can understand the benefits of a nap, one must understand the benefits of sleep as a whole. There are two major stages of sleep: non-rapid eye movement (NREM) sleep, which occurs for about 80% of the night, and rapid-eye movement (REM) sleep which fills the last 20%. Although the stages are different in nature and benefit, both are recuperative ("Sleep," n.d.). Interruptions can produce some negative effects if the sleep is in the wrong stage of the cycle (Kubo et al., 2010; Miyasita, Fukuda, & Inugami, 1989), but the sleep can still be somewhat helpful even if of poor quality or duration (Signal, Gander, Anderson, Brash, 2009). This beneficial quality is why naps can often be an effective method to improve the problems brought on by sleep deprivation.

Naps have been found to be helpful in a number of studies: one study showed that naps were more effective than caffeine (Horne, Anderson, Platten, 2008); another shows that a midday nap after sleep deprivation can improve alertness, remedy sleepiness, and increase white blood cell count (Faraut et al., 2011); another study shows that a frequently-napping infant has better long-term

memory (Hupbach, Gomez, Bootzin, Nadel, 2009); a study of 100 adults aged 60 to 89 showed that two daily naps were healthier than just one (Dautovich, McCrae, Rowe, 2008). In contrast, some studies have found some types of napping to be detrimental to certain activities, such as a transcription task (Kubo et al., 2010). The duration of sleep is important to consider when napping. A division can be made between short naps and longer ones.

Short naps do not allow one to enter deep sleep simply by nature of their duration, but they can still be restful and effective. A study tested naps of five minutes, 10 minutes, 20 minutes, and 30 minutes. The study also tested a no-nap control. It was found that 10-minute naps were the most effective, though all but the five-minute nap were recuperative (Brooks & Lack, 2006). Another study also found 10-minute naps to be beneficial, and found that naps of 30 and 90 seconds were ineffective (Tietzel & Lack, 2002). Both studies suggest that some beneficial biological process occurs in the first 10 minutes of sleep, and though neither is sure about what that process is, both suggest that even short naps can be useful.

Longer naps can also be effective, so long as they allow a person to enter deep sleep. Both NREM and REM sleep are recuperative (“Sleep,” n.d.), but interruptions can undo some of these effects and may even be detrimental (Kubo et al., 2010; Miyasita et al., 1989). Each sleep cycle lasts roughly 1.5 hours to two hours, though the time varies per person (“Sleep,” 2000). A nap is most effective when one wakes up at the end of one’s sleep cycle. If it is not, it can be detrimental to performance despite a lesser feeling of sleepiness (Kubo et al., 2010). However, other studies have shown that even poor-quality sleep can still

be somewhat helpful (Signal et al., 2009). While interruptions of deep sleep are of debatable harm, it is clear that long naps are helpful if interrupted properly.

A sleepy reader might ask how to apply this nap-related knowledge. If one only has a short period of time to nap, a ten-minute nap is the most recuperative method under 30 minutes (Brooks & Lack, 2006; Tietzel & Lack, 2002). If given a longer period of time, one should try to rest for multiples of about 1.5 to two hours (though this number varies from person to person). In today's sleep-deprived world, naps can be an effective strategy to compensate for this sleepiness.

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