

# Study links melatonin secretion to ADHD symptoms in children

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A study conducted by researchers from Hamamatsu University School of Medicine, in collaboration with several international institutions, has unveiled a critical link between melatonin secretion and the severity of ADHD (attention deficit hyperactivity disorder) symptoms in children.

The findings, [published](#) in *Psychiatry Research Communications*, suggest that genetic variations affecting melatonin production may play a significant role in the development and exacerbation of ADHD symptoms.

ADHD is a prevalent neurodevelopmental disorder affecting approximately 5% of children worldwide. It is characterized by persistent patterns of inattention, hyperactivity, and impulsivity. While it has long been known that children with ADHD often struggle with [sleep disorders](#), the precise relationship between sleep and ADHD symptoms has remained unclear—until now.

The study revealed that children with genetic traits that reduce melatonin secretion at night exhibited more severe ADHD symptoms at age 8 to 9 years using data from the Hamamatsu Birth Cohort for Mothers and Children (HBC Study), which tracks the development of children from birth.

"Our findings indicate that disruptions in melatonin secretion may contribute to the difficulties children with ADHD face in maintaining regular sleep patterns," said Associate Professor Nagahide Takahashi, the lead author and a clinical expert on ADHD. "This could potentially worsen their ADHD symptoms, creating a [vicious cycle](#) that can be challenging to break."

The implications of this research are significant. It underscores the importance of good sleep hygiene for children diagnosed with ADHD, such as establishing consistent sleep routines, reducing [screen time](#) before bed, and increasing exposure to [natural light](#) during the day.

Moreover, the study suggests that melatonin supplementation could be a beneficial intervention for managing ADHD symptoms, although further research is needed to confirm its long-term efficacy.

This study marks a significant step forward in understanding the complex interplay between sleep and neurodevelopmental disorders. As researchers continue to explore these connections, parents and health care providers may find new strategies for helping [children](#) with ADHD manage their symptoms more effectively.

**More information:** Nagahide Takahashi et al, Association between genetic risk of melatonin secretion and attention deficit hyperactivity disorder, *Psychiatry Research Communications* (2024). [DOI: 10.1016/j.psycom.2024.100188](#)

Provided by Osaka University

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