

# Restricted and repetitive behaviours in autism:

## How do they change?

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One of the central features of autism is the presence of restricted and repetitive behaviours (RRB). This symptom domain encompasses a multitude of very distinct behaviours, including stereotyped movements (e.g., flapping), language stereotypies (e.g., echolalia), a preference for routines and intense interests. Despite the prevalence of these behaviors, their role in the development or evolution over the life span of autistic individuals is still poorly understood.

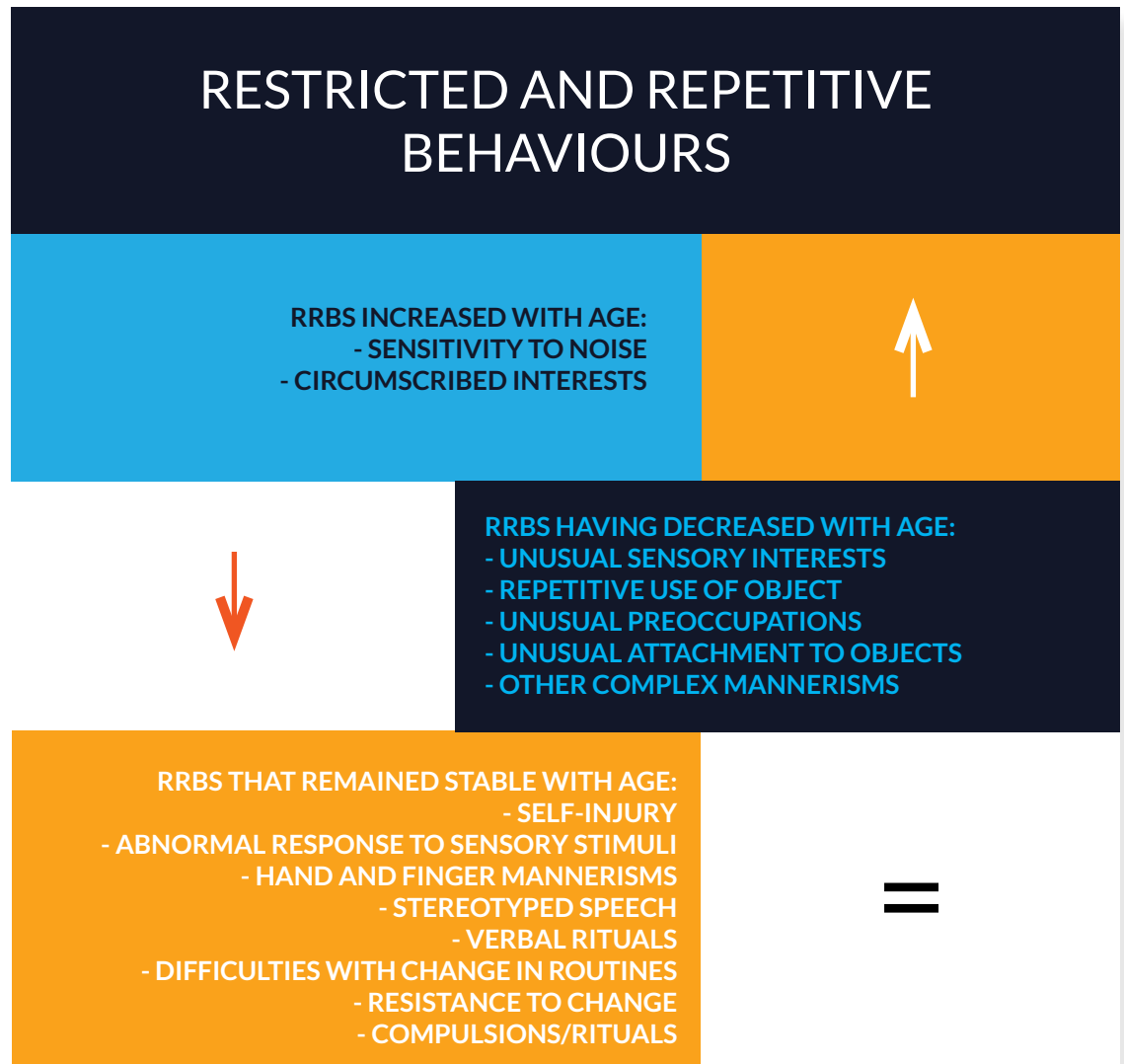
Different approaches have been used to study RRBs. Some studies choose to combine all RRBs together or group them into subcategories, whereas few studies consider each RRB individually. Using the combined approach, researchers have shown an increase in RRBs during the preschool years, followed by a decrease during school age. In addition, these studies have shown a negative relationship between RRBs and adaptive,

intellectual, and language functioning, i.e., the more RRBs, the less advanced the other areas of development. However, when RRBs are divided into categories or studied individually, the picture is much less clear, with some categories or RRBs being positively related to the different developmental spheres while the opposite is true for others, and this is not always consistent from one study to another.

In a study published in *Molecular Autism*, Courchesne and colleagues attempted to shed light on the relationship between individual RRBs, age and non-verbal intelligence quotient (IQ). To do so, they studied changes over time in 15 RRBs included in the *Autism Diagnosis Interview-Revised* (ADI-R) clinical assessment tool. The RRBs were measured in 205 children at the age of diagnosis, then at 6, 8 and 11 years of age, and the researchers explored whether observed changes were related to the child's IQ.

The study first showed a significant relationship between RRBs and children's age. In general, RRBs tend to decrease with age.

In this study, the prevalence of RRBs was measured by the absence or presence of the behaviors, so the decrease in their prevalence with age indicates that many children no longer exhibited certain behaviors as they aged.



**The main results**

The study first showed a significant relationship between RRBs and **children's age**. In general, RRBs tend to decrease with age. However, when we look at each RRB individually, we see that this relationship depends on the RRB studied. For example, repetitive object use, the presence of complex mannerisms, unusual preoccupations, and unusual sensory interests tended to decrease with age, whereas sensitivity to noise and intense interests tended to increase. The other RRBs were not related to age.

**Nonverbal IQ** alone was not associated with any of the RRBs. In contrast, an interaction between age, non-verbal IQ and difficulty changing a routine was documented. This means that change over time for this RRB was dependent on IQ. Specifically, difficulty in changing a routine tended to increase with age only when non-verbal IQ was lower.

**Conclusion**

The results of this study demonstrate the importance of studying restricted and repetitive behaviors individually since their relationship to age or IQ, for example, differs across RRBs. Prioritizing the study of RRBs individually would therefore allow for a better understanding of how they change with age and how they relate to other aspects of autism development. In this study, the prevalence of RRBs was measured by the absence or presence of the behaviors, so the decrease in their prevalence with age indicates that many children no longer exhibited certain behaviors as they aged. Clinically, such a finding suggests that it may be unnecessary to attempt to modify certain RRBs since they will naturally decrease or disappear with age.

**Original article:**

Courchesne, V., Bedford, R., Pickles, A., Duku, E., Kerns, C., Mirenda, P., Bennett, T., Georgiades, S., Smith, I. M., Ungar, W. J., Vaillancourt, T., Zaidman-Zait, A., Zwaigenbaum, L., Szatmari, P., Elsabbagh, M., & Pathways Team. (2021). Non-verbal IQ and change in restricted and repetitive behavior throughout childhood in autism : A longitudinal study using the Autism Diagnostic Interview-Revised. *Molecular Autism*, 12(1), 57. <https://doi.org/10.1186/s13229-021-00461-7>