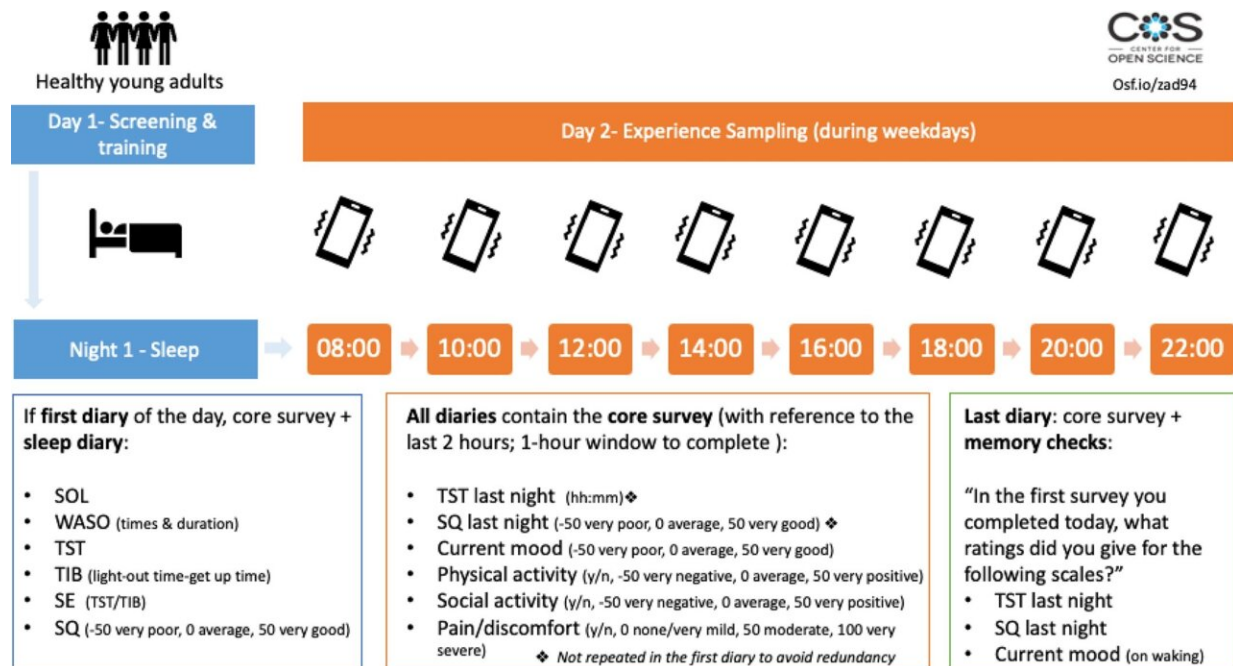


Today's experience impacts how we feel about last night's sleep quality

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Study design of the 2-day experience sampling study. SE, sleep efficiency; SOL, sleep onset latency; SQ, sleep quality; TIB, total time in bed; TST, total sleep time; WASO, wake after sleep onset; y/n, yes or no. Credit: *Journal of Sleep Research* (2022). DOI: 10.1111/jsr.13764

In the age of the fitness watches and smartphones, we often wake up to see an app-generated "sleep quality score" evaluating how well we slept. People rarely wonder what sleep quality actually means and which aspects of our experience matter most when we come to judge our own

sleep.

How people make a judgment of the quality of their sleep is less well understood than previously thought. It was assumed that people weigh-up the timing, awakenings, and other aspects of the night to judge sleep quality.

New research from the University of Warwick out today suggests that how well we think we slept is not only determined throughout the night but also throughout the following day. Findings, published in the *Journal of Sleep Research*, show that the activities we engage in help us define how well we slept the night before, and that our judgment can change as new information becomes available.

The team, led by Nicole Tang, Professor of Clinical and Health Psychology at the University of Warwick asked 119 participants to rate their sleep quality at intervals throughout the day using timed surveys sent to their mobile phones. The surveys also asked participants about their mood, any social or [physical activities](#) they engaged in, and how positive or negative these activities were.

It revealed that 91.1% of participants changed their perception of sleep quality as the day unfolded. The team, pre-empting that these changes may simply be due to bad memory, incorporated a memory test and found that participants were able to accurately recollect their initial impressions of their sleep. It was found that engaging in positive physical activity was associated with improvements to judged sleep quality, suggesting that what happens the following day influences how we think we slept the night before.

Adam Sanborn, co-author and Professor of Psychology at the University of Warwick, said "The role that the day plays in determining the previous night's sleep quality seems more important than first believed.

Rather than robotically calculating sleep variables, it seems that our assessment of sleep quality is open to new information and reflection. As our day unfolds, new information is used to better inform the perception of sleep quality, specifically positive physical activity the next day."

Lead author Nicole Tang added: "The fact that we saw sleep quality judgment change as the day unfolds does not mean that sleep quality is an unreliable measure, somehow being less scientific or informative than sleep quality scores calculated from device measurements. Instead, it is helpful to think of sleep quality as a different dimension of sleep whereby our evaluations of both sleep and post-sleep experience matter."

Ptolemy Banks, co-author and researcher at the University of Warwick, said: "From a clinical perspective, understanding how we arrive at judgements of good or bad [sleep quality](#) is crucial to understanding patients with insomnia and other sleep-related conditions. Also, in providing sleep interventions, there may be benefits to be reaped by adopting a 24-hour perspective, focusing on both improving sleep experience at night as well as enhancing activity engagement during the day."

More information: Nicole K. Y. Tang et al, Judgement of sleep quality of the previous night changes as the day unfolds: A prospective experience sampling study, *Journal of Sleep Research* (2022). [DOI: 10.1111/jsr.13764](#)

Provided by University of Warwick

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