This study explored the behaviors leading up to (sensory precursors) and changes over time of extreme sensory patterns in children with autism spectrum disorders (ASD) compared with children with developmental delay (DD).

This was accomplished by examining home videos of these children at young ages. Participants included 10 boys and 2 girls with diagnosis of ASD or DD. Videos between birth and age 2 were coded. Data collected from these home videos was then compared to sensory pattern scores for hyproresponsiveness (a lack of response or a diminished response to a sensory stimulus, like not responding to one’s name or a diminished response to pain), hyperresponsiveness (an exaggerated response to a sensory stimulus, like an intense dislike of noise or an avoidance of touch) and sensory seeking (tends to involve a fascination with or intense craving for certain kinds of sensory input). These scores were derived from four measures (two parent report measures and two observational measures).

Sensory features are highly prevalent and often problematic in children with ASD. Extreme patterns of either hyproresponsiveness or the co-occurrence of hyproresponsiveness with hyperresponsiveness appear to differentiate children with ASD from those with DD by the time they reach school age.
This analysis revealed that precursors to sensory features emerge early in children with ASD. Despite differences in sensory patterns at preschool or school age, early features of children with ASD were more similar, providing evidence that hyporesponsiveness may be a precursor for all three extreme sensory patterns present at later ages. Sensory hyperresponsiveness was less evident during infancy.

In the DD group, however, evidence of sensory precursors was surprisingly lacking in the infant videos. In addition, children with DD who presented with extreme sensory patterns at school age did not demonstrate sensory precursors in infancy.

In ASD, hyporesponsiveness was most evident in infancy, followed by sensory repetitions (e.g., spinning, mouthing objects). Hyporesponsiveness appeared stable over time. A shift from hyporesponsiveness in infancy to sensory seeking at preschool or school age was also observed. Precursors of extreme sensory features emerge early in children with ASD and appear relatively stable over time for a pattern of hyporesponsiveness but less stable for patterns of hyperresponsiveness and sensory seeking. Sensory seeking may emerge from more typical infant repetitive behavior, but intensify with age. These findings highlight the emergent nature of sensory features that may aid in early identification and intervention.

This study provides evidence of the early-emerging nature and individual differences in the development of sensory features over time. These findings suggest that practitioners need to be sensitive to a pattern of sensory hyporesponsiveness in infancy as a potential behavioral precursor of more extreme patterns in children with ASD later in development.


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