

Study: Overstimulation, not indifference, makes eye contact hard for people with autism

June 28 2017, by Rita Giordano, The Philadelphia Inquirer



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Avoiding direct eye contact with others is one of the most common characteristics associated with individuals with Autism Spectrum

Disorder. Many non-spectrum folks have traditionally assumed it is a sign of social or personal indifference.

Not so, says a new study published this month in the journal *Scientific Reports*.

According to the study, looking someone in the eye can result in unpleasant overstimulation of the brain for [people](#) with autism.

"The findings demonstrate that, contrary to what has been thought, the apparent lack of interpersonal interest among people with autism is not due to lack of concern," said Nouchine Hadjikhani, a study author and a Harvard associate professor of radiology. "Rather, our results show that this behavior is a way to decrease an unpleasant excessive arousal stemming from overactivation in a particular part of the brain."

In other words, when people with autism don't look others in the eye, it doesn't mean they don't care, said Hadjikhani.

"It's because it's too much for them," she said.

The results of the study may be useful for educators and others who work with people on the autism spectrum.

Hadjikhani and her fellow researchers with the Athinoula A. Martinos Center for Biomedical Imaging at Massachusetts General Hospital focused on the brain's subcortical system, which is responsible for newborn babies' natural focus on faces and is instrumental in emotional perceptions. The system can be activated by eye contact.

Using the technology of [functional magnetic resonance](#) imaging, the researchers measured differences in subcortical system activation in about two dozen people with autism and about the same number of

neurotypical people as they viewed faces freely as well as focusing on the eye region. Brain overactivation was found in the subjects with autism when they had to concentrate on the [eye region](#). This was true with various facial expressions, but particularly fearful faces.

Overall, the findings suggest an imbalance between the neurotransmitters that stimulate the brain and those that tend to calm it, according to the researchers. In people with autism, the imbalance may favor the excitatory subcortical signaling involved in face perception. That, in turn, can result in an aversion to direct eye contact.

Hadjikhani, who has studied autism for nearly two decades, said the findings can offer guidance on more effectively engaging people on the autism spectrum.

"Forcing children with autism to look into someone's eyes in behavioral therapy may create a lot of anxiety for them," Hadjikhani said.

Instead, she said, slowly and gradually getting people with autism used to eye contact may help them overcome their adverse reaction and eventually learn to handle eye contact without distress.

Hadjikhani is now seeking funding for a study that will use magnetoencephalography, eye-tracking and other behavioral tests to further explore [eye contact](#) avoidance in [autism](#).

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Citation: Study: Overstimulation, not indifference, makes eye contact hard for people with autism (2017, June 28) retrieved 4 April 2024 from <https://medicalxpress.com/news/2017-06-overstimulation-indifference-eye-contact-hard.html>

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