

Title: The crucial role of the cerebellum in autism spectrum disorder: Neuroimaging, neurobiological, and anatomical insights

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Abstract: Background and Aims Autism spectrum disorder (ASD) is a complex neurodevelopmental condition characterized by a wide range of symptoms and challenges. While ASD is primarily associated with atypical social and communicative behaviors, increasing research has pointed towards the involvement of various brain regions, including the cerebellum. This review article aims to provide a comprehensive overview of the role of cerebellar lobules in ASD, highlighting recent findings and potential therapeutic implications.

Methods Using published articles found in PubMed, Scopus, and Google Scholar, we extracted pertinent data to complete this review work. We have searched for terms including anatomical insights, neuroimaging, neurobiological, and autism spectrum disorder.

Results The intricate relationship between the cerebellum and other brain regions linked to ASD has been highlighted by neurobiological research, which has shown abnormalities in neurotransmitter systems and cerebellar circuitry. The relevance of the cerebellum in the pathophysiology of ASD has been further highlighted by anatomical studies that have revealed evidence of cerebellar abnormalities, including changes in volume, morphology, and connectivity.

Conclusion Thorough knowledge of the cerebellum's function in ASD may lead to new understandings of the underlying mechanisms of the condition and make it easier to create interventions and treatments that are more specifically targeted at treating cerebellar dysfunction in ASD patients.

Keywords: ASD, behavioral disease, brain function, cerebellar dysfunction, cerebellum

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC11222293/#:~:text=The%20cerebellum%20is%20rich%20in,has%20been%20implicated%20in%20ASD.>

[doi: 10.1002/hsr2.2233](https://doi.org/10.1002/hsr2.2233)