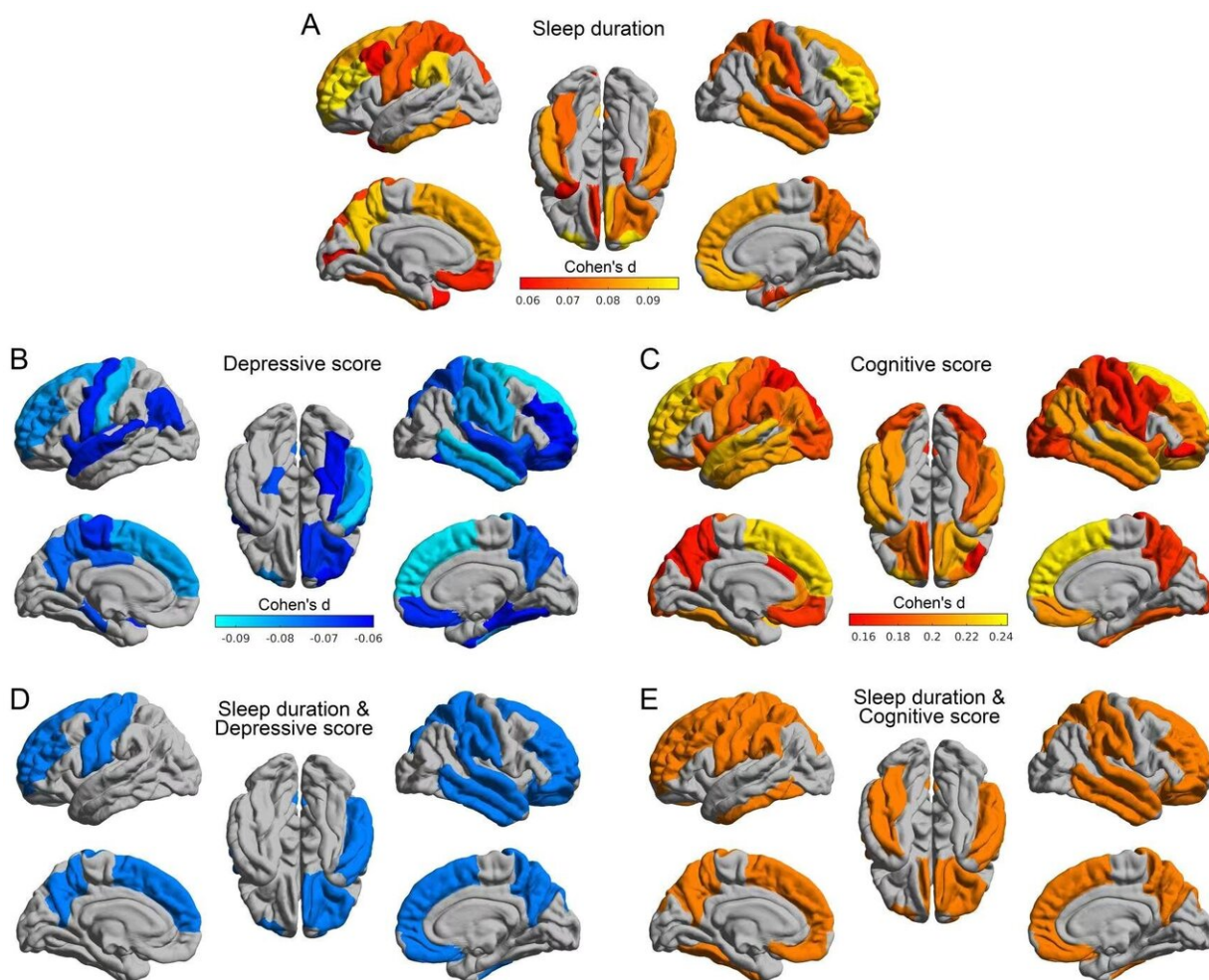


Children's mental health is affected by sleep duration

February 4 2020, by Alice Scott



Credit: University of Warwick

Depression, anxiety, impulsive behavior and poor cognitive performance in children is effected by the amount of sleep they have researchers from the University of Warwick have found.

Sleep states are active processes that support reorganization of brain circuitry. This makes sleep especially important for children, whose brains are developing and reorganizing rapidly.

In the paper "Sleep duration, [brain structure](#), and psychiatric and [cognitive problems](#) in children," published in the journal *Molecular Psychiatry*, 11,000 children aged 9-11 from the Adolescent Brain Cognitive Development dataset had the relationship between sleep duration and brain structure examined by researchers Professor Jianfeng Feng, Professor Edmund Rolls, Dr. Wei Cheng and colleagues from the University of Warwick's Department of Computer Science and Fudan University.

Measures of depression, anxiety, impulsive behavior and poor cognitive performance in the children were associated with shorter sleep duration. Moreover, the depressive problems were associated with short sleep duration one year later. The results were found based upon association studies, not causal studies.

Lower brain volume of brain areas involved the [orbitofrontal cortex](#), prefrontal and temporal cortex, precuneus, and supramarginal gyrus was found to be associated with the shorter sleep duration by using big data analysis approach.

Professor Jianfeng Feng, from the University of Warwick's Department of Computer Science comments:

"The recommended [amount of sleep](#) for children six to 12 years of age is nine to 12 hours. However, sleep disturbances are common among

children and adolescents around the world due to the increasing demand on their time from school, increased screen time use, and sports and social activities.

A previous study showed that about 60% of adolescents in the United States receive less than eight hours of sleep on school nights.

"Our findings showed that the behavior problems total score for children with less than seven hours sleep was 53% higher on average and the cognitive total score was 7.8% lower on average than for children with 9-11 hours of sleep. It highlights the importance of enough sleep in both cognition and [mental health](#) in children.

"We have to stress here that the results were found based upon association studies, but not causal studies."

Professor Edmund Rolls from the University of Warwick's Department of Computer Science also commented:

"These are important associations that have been identified between sleep duration in children, brain structure, and cognitive and mental health measures, but further research is needed to discover the underlying reasons for these relationships."

More information: Wei Cheng et al. Sleep duration, brain structure, and psychiatric and cognitive problems in children, *Molecular Psychiatry* (2020). [DOI: 10.1038/s41380-020-0663-2](https://doi.org/10.1038/s41380-020-0663-2)

Provided by University of Warwick

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