

## Autism, Sleep and Melatonin: Future Ahead

Tanay Maiti<sup>1\*</sup> and Farzana Ali<sup>2</sup>

<sup>1</sup>Consultant Psychiatrist and Mental Health Expert, Assistant Professor, Department of Psychiatry, JIMSH, Kolkata, India

<sup>2</sup>Phase B Resident, Department of Pediatric Surgery, Mymensingh Medical College, Bangladesh

**\*Corresponding Author:** Tanay Maiti, Consultant Psychiatrist and Mental Health Expert, Assistant Professor, Department of Psychiatry, JIMSH, Kolkata, India.

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### Abstract

Sleep is a necessary physiology which we all need regularly and adequately. Sleep problems and disorders are common in childhood population, and even more in children with Autism Spectrum Disorder (ASD), leading to significant impairment both in the children's and their caregivers' lives. Melatonin has been found as an important remedy for adults with various sleep disorders and its similar role in ASD children is promising too. The support for melatonin's long term efficacy with minimal side effects is further promising for large scale application in the mentioned population.

**Keywords:** Autism Spectrum Disorder (ASD); Sleep; Melatonin

### Introduction

Sleep is not just mere absence of wakefulness. It's a very much active and metabolically distinct stage, extremely important for one's health and holistic well being. We all need to sleep, both properly and adequately; to take rest and for a better productive life. Sleep related problems and sleep disorders are prevalent both in general population and children with developmental disorders, specially among children with Autism Spectrum Disorders. Though the researchers have found variable prevalence of sleep disorders among children with ASD, the rate is often high and up to 80% according to some researchers [1-4].

### Sleep and importance of sleep

Sleep, other than a necessary physiological process, has been seen effective and needed to maintain a proper mental health, work life balance and even for creative life. Sleep deprivation has been found to hamper our cognitive process; specially attention, working memory and even up to long term memory and decision making. Chronic sleep deprivation or disturbance of sleep has also been observed in many psychiatric diagnoses and often been identified as forerunners of impending psychiatric problems [5].

### Sleep in children with ASD

Sleep problems are common in children with autism, along with co morbid sleep disorders. Recent meta-analysis mentioned up to 13% prevalence of sleep disorders in children with Autism Spectrum Disorder which is nearly four times than the general population. Other than independent distress due to poor sleep and its quality, it further escalates the other psychological issues and behavioral problems in this population [6].

### Melatonin in ASD

Melatonin has been researched extensively in recent times and has shown promising result in this area. Recent researches have persistently shown positive outcome of melatonin application in sleep related issues among autism spectrum disorder children and adolescents. Also, very importantly, the long term usage and safety of it has also been claimed by some of the researchers, which is very important for this particular population, as intervention needed is often lengthy, and the population is medically sensitive with high chances of side effects as well. Well toleration of melatonin doses, up to 10 mg a day is definitely a promising finding by the researchers without any major side effects, even after nearly a year's intake. It is noteworthy to mention here, that melatonin has shown promising results in some other childhood neurodevelopmental disorders like ADHD, which has a very high co morbid incidence rate in children with ASD [7,8].

Also, as expected, the improved sleep quality has shown to be efficacious to improve behavioral problems in these children, which has certainly been reflected on the quality of life among the caregivers [9].

### Conclusion

The deranged and disturbed sleep not only impairs the health of ASD children, but also significantly affects the lives and quality of lives of the caregivers, often leading to associated psychological morbidity in them too. Understanding the sleep pattern in children with ASD and addressing them appropriately both pharmacologically and non-pharmacologically might help the family as a whole. Melatonin can be a good solution to this problem however more research is needed with different ethnic origin children with variable presentation and different co morbid condition.

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