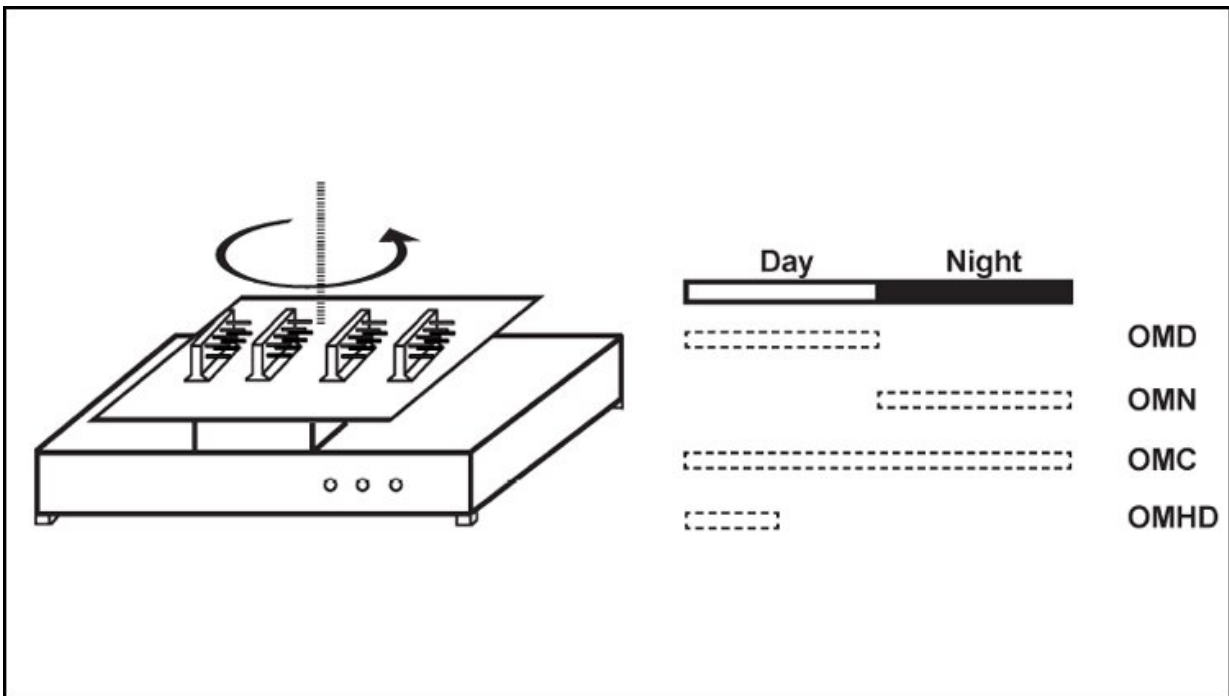


Why motion makes you sleepy: Insight from fruit flies

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Experimental setup and design. Credit: Lone et al., JNeurosci 2021

People fall asleep on long car rides, fussy babies can be lulled to sleep in a rocking chair, and fruit flies in a tube doze off while spinning in slow circles. The mechanism behind motion-induced sleep is unclear in humans, but in fruit flies, it depends on motion-sensitive neurons in sensory organs, according to new research published in *The Journal of Neuroscience*.

Lone et al. monitored the sleep of [fruit flies](#) while they were moved in circles on a shaker. They repeated the experiment during the day and the night and on several genetic strains of flies. Slow rotational speeds increased the frequency of daytime sleep in both male and female flies. The effect continued in flies missing key circadian clock genes, indicating the mechanism does not rely on the time of day.

The research team also investigated the role of nanchung receptors, an ion channel abundant in sensory organs that is sensitive to vibrations, [motion](#), and other mechanical sensations. Motion-induced sleep did not occur as often in the genetic strain of fly lacking nanchung-expressing neurons. Physically removing the nanchung neurons reduced the effect even more. There may be a similar mechanism behind motion-induced sleep in humans via vibration-sensitive cells in the ear.

More information: Shahnaz Rahman Lone et al, Mechanosensory Stimulation via Nanchung Expressing Neurons Can Induce Daytime Sleep in *Drosophila*, *The Journal of Neuroscience* (2021). [DOI: 10.1523/JNEUROSCI.0400-21.2021](#)

Provided by Society for Neuroscience

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