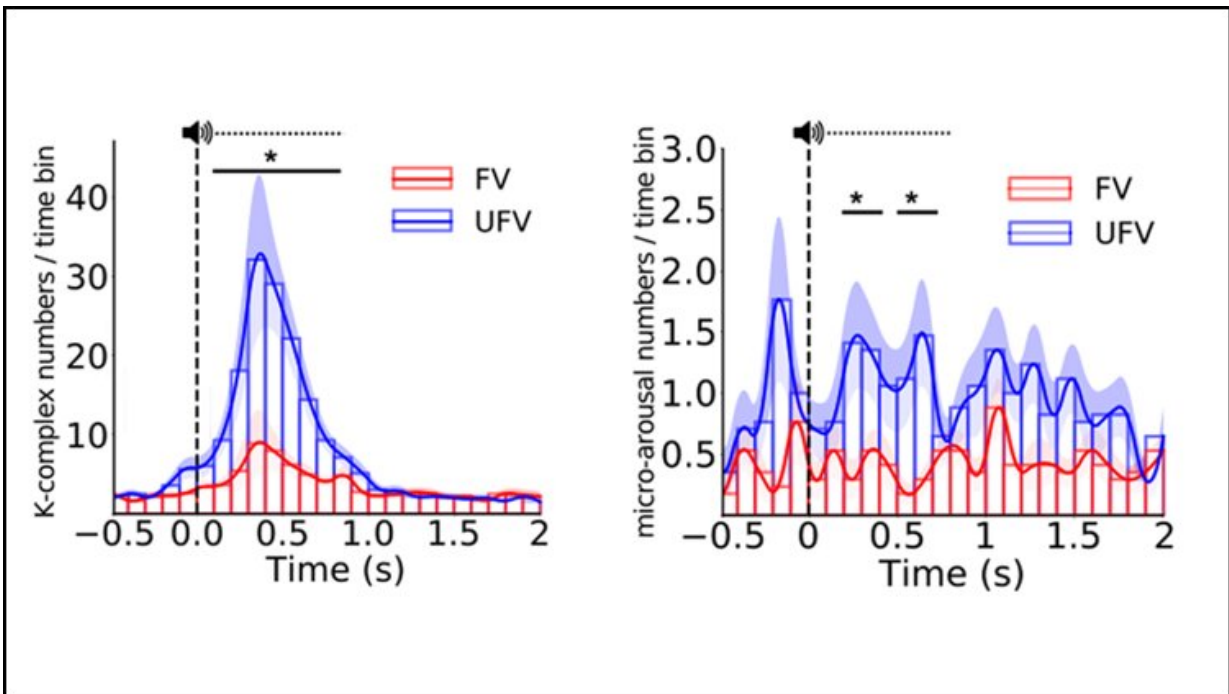


The brain pays attention to unfamiliar voices during sleep

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Temporal aspects of the difference in the triggered K-complexes and micro-arousals. LEFT: The difference between UFV and FV in the number of triggered K-complexes was significant from 100ms to 800ms. RIGHT: The difference in the number of micro-arousals between FVs and UFVs was significant in the periods from 200 to 400ms, and from 500 to 700ms. Credit: Ameen et al., JNeurosci 2022

A good night's sleep is not as simple as it appears. While you snooze,

your brain continues to monitor the environment, balancing the need to protect sleep with the need to wake up. One example of how the brain accomplishes this is by selectively responding to unfamiliar voices over familiar ones, according to new research published in *JNeurosci*.

Researchers at the University of Salzburg measured the [brain activity](#) of sleeping adults in response to familiar and unfamiliar voices. Unfamiliar voices elicited more K-complexes, a type of brain wave linked to sensory perturbances during sleep, compared to familiar voices. While familiar voices can also trigger K-complexes, only those triggered by unfamiliar voices are accompanied by [large-scale changes](#) in brain activity linked to sensory processing.

Brain responses to the unfamiliar voice occurred less often as the night went on and the voice became more familiar, indicating the brain may still be able to learn during sleep. These results suggest K-complexes allow the brain to enter a "sentinel processing mode," where the [brain](#) stays asleep but retains the ability to respond to relevant stimuli.

More information: The brain selectively tunes to unfamiliar voices during sleep, *JNeurosci* (2022). [DOI: 10.1523/JNEUROSCI.2524-20.2021](#)

Provided by Society for Neuroscience

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