

Press Release

New Study Links Melatonin Secretion to ADHD Symptoms in Children

Hamamatsu, Japan – A groundbreaking 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 of 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 healthcare providers may find new strategies for helping children with ADHD manage their symptoms more effectively.

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Summary

A study highlights that children with ADHD frequently experience sleep problems, potentially linked to lower levels of melatonin, a hormone crucial for regulating sleep. Genetic variations that reduce melatonin levels at night are associated with more severe ADHD symptoms in children aged 8-9. The research suggests that improving sleep habits, such as increasing morning sunlight exposure and reducing evening screen time, could help manage ADHD symptoms. This underscores the importance of addressing sleep issues as a possible way to alleviate ADHD symptoms in children.

Highlights of the Study

- Children with ADHD (attention deficit hyperactivity disorder) often have sleep problems.
- Lower levels of the sleep hormone melatonin may be linked to more severe ADHD symptoms.
- Improving sleep habits could help manage ADHD symptoms.

Key Findings

- Melatonin, a hormone that helps regulate sleep, is often lower in children with ADHD.
- Genetic changes that lead to lower melatonin levels at night are associated with more severe ADHD symptoms in children aged 8-9.
- Improving sleep habits, like getting more morning sunlight and reducing evening screen time, could help manage ADHD symptoms.

What is Melatonin?

Melatonin is a hormone produced by the pineal gland in the brain. It helps control the sleep-wake cycle, making you feel sleepy at night. Light exposure reduces melatonin levels, which is why it's harder to sleep when exposed to light at night.

ADHD and Sleep

ADHD is a condition that affects attention focusing, self-control, and other behaviors. About 5% of children have ADHD. Many children with ADHD also have trouble sleeping, but it wasn't clear if the sleep problems caused the ADHD symptoms or if the ADHD caused the sleep problems.

The Study

After confirming that melatonin secretion is associated with ADHD diagnosis, the research team looked at genetic data from children in the HBC Study. They found that children with genetic traits that change melatonin levels at night had more severe ADHD symptoms. This suggests that low melatonin levels might play a role in the emergence of ADHD symptoms and diagnosis.

Implications

This study highlights the importance of good sleep habits for children with ADHD. Simple changes like getting morning sunlight, reducing screen time before bed, and possibly using melatonin supplements could help improve sleep and reduce ADHD symptoms.

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