

Interventions for anxiety may help people with autism spectrum disorder

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A new study in *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging* reports that anxiety occurring in autism spectrum disorder (ASD) shares similar brain mechanisms as anxiety alone. Led by Drs. John Herrington and Robert Schultz of the Center for Autism Research, a joint research center of the Children's Hospital of Philadelphia and University of Pennsylvania, the study could be good news for treating anxiety symptoms in ASD. The findings suggest that treatments that work for anxiety disorders may also help people with anxiety and ASD.

Although [anxiety](#) frequently co-occurs with ASD, people with ASD often experience unique symptoms that aren't seen in other anxiety disorders. "This poses a fundamental question: are [anxiety symptoms](#) in ASD related to the same cognitive and neural mechanisms typically observed outside the context of ASD?" said Dr. Herrington.

To help answer this question, Dr. Herrington and colleagues used functional [magnetic resonance imaging](#) to study the brain activity of 63 children. Of the 38 who were diagnosed with ASD, 24 also had an anxiety disorder. The researchers examined the amygdala, a brain region central to both ASD and anxiety. In the experiment, the participants performed a visual task to assess social processing by observing faces that they focused on or that appeared in their periphery. People with anxiety disorders have increased amygdala activity when processing social information appearing in their periphery, which makes it difficult to tune out irrelevant information in the environment perceived as threatening.

"Using functional MRI, we observed a pattern of amygdala activation among children with ASD and a co-occurring anxiety disorder that closely resembled the pattern observed in decades of research on childhood anxiety disorders," said Dr. Herrington. Children with ASD and anxiety had an

increased amygdala response to faces in their peripheral vision, relative to participants with ASD alone or in typically developing children.

The findings suggest that the manifestation of anxiety in ASD may be related to a person's inability to disregard irrelevant social information in the environment. "The cognitive mechanistic level in individuals with neurodevelopmental disorders show processing biases towards negative and threatening information that may well serve to maintain their anxious state as they navigate the world," said Dr. Cameron Carter, Editor of *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*.

"Overall, these results suggests that the [neural mechanisms](#) of anxiety are likely to be transdiagnostic," said Dr. Herrington, referring to the similarity between patterns associated with anxiety in ASD and other forms of anxiety. He adds that this also suggests "that treatments for childhood [anxiety disorders](#) are likely to prove efficacious in the context of ASD."

More information: John D. Herrington et al. Negative Valence in Autism Spectrum Disorder: The Relationship Between Amygdala Activity, Selective Attention, and Co-occurring Anxiety, *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging* (2017). DOI: [10.1016/j.bpsc.2017.03.009](https://doi.org/10.1016/j.bpsc.2017.03.009)

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