



# Autism symptomatology and intellectual functioning: what happens from childhood to adulthood?

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What does the future hold for my child? This question is often a source of worry for many parents of autistic children. Though autism is a neurodevelopmental condition present throughout one's life, autism symptoms such as social difficulties, as well as cognitive abilities and adaptive functioning can change over time with individual variation. Until recently, data from studies looking at the evolution of young autistic children into adulthood was very heterogenous. There was also no consensus in the literature on factors influencing developmental trajectories in autism, other than language and IQ, both of which were considered favourable to development. Few predictive factors had been identified, and family and social factors were rarely considered as possible predictors of child development.

In order to address these gaps in the scientific literature, Simonoff and her team documented the evolution from childhood to adulthood of 158 people having received an early diagnosis of autism, Asperger's Syndrome, Pervasive Developmental Disorder-Not Otherwise Specified, or atypical autism according to ICD-10<sup>1</sup>. This is considered a first in the field, where no cohort this large had ever been studied for this long. Participants were evaluated at ages 12, 16 and 23, and completed a variety of measures. Intellectual functioning was assessed with the Wechsler IQ scales and autism symptoms were assessed with the Social Responsiveness Scale (SRS). The research team also explored the role of different predictive variables, including 1) childhood characteristics (autism symptoms

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<sup>1</sup> DSM equivalent used in Europe



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**Original article:**

Simonoff, E., Kent, R., Stringer, D., Lord, C., Briskman, J., Lukito, S., ... & Baird, G. (2019). Trajectories in symptoms of autism and cognitive ability in autism from childhood to adult life: Findings from a longitudinal epidemiological cohort. *Journal of the American Academy of Child & Adolescent Psychiatry*.

in infancy, language development, presence of language regression); 2) parent characteristics (mother's affective symptoms, parent education) and 3) other life characteristics (socio-economic status of their neighbourhood, type of school attended, etc.).

Results showed that when the group was considered as a whole, **mean IQ increased** between the ages of 12 and 23 years old for autistic individuals, whilst no such variation is expected in the general population since IQ scales are normed by age. The authors offered two hypotheses to explain this IQ increase: 1) cognitive development may be continuous throughout adolescence/young adulthood in autistic people, contrary to typically developing individuals where we observe stable IQ, and 2) autistic children may be more able to participate in formal assessments as they get older, notably for tasks evaluating language, allowing them to showcase their full capacities. Autistic symptoms remained stable through time when considering the group as a whole.

In terms of the role of certain variables, such as childhood, parental and life characteristics on the evolution of intellectual functioning (IQ), results showed that **lower language levels** in childhood were associated with **lower IQ** between 12 and 23 years old. Furthermore, having experienced **language regression** at a young age was associated with an **IQ increase** between 12 and 23 years old. Thus, autistic children having experienced language regression followed a different developmental trajectory than children who had not experienced language regression, and this difference persisted into adolescence and adulthood.

When researchers observed the evolution of autism symptomatology, they found that higher levels of **sociocommunicative difficulties** at a young age predicted more **autism symptoms** at age 12. Higher

levels of **sociocommunicative difficulties** and symptoms of **mental health problems** were also associated with higher levels of autism symptomatology at age 23. Although overall levels of autism symptoms remained stable over time, youths having attended a specialised school presented with increasing autistic symptoms between 12 and 23 years old, contrary to children who attended a regular school, who showed decreasing symptoms from childhood to adulthood. It is however important to note that the authors also found that children with lower IQs were more likely to attend specialised schools no matter their age. It is therefore not possible to determine whether changes in autism symptoms are best explained by the type of school attended or baseline characteristics of the child. Lastly, neither maternal mental health, parental education nor socio-economic status were associated with the trajectory of autistic symptoms or the evolution of the child's cognitive profile.

In conclusion, this study was one of the first population level studies to document different trajectories of cognitive development and autistic symptoms from childhood to adulthood. Results suggest that cognitive functioning tends to improve with age, whilst autism symptoms remain stable. The authors also demonstrated that certain factors may impact development in autistic people, such as language levels in childhood and the type of school children or adolescents attend. Although this study was limited in some ways, such as a lack of measures before age 12 or too few female participants to allow for comparisons between girls and boys, these results nonetheless demonstrate that different developmental trajectories exist across the autism spectrum, influenced by both individual and environmental factors.

