

Sleep study finds post-karaoke stress is strengthened by REM sleep

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We're all familiar with the fact that the quality of our sleep has a strong impact on our waking lives. But what you may not know is that sleep stages contribute to how we process life experiences and memories in

different ways. Deep sleep, or slow wave sleep (SWS), is associated with memory consolidation, which makes memories longer lasting.

Our understanding of rapid eye movement (REM) sleep is less clear: although it is associated with the way we process emotions and how well we remember more emotionally charged experiences, there is conflicting evidence for the exact role it plays.

In a study led by Anu-Katriina Pesonen from the SleepWell Research Program Unit at the University of Helsinki in Finland, the scientists sought to shed more light on the role of sleep stages in emotional processing by investigating how SWS and REM sleep affect stress-related responses. The paper is [published](#) in the journal *eNeuro*.

They divided 29 participants into two groups: one in which SWS was selectively disrupted, and one in which REM was disrupted. To trigger stress responses in participants, experimenters applied a karaoke paradigm in which participants performed karaoke without being able to listen to their singing and then later had to listen to clips of their recordings with no background music.

Physiological stress responses induced by the clips were measured before the night of sleep in which disruption occurred and in two separate mornings after the night of sleep disruption.

The scientists found that suppressing SWS while keeping REM sleep resulted in stronger physiological stress responses the next morning than those following suppression of REM sleep. REM sleep's preservation of the [stress response](#) may be due to its strengthening of how emotionally charged a stressful memory is.

This study advances our understanding of how sleep stages differentially impact [emotional responses](#) and may inform treatment options for

anxiety disorders.

More information: Risto Halonen et al, REM sleep preserves affective response to social stress – experimental study, *eNeuro* (2024).
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