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Autism worse than thought

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AUTISM affects the functioning of virtually the entire brain, and is not limited to the brain areas previously thought, new research has found.

It was previously believed that autism affected the areas of the brain associated with social interactions, communication behaviours and reasoning abilities and research has focused on those areas.

But the US study found that autism also affects a broad array of skills and abilities, including those involved with sensory perception, movement, and memory.

Conducted by scientists in a research network supported by the National Institutes of Health (NIH), the findings suggest that autism is a disorder in which the various parts of the brain have difficulty working together to accomplish complex tasks.

The study was conducted by researchers at the US Collaborative Program of Excellence in Autism (CPEA), a research network funded by two components of the NIH.

"These findings suggest that further understanding of autism will likely come not from the study of factors affecting one brain area or system, but from studying factors affecting many systems," the director of NICHD, Duane Alexander said.

People with autism tend to display three characteristic behaviours, which are the basis of the diagnosis of autism, the study's author, Nancy Minshew, Professor of Psychiatry and Neurology at the University of Pittsburgh School of Medicine, said.

These behaviours involve difficulty interacting socially, problems with verbal and non-verbal communications, and repetitive behaviors or narrow, obsessive interests. Traditionally, Dr. Minshew said, researchers studying autism have concentrated on these behavioral areas.

Within the last 20 years, however, researchers began studying other aspects of thinking and brain functioning in autism, discovering that people with autism have difficulty in many other areas, including balance, movement, memory, and visual perception skills.

In the current study, Dr Minshew and her colleagues administered an array of tests to a group of children with autism.

The researchers tested 56 autistic children, and compared their responses to those of 56 children who did not have autism.

The children with autism were classified as having "higher functioning autism" - an I.Q. of 80 or above, and the ability to speak, read, and write.

All of the children in the study ranged in age from 8 to 15 years. The purpose of the test array, Dr. Minshew said,

was to determine whether there were any patterns in mental functioning unique to autism.

The researchers found that, across the entire series of tests, the children with autism performed as well as - and in some instances even better than - the other children on measures of basic functioning. Uniformly, however, they had trouble with complex tasks.

The children with autism were very good at finding small objects in a cluttered visual field, on tasks like finding Waldo in the *Where's Waldo* picture books series. However, when asked to perform a complex task, like telling the difference between the faces of similar looking people, they had great difficulty.

Although their memory for the detail in a story was phenomenal, the children with autism had great difficulty comprehending the story. Many were highly proficient at spelling and had a good command of grammar, but had difficulty understanding complex figures of speech, like idioms and metaphors.

"We see this with our patients," Dr. Minshew said. "If you use an expression like 'hop to it,' a child with autism may literally hop."

Other complex tasks were also difficult for them. The children with autism either had poor handwriting, or wrote very slowly. Many had difficulty tying their shoes and with using scissors.

"These findings show that you can't compartmentalize autism under three basic areas," Dr. Minshew said. "It's much more complex than that."

"Our paper strongly suggests that autism is not primarily a disorder of social interaction, but a global disorder affecting how the brain processes the information it receives - especially when the information becomes complicated."



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