

Public release date: 27-Apr-2009

Contact: Dr. Juulia Paavonen

juulia.paavonen@helsinki.fi

358-206-107-287

[University of Helsinki](#)

Inadequate sleep leads to behavioral problems

A recent Finnish study suggests that children's short sleep duration even without sleeping difficulties increases the risk for behavioral symptoms of ADHD.

During the recent decades, sleep duration has decreased in many countries; in the United States a third of children are estimated to suffer from inadequate sleep. It has been hypothesised that sleep deprivation may manifest in children as behavioral symptoms rather than as tiredness, but only few studies have investigated this hypothesis.

The researchers at the University of Helsinki and National Institute of Health and Welfare, Finland, examined whether decreased sleep leads to behavioral problems similar to those exhibited by children with attention-deficit/hyperactivity disorder (ADHD).

280 healthy children (146 girls and 134 boys) participated in the study. The researchers tracked the children's sleep using parental reporting as well as actigraphs, or devices worn on the wrist to monitor sleep.

The children whose average sleep duration as measured by actigraphs was shorter than 7.7 hours had a higher hyperactivity and impulsivity score and a higher ADHD total score, but similar inattention score than those sleeping for a longer time. In multivariate statistical models, short sleep duration remained a statistically significant predictor of hyperactivity and impulsivity, and sleeping difficulties were associated with hyperactivity, impulsivity and inattention. There were no significant interactions between short sleep and sleeping difficulties.

"We were able to show that short sleep duration and sleeping difficulties are related to behavioral symptoms of ADHD, and we also showed that short sleep, per se, increases behavioral symptoms, regardless of the presence of sleeping difficulties", says researcher Juulia Paavonen, MD, PhD.

"The findings suggest that maintaining adequate sleep schedules among children is likely to be important in preventing behavioral symptoms. However, even though inadequate sleep seems to owe potential to impair behaviour and performance, intervention studies are needed to confirm the causality," Paavonen continues.

###
