

Replaying our days learning in our sleep (w/ video)

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Mean reaction times (RT) showing a reduction during training session and a further decrease between pre and post-sleep testing. Image: [doi:10.1371/journal.pone.0018056](https://doi.org/10.1371/journal.pone.0018056)

(PhysOrg.com) -- According to a recent study, our sleep may not be as empty of brain function as was originally thought. The study, published in *Public Library of Science One*, was led by sleep researcher Delphine Oudiette from the Universite Pierre et Marie Curie-Paris.

Original theories were that, while sleeping, our minds were essential empty slates with little neurological activity. However, this recent study provides evidence that during sleep, our body replays the cognitive and motor skills learned throughout the preceding day. Providing evidence of this 'replay' hypothesis was the goal of this study.

The research consisted of a simple test administered to 19 sleepwalkers,

20 REM sleep behavior disorder patients, and 18 healthy sleep control patients. Participants were taught a motor task involving hitting an assortment of colored-coded buttons in sequence. They were then asked to repeat this task while in bed but still awake. Researchers then taped the participants while they slept.

What they discovered was that many of the participants would physically repeat and perform the tests they had previously been administered. Looking like a choreographed sleep dance, these participants were ‘practicing’ what they had learned, suggesting that cognitive and motor processing were functioning during sleep.

This study provides evidence that, while sleeping, our [brain function](#) remains similar to that of when we are awake and learning. Essentially, for our brains, it appears as if sleep is not as much of a time of rest as it is a practice session for learning.

While previously seen in animal studies, this is the first study which shows evidence of 'replay' sleep behavior in humans. Researchers are hoping that continued study will help provide information about cognitive functions occurring during [sleep](#).

More information: Oudiette D, Constantinescu I, Leclair-Visonneau L, Vidailhet M, Schwartz S, et al. (2011) Evidence for the Re-Enactment of a Recently Learned Behavior during Sleepwalking. *PLoS ONE* 6(3): e18056. [doi:10.1371/journal.pone.0018056](https://doi.org/10.1371/journal.pone.0018056)

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