

When You Look Me in the Eyes... My Brain Doesn't Like It

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Do you ever wonder why some kids just don't catch on to social cues as well as other kids? Have you noticed that these kids have trouble looking you in the eye when they speak to you and maybe can't read your facial expressions that well? Youths that show these signs in development may have Autism Spectrum Disorder (ASD).

Researchers at the TEND Lab at San Diego State University and the University of Michigan have made a breakthrough in brain research that may explain why youths with ASD have trouble with social interaction. Specifically, a distress center in the brain, the amygdala, activates when youths with ASD look at emotional faces.

This may mean that youths with ASD find faces distressing, and thus avoid them (e.g., not looking people in the eye) and miss out on social cues and opportunities to develop their social skills by interacting with people.

What is ASD?

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Individuals with Autism Spectrum Disorder show impairments when it comes to social communication (e.g., identifying and responding to emotional facial expressions). They also have rigid, repetitive behaviors (e.g., hand flapping).

Brain evidence shows that kids with ASD may feel distress when they have to look at faces, which could contribute to their symptoms.

In this study, the San Diego State University and University of Michigan researchers had 22 youths with ASD and 20 youths without ASD view emotional faces while in an MRI machine that took pictures of their brain activation. Researchers made sure that the participants were actually viewing the faces (instead of just looking away) by having the participants identify the gender of the face after it was displayed for only a short amount of time.

The distress kids with ASD feel, as shown in the brain, could lead the kids to avoid faces, and thus have more trouble interacting with others.

Researchers Say That Not Looking at Faces Early In Development Could Contribute to Social Impairment Symptoms in ASD

Adolescents with ASD exhibited greater activation than controls in neural structures associated with processing socio-emotional stimuli, particularly the amygdala, in response to the faces.

The amygdala is a processing center in your brain that is activated in anxiety provoking situations where one may feel distress. The amygdala is important to process emotional faces.

Past research suggested that individuals with ASD showed less amygdala activation, but these studies did not take into account the possibility that youths with ASD were just looking away from the faces (which would decrease their amygdala activation).

This study by researchers in TEND Lab at San Diego State University and University of Michigan actually made sure the participants were looking at the faces, and found **greater** amygdala activation in ASD.

The brain evidence shows that kids with ASD likely feel distress when they look at faces, which could lead to them avoiding faces. If the kids with ASD have been looking away from faces from when they were very young, they are missing out on opportunities to gain information from faces and learn how to deal with people. This could contribute to their social symptoms in ASD.

Weng, Carrasco, Swartz, Wiggins, Kurapati, Liberzon, Risi, Lord, & Monk. (2011). Neural Activation to Emotional Faces in Adolescents with Autism Spectrum Disorders. *Journal of Child Psychology & Psychiatry*, 52(3), 296-

