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## Twice-exceptional: high intellectual potential and autism

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### What does it mean to be twice-exceptional and how common is it?

Twice-exceptionality is a phenomenon that is attracting increasing attention from scientists and the general public. It is defined by the presence of high intellectual potential (HIP), also called intellectual giftedness, and a concomitant condition such as a learning disability (e.g., dyslexia) or autism spectrum disorder (ASD).

In the scientific literature, high intellectual potential is characterized by an individual's exceptional abilities in terms of cognitive functioning. However, researchers do not agree on the exact definition of high intellectual potential and on how to measure it. Depending on the definition used, people with high intellectual potential represent between

2.5 and 10% of the general population. Approximately 3% of autistic people are considered to have a high intellectual potential<sup>1</sup>. Therefore, the HIP-Autism twice-exceptionality is comprised of two cognitive developmental conditions that are extremely rare, hence its name.

### Characteristics of youth with twice-exceptionality

Several studies show that autistic individuals with high intellectual potential experience unique challenges. In 2019, a research team conducted a study in the United States to determine whether autistic children with high intellectual potential had a different educational trajectory than other autistic children<sup>2</sup>. This study shows that children with a HIP-Autism twice-exceptionality perform better academically upon entering school and



that their academic performance improves over time, which is not the case for other autistic children. In addition, while autistic children benefit from educational support services, professional services (e.g., speech therapy, occupational therapy) and technological assistance, twice-exceptional children particularly benefit from mental health services and the use of medication for any associated difficulties (e.g., if significant anxiety).

Adolescence would also be an important time for autistic individuals with HIP. A recent study examined **adaptive behaviors** in this population<sup>3</sup>. The study suggests that from childhood to adolescence, the gap between neurotypical and autistic youth with high intellectual potential widens in terms of adaptive behaviors. Despite their high intellectual potential, these young people often present certain weaknesses on the adaptive level, which are more salient in adolescence. These findings are a reminder that most autistic people, including those with HIP, have difficulties related to adaptive behaviours, and highlight the importance of offering adequate support to young autistic people.

### Challenges related to the identification of twice-exceptionality

The identification of twice-exceptionality for HIP-Autism poses several challenges for health care and school professionals. Indeed, many students are not adequately identified and do not receive services adapted to their twice-exceptionality. The manifestations of high intellectual potential and autism may overlap. Indeed, many people with HIP report difficulties in making friends, intense interest in certain subjects, asynchronous development (i.e., some areas of development are further ahead than others), and hypersensitivity. In contrast, many of the social skill challenges of individuals with HIP are resolved when their environment is appropriate (e.g., when children are included in a specialized classroom).

Moreover, camouflage may be present in individuals with high intellectual potential, which may lead to a later diagnosis of autism. Camouflage, previously studied in women with autism, refers to the use of compensatory mechanisms to offset the difficulties they experience

### Adaptive behaviours

Adaptive behaviours are a set of behaviours that allow for daily functioning and social participation. They include communication skills, daily living tasks and socialization.



#### Main References:

- <sup>1</sup> Charman, T., Pickles, A., Simonoff, E., Chandler, S., Loucas, T., & Baird, G. (2011). IQ in children with autism spectrum disorders: data from the Special Needs and Autism Project (SNAP). *Psychological Medicine*, 41(3), 619-627. <https://doi.org/10.1017/S0033291710000991>
- <sup>2</sup> Cain, M. K., Kaboski, J. R., & Gilger, J. W. (2019). Profiles and academic trajectories of cognitively gifted children with Autism Spectrum Disorder. *Autism*, 23(7), 1663-1674. <https://doi.org/10.1177/1362361318804019>
- <sup>3</sup> Dempsey, J., Ahmed, K., Simon, A. R., Hayutin, L. G., Monteiro, S., & Dempsey, A. G. (2021). Adaptive behavior profiles of intellectually gifted children with Autism Spectrum Disorder. *Journal of Developmental & Behavioral Pediatrics*, 42(5), 374-379. <https://doi.org/10.1097/DBP.0000000000000907>

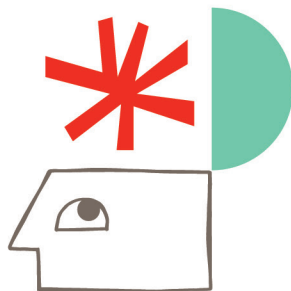
in relation to autism. For example, autistic individuals may camouflage their difficulties in detecting more subtle emotions or in understanding intentions or undertones, which allows them to socialize with their peers. Thus, a differential diagnosis is essential and can only be made by health professionals. In Quebec, only psychologists, neuropsychologists and specialized physicians can identify this twice-exceptionality.

It is important to note that twice-exceptional people benefit from interventions adapted to their two particularities. In addition, interventions related to autism or giftedness are quite distinct. Thus, diagnosing an HIP when the child is in fact autistic or detecting a twice-exceptionality when the child does not have an HIP can be detrimental to the child's development. Specifically, it could prevent them from receiving adequate services if their special needs are not correctly identified.

#### In conclusion

Although intelligence has been studied for a long time in the autistic population, we know relatively little about the experiences of autistic people with high intellectual potential. Most studies of twice-exceptionality have been conducted with children and adolescents in a school setting and very few have been conducted with adults. The variable quality of the studies that have been conducted and the wide variation in the way high intellectual potential is measured require some caution in interpreting their results.

In summary, twice-exceptionality is very rare, and a comprehensive assessment of cognitive functioning is required to identify it. However, despite its rarity, this identification is important because children with twice-exceptionality benefit greatly from services tailored to both their high intellectual potential and autism.



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