

# The thousand faces of autism spectrum disorder

Cite this article as: Posar A, Visconti P. The thousand faces of autism spectrum disorder. Turk Pediatri Ars 2018; 53(4): 273-74.

Dear editor,

Autism Spectrum Disorder (ASD) is a lifelong clinical condition that severely impacts on the life of affected individuals and their families, due to the impairment of social interaction and communication, as well as to the presence of repetitive interests and activities (1). According to the most recent epidemiologic studies, ASD has reached the prevalence of 16.8 per 1000 children aged 8 years (2); the dramatic increase in cases diagnosed during the last decades is only partly attributable to a better knowledge of this condition (3). A real increase in affected individuals is unquestionable and urgently requires answers because it leads us to hypothesize that in the etiopathogenesis of the disorder, important roles are played by a genetic predisposition (strongly supported by literature data), and by environmental factors that may be positively influenced through an effective prevention action. It is still a matter of study as to exactly what these environmental factors are, but it is possible that a large number of heterogeneous pollutants are involved (4).

The Diagnostic and Statistical Manual of Mental Disorders 5<sup>th</sup> edition (DSM-5) subdivides patients with ASD into 3 groups of increasing severity (from 1 to 3), depending on the level of required support. Unfortunately, this subdivision appears to be too crude to adequately characterize these individuals, both for clinical purposes and for research purposes. It is no coincidence that most health professionals who deal with autism usually use in spoken and written language the expression “Autism Spectrum Disorders” in the plural and not in the singular as proposed by the DSM-5 (see the title of the respective chapter). In fact, they perceive these conditions as very heterogeneous entities, with differences among patients that are quantitative and qualitative.

There are many variables that can affect the clinical picture of a person with ASD. A first element, perhaps the most important, that differentiates these patients among them is intellectual functioning, which in many cases is compatible with an intellectual disability that can also be of profound degree, whereas in other cases it can also be above average, sometimes allowing the achievement of positions of responsibility in the

**Table 1. Proposal of a tool to describe patients with Autism Spectrum Disorder**

Autism severity (CARS2)	Intellectual disability (non-verbal IQ $\leq$ 70) (yes/no)	Minimally verbal (no or single-word speech) (yes/no)	Psychiatric comorbidity (yes/no)	Neurologic comorbidity (yes/no)	Medical comorbidity (yes/no)
Mild-to-moderate					
Severe					

Footnotes: First, choose which row has to be compiled for each patient, based on the autism severity assessed using the total score of CARS2 (Childhood Autism Rating Scale, Second Edition): mild-to-moderate or severe. Then, write “yes” or “no” for each of the other five variables specified in the column headings, depending on whether it is present or absent. Please note that, concerning the column titled “Minimally verbal,” “no” means that the patient is able to pronounce at least simple sentences, till having fluent speech even if atypical.

world of work thanks to the development of particular sectorial skills. Another extremely important variable is the presence of verbal language. If it is missing, the affected individual is, among other things, at risk of presenting with “problem behaviors” (see for example reactions of marked agitation and auto- or hetero-aggressiveness), triggered by the impossibility of communicating with others. However, the great clinical heterogeneity of these cases may be influenced also by the frequent presence of a wide range of other possible comorbidities: psychiatric (e.g.: attention-deficit/hyperactivity disorder - ADHD, anxiety disorder), neurologic (e.g.: epilepsy, sleep disorders), and medical (e.g.: gastrointestinal disorders, genetic and metabolic disorders) (5), which can more or less severely affect the patient's clinical picture. Finally, we cannot forget the importance of a timely and effective behavioral intervention, which can provide the individual with greater chances of recovery, also significantly modifying the evolution of the clinical picture. All this accounts for the great clinical heterogeneity of ASD, and suggests a more effective subdivision of these patients. Table 1 represents our proposal for a simple tool to describe patients with ASD, in order to favor a subdivision into groups that are as homogeneous as possible. Obviously, any criticisms and suggestions are welcome.

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**Acknowledgment:** The authors would like to thank Cecilia Baroncini for linguistic support.

**Conflict of Interest:** The authors have no conflicts of interest to declare.

**Financial Disclosure:** The authors declared that this study has received no financial support.

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**Received:** 24.05.2018

**Accepted:** 13.07.2018

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DOI: 10.5152/TurkPediatriArs.2018.18066

