

## Pathophysiology and Diagnosis of Autism Spectrum Disorder

Jim Misawa\*

Department of Health Policy and Technology Assessment, National Institute of Public Health, Minami, Wako, Saitama, Japan

### DESCRIPTION

The autism spectrum is a category of neurological diseases that are mainly characterized by obstacles in social interaction and communication, repetitive activities, strong interests, and unusual reactions to sensory input.

It is commonly termed as autism or, in the context of a professional diagnosis, Autism Spectrum Disorder (ASD). ASD is listed as a single disorder among the most recent versions of the 2 significant English-language diagnostic manuals, its Diagnostic and Statistical Manual of Mental Disorders and also the International Classification of Diseases. Historically, the autism spectrum was divided into sub-categories but some issues it remained regarding as the reliability of these divisions. Although the etiology of autism is not completely understood, it is believed that abnormal brain development from birth is a contributory cause. Since there is no treatment available for autism, interventions focus on things like teaching a non-verbal autistic how to utilize different methods of communication or by using behaviour analysis, both of which are extremely contentious.

The symptoms of autism are carried out by changes in various brain systems brought on by the maturation. The development of autism is unclear. Its mechanism can be divided into two categories: The neuropsychological interconnections between brain structures and behavior's, and the pathophysiology of the brain processes and structures linked to autism. Multiple pathophysiology seem to be involved in the behaviors. Regardless of the unique genetic variation or mutation causing autism in a particular person, the following molecular and cellular abnormalities have been found in ASD brains. Limbic system composed of densely packed neurons. Because the limbic system in the human brain acts as the primary center for both emotions and memory, this observation may be helpful to explain social dysfunction in ASD.

The cerebellum's Purkinje neurons are fewer and smaller. Recent studies have pointed to the cerebellum's participation in linguistic and emotional processing. Under the term of the "social brain," a variety of distinct brain areas and networks between regions that are engaged in interacting with other people has been examined. As of 2012, there is common consensus that issues with interconnection between various regions and networks, rather than issues are more likely to be related to autism spectrum disorders.

### Temporal lobe

The temporal lobe's activities in receptive language, social cognition, joint attention, action observation, and empathy are linked to many of the impairments seen in people with ASDs. The superior temporal sulcus and the fusiform face region, which may promote facial processing, are also located in the temporal lobe. The social deficiencies that distinguish autism have been connected to superior temporal sulcus malfunction. One research reveals that when people with so-called high-functioning autism viewed photographs of faces, there was less activity in the fusiform face region compared to usually developing people.

### Diagnosis

A group of specialists from various fields (such as child psychiatrists, child neurologists, and psychologists) should ultimately make the diagnosis of ASD and only after the kid has been seen in a wide range of situations. ASD can occasionally be recognized at the age of 14 months, but the diagnosis regulates over the first three years of life. For example, a one-year-old who meets the diagnostic criteria for ASD is less likely than a three-year-old to do so a few years later.

**Correspondence to:** Jim Misawa, Department of Health Policy and Technology Assessment, National Institute of Public Health, Minami, Wako, Saitama, Japan, E-mail: Misawa@gmail.com

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