

# Brain wave activity associated with circadian preferences

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A new study from the University of Helsinki, Finland, shows that individual circadian preference is associated with brain activity patterns during the night.

Sleep spindles are bursts of oscillatory brain [activity](#) visible on an EEG that occur mainly during stage 2 sleep. Sleep spindles are linked for example to sleep maintenance and strengthening of the [memory traces](#) during sleep.

The study explored the association between individual circadian preference and sleep [spindle](#) activity among 170 17-year-old participants, who underwent a sleep EEG monitoring at their home environment.

"We observed a significantly weaker spindle activity among the morning preference group compared to other groups. The spindle activity also decreased more towards the morning hours," explains the principal investigator, Professor Anu-Katriina Pesonen. – This might be a potential facilitator underlying earlier circadian rhythm.

The study published in *Scientific Reports* shows for the first time a link between circadian [preference](#) and sleep maintaining sleep microstructures, indicated by sleep spindle activity.

The research was conducted in Sleep & Mind -research group at the University of Helsinki, Faculty of Medicine.

**More information:** Ilona Merikanto et al. Circadian preference towards morningness is associated with lower slow sleep spindle amplitude and intensity in adolescents, *Scientific Reports* (2017). [DOI: 10.1038/s41598-017-13846-7](https://doi.org/10.1038/s41598-017-13846-7)

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