

[Health](#)

The Best Things in Life are Z's

Sara Mednick pits the world's No. 1 stimulant against napping in a test of memory.

By: [Lindsey McCormack](#) | July 31, 2008 | 09:00 AM (PDT) | [Comments](#)

It's 1:30 p.m., post-lunch, and your eyelids are feeling heavy. Your boss called you this morning and needed you to do something ... but what was it? Your brain may be asking for a rest, but you'll likely reach for stimulation instead — about 90 percent of Americans use caffeine every day.

Though it should make you feel more awake, caffeine probably does nothing to help you recall what was said this morning. A [new study](#), just published in the journal *Behavioural Brain Research*, shows that an hour of shut-eye is a far more effective restorer of memory than a cup of coffee.

The study's main author, [Sara Mednick](#), is a professor of psychiatry at the University of California, San Diego. In 2002, she tested visual perception in a group of college students, finding that even in well-rested individuals the ability to discern shapes declines steadily throughout the day. A 30-minute afternoon nap halts further deterioration, however, and a 60-minute nap actually restores people to their morning capacity.

Such findings led her to become an ardent nap advocate: She wrote a general-interest book called *Take a Nap! Change Your Life* and moonlights as a corporate nap consultant.

Of course, modern worker bees rarely have the luxury of an [hourlong midday doze](#). Various studies have verified that in the right dose — which varies from person to person — caffeine enhances alertness and concentration. But its effects, if any, on higher cognitive functions like learning and memory are less clear.

For Mednick's experiment, her team recruited a group of undergrads and divided them into three groups — caffeine, nap and placebo. Each group would be tested on three different facets of memory — verbal, motor and perceptual. After a full night's rest, testing began: For the verbal task, subjects listened to a list of unrelated words. The motor task measured the accuracy of their fingers tapping a specific sequence on a keyboard. For the perceptual task, they were judged by the speed at which they could identify the orientation of bars on a screen.

At midday, one group was treated to a 60- to 90-minute nap, while the others took a placebo or caffeine pill — at 200 milligrams, [about the same](#) as a regular Dunkin' Donuts coffee. Seven hours after the first morning session, subjects were retested on what they had learned. For Mednick, the most striking result was in the verbal area — nappers significantly outperformed the placebo and caffeine groups in the number of words they could recall. For motor accuracy, nap and placebo beat caffeine; for perceptual quickness, nap and caffeine beat placebo.

Mednick believes her results reflect the fact that verbal, motor and perceptual memory each involves a different region of the brain. Recalling a list of words — or specific instructions from a boss or driving directions — engages the hippocampus, a region that recharges during the period of deep sleep called [stage 4](#), or “slow wave sleep.” This kind of deliberate, explicit learning

therefore benefits most from a generous midday nap.

Perceptual memory, on the other hand, is innate — through repeated exposure, the visual system learns to recognize and respond without conscious thought. Radiologists, for example, tap into their perceptual memory to identify tumors in an X-ray.

Motor memory lies somewhere in between — at first learning is deliberate but soon feels as intuitive as riding a bicycle. In this area, Mednick also noted an increased benefit from napping and evidence of overstimulation in the declining accuracy of the caffeinated finger-tappers.

Whether caffeine adversely affects any type of memory remains an open question —other researchers believe its effects are neutral except in sleep-deprived individuals, where it can be a boon.

Nonetheless, Mednick's lesson is clear: For a midday memory boost, nap clearly trumps caffeine. "It's an investment of time to take a 60-minute nap, though if you think of it, the time difference between going to Starbucks for a coffee may be only half an hour," she said. "If there's a chance of flagging, I'd rather take a nap."

[Sign up for our free e-newsletter.](#)

Are you on Facebook? [Click here to become our fan.](#)

[Add our news to your site.](#)

E-mail

We encourage you to share any articles or material you find on Miller-McCune.com with friends and colleagues. Please fill in the fields below with the name and e-mail address, separating multiple addresses with semi-colons (;). Then fill in the same information for you. Miller-McCune will not keep any information about you or your friend, and the e-mail your friends receive will appear to have come from your e-mail address. The asterisk (*) denotes a required field.

Articles

Archive: [July 2008 Meet Our Writers](#)

Post A Comment

We want your feedback but you must be [logged in](#) first.

Trenchant and snarky are cool but all comments are subject to approval/removal.

Want more space than a little box? [Write for us!](#)

[Create an account](#)

Comments

[Protected by Akismet](#)
[Blog with WordPress](#)