# Adding sensory integration to autism assessments may yield more individualized treatment

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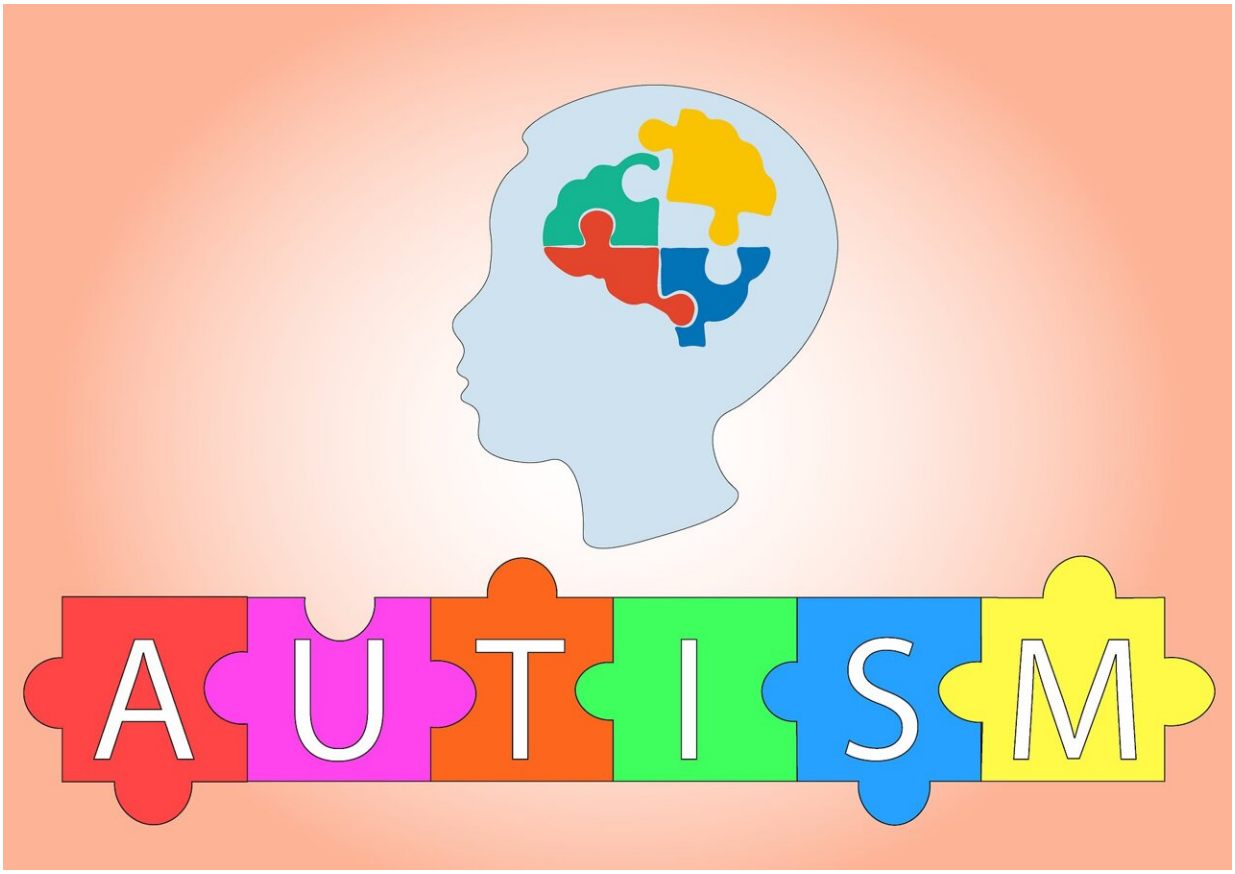


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People with autism are often portrayed in popular media as experiencing

difficulty processing highly stimulating or overly loud environments. While this is certainly true for many, there can be a wide diversity in the ways people comprehend the information they perceive from all senses.

New research from Thomas Jefferson University, in collaboration with Einstein Medical Center, shows that adding assessments focused on sensory integration into the regular autism assessment process can yield new information for patients and their care teams to help guide therapeutic activities.

"Current criteria and diagnostic tests for autism often consider 'reactivity,' or feeling overstimulated or overwhelmed by loud or bustling environments," says senior author and occupational therapist, Roseann Schaaf, Ph.D., director of the Jefferson Autism Center of Excellence.

"It's great that sensory features are now part of the criteria, but overstimulation or reactivity, as we call it, is just one aspect of the broader category of sensory integration functions. The results of our study show that we can fine-tune sensory assessment to guide therapy that can help people with autism process and understand their surroundings better. That translates to helping them gain abilities they had struggled with before."

The research was published in the *Journal of Autism and Developmental Disorders*.

As part of their study, Dr. Schaaf, adjunct associate professor Dr. Zoe Mailloux, and colleagues examined a group of 93 children between the ages of 5-9 years with a confirmed autism diagnosis. The researchers assessed this group of children using standardized assessments for sensory integration developed by Dr. A. Jean Ayres.

Rather than relying only on caregiver reports, trained occupational

therapists tested a child's capacity to perceive and process various aspects of sensory experiences, including sight, sound, touch, position, balance, and the ability to integrate these perceptions into motor tasks.

This study revealed that the participants had deficits in multiple and varied categories of sensory integration that often are not recognized. Some had difficulties with perception of touch or balance and others, various aspects of motor planning or motor skills. Some had challenges in multiple areas.

The researchers also showed that these assessment findings had little overlap with current autism diagnostic tests. "This suggests to us that the Ayres Sensory Integration assessments are providing new information. They offer therapists unexplored areas to consider for improving a child's ability to function and achieve their goals," says Dr. Schaaf.

Sensory issues can take many forms, and understanding where these challenges lie can help therapists tailor effective treatment plans to overcome them. As an example, Dr. Mailloux recalled a patient she had worked with years ago.

"This young girl did not demonstrate discomfort or heightened reactivity to loud classrooms and did not over-react to touch, but she couldn't button her clothes, tie her shoes or hold a pencil to write," says Dr. Mailloux.

"Clearly, reactivity was not an issue for her. When we tested her using the Ayres Sensory Integration tests, we found that she had substantial deficits in her perception of touch. To her, very different objects such as a cotton ball and a metal car felt the same to her. Knowing that, we could work with her to improve tactile discrimination so she could perceive and recognize these differences and use her touch system to guide her actions."

"The theory behind this," explains Dr. Schaaf, "is neuroplasticity or our brain's ability to change in response to experience. When children explore the world around them, putting things in their mouths, crawling, walking, they're creating maps in their brains of their surroundings and their bodies. As they grow, these maps become more detailed and specified. Occupational therapy using Ayres Sensory Integration helps fill the gaps in that brain map for children who aren't able to process what their fingers, eyes, ears, etc. are telling them."

"This study helps to justify the use of Ayres Sensory Integration as a tool for children with autism," says Dr. Schaaf. "And now we have a new set of tests, the Evaluation in Ayres Sensory Integration ( EASI), with international norms and developed for a wider age range (3—12 years) that we hope will provide better access to comprehensive assessment for children worldwide."

**More information:** Roseann C. Schaaf et al, Sensory Phenotypes in Autism: Making a Case for the Inclusion of Sensory Integration Functions, *Journal of Autism and Developmental Disorders* (2022). DOI: 10.1007/s10803-022-05763-0

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