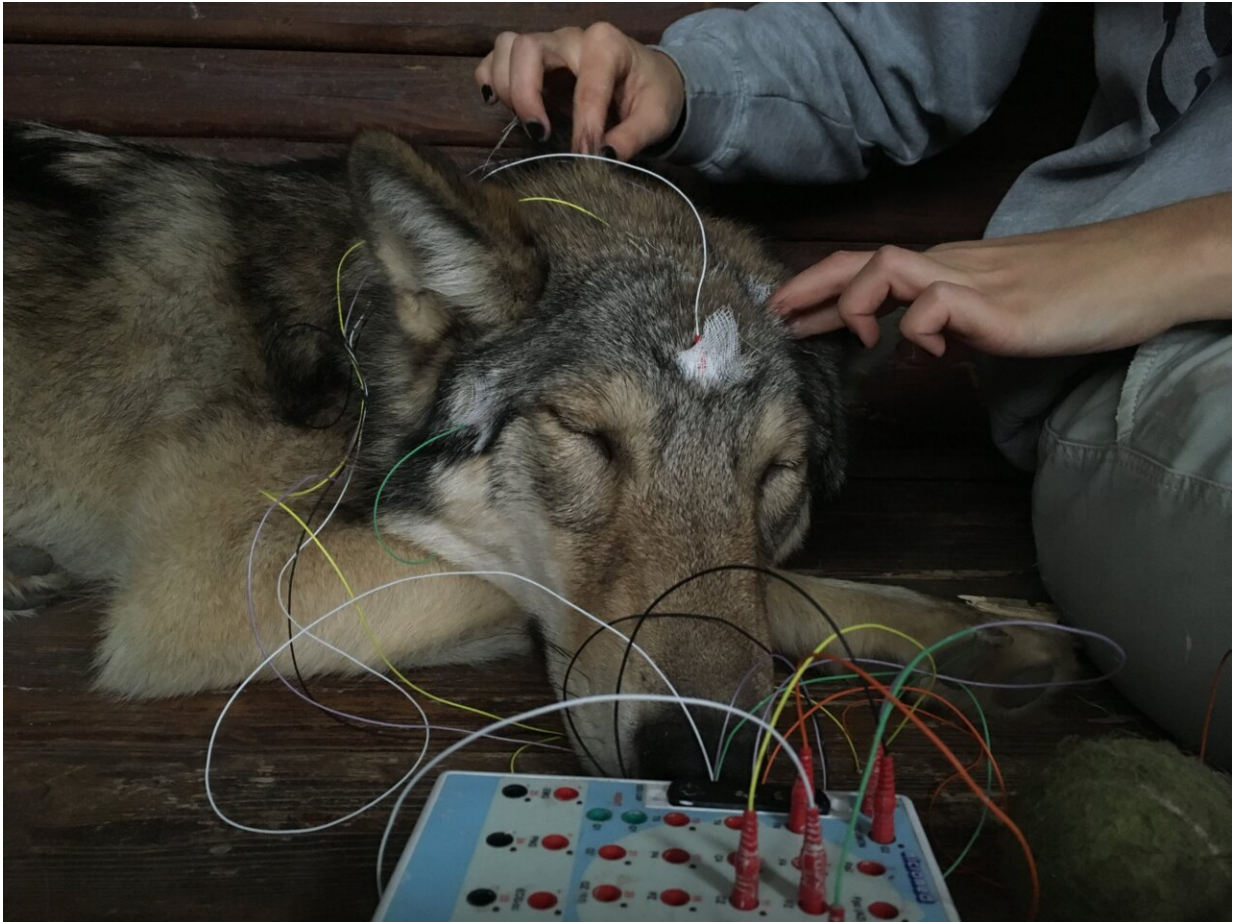


Do wolves sleep like dogs?

July 11 2022



A sleeping young wolf with electrodes. Credit: Department of Ethology / Eötvös Loránd University

Researchers at the Department of Ethology at Eötvös Loránd University, Hungary, have measured the sleep of the dog's wild counterpart, the

wolf, for the first time. Their new study was published in *Scientific Reports*.

In the study, fully non-invasive EEG measurements were applied; a harmless procedure, attaching electrodes on the surface of the skin, similarly to human sleep EEG methods.

The increasing interest in canine sleep research stems from its advantages to study the sleep of a domesticated species adapted to the [human environment](#). Evolutionary adaptations to environmental circumstances—such as sleeping in a protected environment—could have shaped humans' sleep. Thus, similar changes might be expected in the sleep of other species adapted to the human environment. For example, [dogs](#), similarly to humans, sleep more superficially in an unfamiliar environment.

To gain a better understanding of the effects of domestication and cohabitation with humans on sleep phenotypes and physiology, comparing the dog to its wild counterpart, the wolf, offers a unique opportunity.



A) sleeping young wolf and B) dog with electrodes. Credit: Department of Ethology / Eötvös Loránd University

"Although dog-wolf [comparative studies](#) have already been conducted in several areas of research, including behavioral and [genetic studies](#), the neural processes of wolves remain a largely unexplored field," said Anna Bálint, researcher at the MTA-ELTE Comparative Ethology Research Group. "We measured the sleep EEG of seven hand-raised, extensively socialized wolves, using the same methodology as has been applied in family dogs. We successfully measured all sleep stages (drowsiness, [deep sleep](#), and REM) that were previously observed in dogs as well."

It may seem surprising that wolves can be measured by EEG the same way as our good old family pets, the dogs. However, by hand-raising and intensely socializing wolves from a very early age, they can be handled and comforted in much the same way as dogs. Wolves were surrounded by familiar people during the experiments, petting and caressing them until they calmed down, dozed off and eventually fell asleep. Whenever the wolves became aroused, the caretaker and experimenter calmed the wolves by praising and cuddling them until they settled again.

"While young dogs and wolves showed a pretty similar distribution of sleep stages, the time spent in REM seemed to be less in dogs than in [wolves](#), and this difference is even more apparent in the senior animals," said the first author of the publication, Vivien Reicher, Ph.D. student at the Ethology Department of ELTE. "This finding is especially intriguing since the amount of REM sleep has been linked to various different effects including neurodevelopment, stress, domestication, but also memory consolidation."

"Although the sample size in the current study is low and the age distribution of the subjects is too skewed to draw comparative conclusions, it can be considered an important first step in collecting adequate amount of data to properly describe the wolf's sleep," said Márta Gácsi, leader of this project, senior researcher at the MTA-ELTE Comparative Ethology Research Group. "Thus, we suggest that using our reliable, easily applicable methodology in different labs may form the basis of an international, multi-site collection of similar samples, allowing for generalizable scientific conclusions."

More information: Vivien Reicher et al, Non-invasive sleep EEG measurement in hand raised wolves, *Scientific Reports* (2022). [DOI: 10.1038/s41598-022-13643-x](https://doi.org/10.1038/s41598-022-13643-x)

Provided by Eötvös Loránd University

Citation: Do wolves sleep like dogs? (2022, July 11) retrieved 26 April 2024 from <https://phys.org/news/2022-07-wolves-dogs.html>

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