

Team finds age-related changes in how autism affects the brain

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Newly released findings from Bradley Hospital published in the *Journal of the American Academy of Child & Adolescent Psychiatry* have found that autism spectrum disorders (ASD) affect the brain activity of children and adults differently.

In the study, titled "Developmental Meta-Analysis of the Functional Neural Correlates of Autism Spectrum Disorders," Daniel Dickstein, M.D., FAAP, director of the Pediatric Mood, Imaging and Neurodevelopment Program at Bradley Hospital, found that autism-related changes in brain activity continue into adulthood.

"Our study was innovative because we used a new technique to directly compare the brain activity in [children](#) with autism versus adults with autism," said Dickstein. "We found that brain activity changes associated with autism do not just happen in childhood, and then stop. Instead, our study suggests that they continue to develop, as we found brain activity differences in children with autism compared to adults with autism. This is the first study to show that."

This new technique, a meta-analysis, which is a study that compiles pre-existing studies, provided researchers with a powerful way to look at potential differences between children and adults with autism.

Dickstein conducted the research through Bradley Hospital's PediMIND Program. Started in 2007, this program seeks to identify biological and behavioral markers—scans and tests—that will ultimately improve how

children and adolescents are diagnosed and treated for psychiatric conditions. Using special computer games and brain scans, including magnetic resonance imaging (MRI), Dickstein hopes to one day make the diagnosis and treatment of autism and other disorders more specific and more effective.

Among autism's most disabling symptoms is a disruption in social skills, so it is noteworthy that this study found significantly less [brain activity](#) in autistic children than autistic adults during social tasks, such as looking at faces. This was true in brain regions including the right hippocampus and superior temporal gyrus—two brain regions associated with memory and other functions.

Dickstein noted, "Brain changes in the hippocampus in children with autism have been found in studies using other types of brain scan, suggesting that this might be an important target for brain-based treatments, including both therapy and medication that might improve how this brain area works."

Rowland Barrett, Ph.D., chief psychologist at Bradley Hospital and chief-of-service for The Center for Autism and Developmental Disabilities was also part of the team leading the study.

"Autism spectrum disorders, including autistic disorder, Asperger's disorder, and pervasive developmental disorder not otherwise specified (PDD-NOS), are among the most common and impairing psychiatric conditions affecting children and adolescents today," said Barrett. "If we can identify the shift in the parts of the brain that [autism](#) affects as we age, then we can better target treatments for patients with ASD."

Provided by Lifespan

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