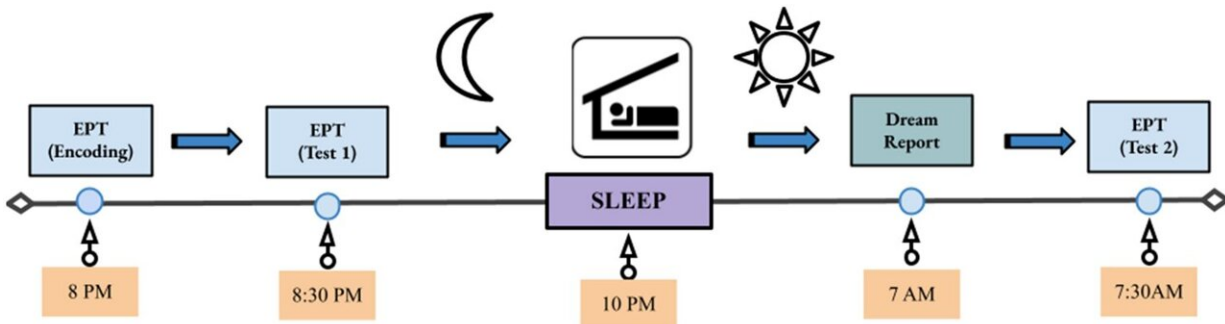


Dreaming is linked to improved memory consolidation and emotion regulation

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Study Protocol. At 8 PM, participants encoded images from the EPT, emotional picture task, followed by an immediate test. Next, participants slept either at home or in the lab depending on their method of testing being remote or in-person, respectively. Upon awaking, participants reported the presence and description of their dreams and completed a delayed EPT test. Credit: *Scientific Reports* (2024). DOI: 10.1038/s41598-024-58170-z

A night spent dreaming can help you forget the mundane and better process the extreme, according to a new University of California, Irvine study. Novel work by researchers in the UC Irvine Sleep and Cognition Lab examined how dream recall and mood affected next-day memory consolidation and emotion regulation.

The [findings](#), published recently in *Scientific Reports*, indicate a trade-off in which emotionally charged memories are prioritized, but their severity

is diminished.

"We discovered that people who report dreaming show greater emotional memory processing, suggesting that dreams help us work through our [emotional experiences](#)," said corresponding author Sara Mednick, UC Irvine professor of cognitive sciences and lab director.

"This is significant because we know that dreams can reflect our waking experiences, but this is the first evidence that they play an active role in transforming our responses to our waking experiences by prioritizing [negative memories](#) over neutral memories and reducing our next-day emotional response to them."

Lead author Jing Zhang, who earned a Ph.D. in cognitive sciences at UC Irvine in 2023 and is now a postdoctoral research fellow at Harvard Medical School, added, "Our work provides the first empirical support for dreaming's active involvement in sleep-dependent emotional memory processing, suggesting that dreaming after an emotional experience might help us feel better in the morning."

The study involved 125 women—75 via Zoom and 50 at the Sleep and Cognition Lab—who were in their mid-30s and part of a larger research project on the effects of the menstrual cycle on sleep.

Each subject's session began at 7:30 p.m. with the completion of an emotional picture task in which they viewed a series of images depicting negative and neutral experiences (such as a [car accident](#) or a field of grass), rating each on a nine-point scale for the intensity of feeling it sparked.

Participants were then immediately given the same test with new pictures and only a sampling of previously viewed images. In addition to rating their emotional responses, the women had to indicate whether

each image was old or new, which helped researchers develop a baseline for both memory and emotional response.

Then subjects went to sleep either at home or in one of the sleep lab's private bedrooms. All wore a ring that monitored sleep-wake patterns. Upon waking the next day, they assessed whether they had dreamed the previous night and, if so, recorded in a sleep diary the [dream](#) details and overall mood, using a seven-point scale from extremely negative to extremely positive.

Two hours after waking, the women completed the second emotional picture task from the night before to measure image recall and reaction.

"Different than typical sleep diary studies that collect data over weeks to see if daytime experiences appear in dreams, we used a single-night study focused on emotionally charged material and asked if the subject's ability to recall their dream was associated with a change in memory and emotional response," Zhang said.

Participants who reported dreaming had better recall and were less reactive to negative images over neutral ones, a pattern that was absent in those who did not remember dreaming. Additionally, the more positive the dream, the more positively that individual rated negative images the next day.

"This research gives us new insight into the active role dreams play in how we naturally process our day-to-day experiences and might lead to interventions that increase dreaming in order to help people work through hard life experiences," Mednick said.

More information: Jing Zhang et al, Evidence of an active role of

dreaming in emotional memory processing shows that we dream to forget, *Scientific Reports* (2024). [DOI: 10.1038/s41598-024-58170-z](https://doi.org/10.1038/s41598-024-58170-z)

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