

## Title: Sleep neurochemical regulation in Autism Spectrum Disorders

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**Objective:** Autism spectrum disorder (ASD) is characterized by changes in neurological functions that may affect the physiological neurodevelopment, leading to deficits in both socializing and non-verbal behavior. ASD is diagnosed before the age of three. There are a number of neuropsychiatric signs, such as sleeping disorders, which could be associated with ASD. 76 children ASD children ranging between 2 and 11 years (mean age  $5.7 \pm 2.3$  years) were recruited for this study. The control group consisted of 105 children with normal development, ranging between 3 and 10 years (mean age  $5.9 \pm 2.2$  years). The diagnosis of ASD was established by ADOS-2 evaluation, and the of sleep habits assessment. Sleep habits were assessed

**Results:** The two groups did not show any difference for mean age ( $p = 0.633$ ) and sex distribution ( $p = 0.483$ ). The ASD group showed a higher rate of sleep disorders in all categories explored by the SDSC tests. The plasmatic leptin levels were higher in ASD group ( $p < 0.001$ ).

**Discussion:** Sleep alterations in ASD subjects were observed in all age groups. No differences in sleep habits were found to be directly correlated with the severity of social impairment and communication. However, various levels of neurodevelopment resulted in significantly different sleeping patterns. ASD is an essential risk factor for sleep disorders. Our results might shed some light on the pathophysiology involved in this abnormal sleeping pattern, and might offer future treatment options.

### Biography

Professor Marco Carotenuto completed his whole study course (undergraduate, specialization and PhD) at the age of 33 at University of Campania "Luigi Vanvitelli" in Italy, where he still works, and post-specialization studies at University of Oxford in the UK. He is the director of Child Neuropsychiatry Unit and the related graduate school. Currently he has published 159 scientific papers in international indexed journals with an h-index equal to 53. His fields of research are autism, sleep regulation in neurodevelopmental disorders and pediatric epilepsies. Finally, he is Associate Editors of numerous important scientific journals.