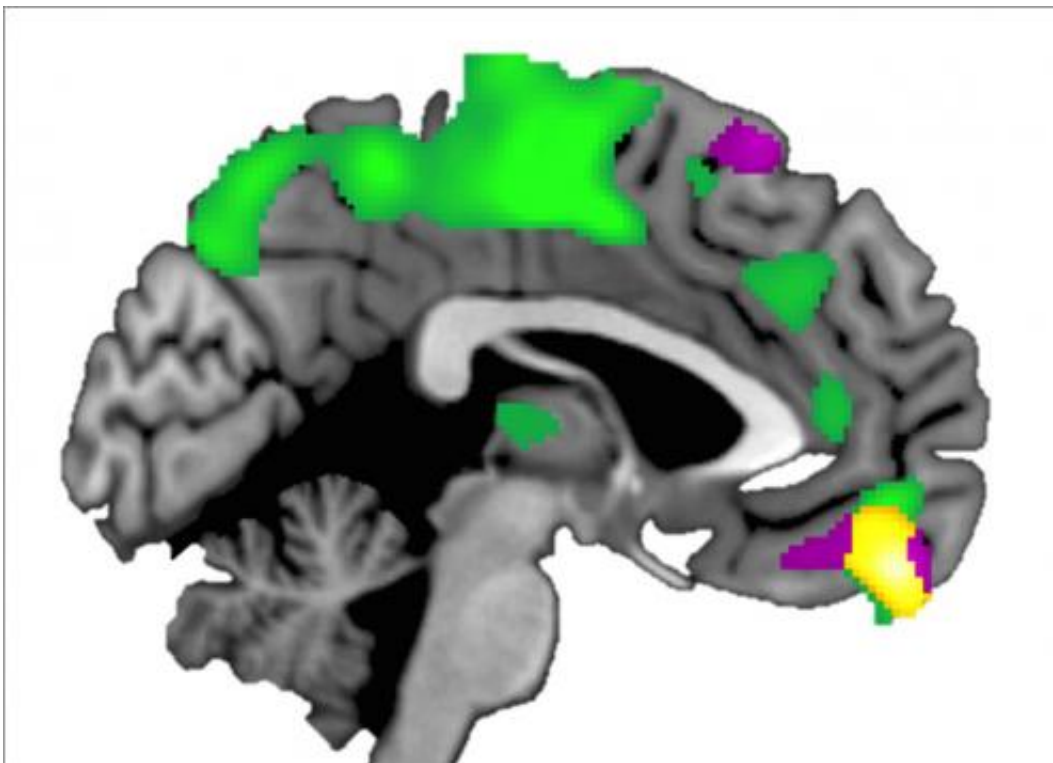


Brain structure varies depending on how trusting people are of others, study shows

March 5 2015, by Jessica Luton



The ventromedial prefrontal cortex (yellow) is larger in those that tend to be more trusting of others compared to those that tend to be less trusting of others.

A recent study from the University of Georgia shows differences in brain structure according to how trusting people are of others.

The research may have implications for future treatments of psychological conditions such as autism, said the study's lead author Brian Haas, an assistant professor in the department of psychology. Each [autism diagnosis](#) is on a spectrum and varies, but some diagnosed with the condition exhibit problems trusting other people.

"There are conditions, like autism, that are characterized by deficits in being able to process the world socially, one of which is the ability to trust people," Haas said. "Here we have converging evidence that these [brain regions](#) are important for trust; and if we can understand how these differences relate to specific social processes, then we may be able to develop more targeted treatment techniques for people who have deficits in social cognition."

Haas and his team of researchers used two measures to determine the trust levels of 82 [study participants](#).

Participants filled out a self-reported questionnaire about their tendency to trust others. They also were shown pictures of faces with neutral facial expressions and asked to evaluate how trustworthy they found each person in the picture. This gave researchers a metric, on a spectrum, of how trusting each participant was of others.

Researchers then took MRI scans of the participants' brains to determine how [brain structure](#) is associated with the tendency to be more trusting of others. What researchers found, said Haas, were differences in two areas of the [brain](#).

"The most important finding was that the grey matter volume was greater in the ventral [medial prefrontal cortex](#), which is the brain region

that serves to evaluate social rewards, in people that tended to be more trusting of others," he said.

"Another finding that we observed was for a brain region called the amygdala. The volume of this area of the brain, which codes for emotional saliency, was greater in those that were both most trusting and least [trusting](#) of others. If something is emotionally important to us, the amygdala helps us code and remember it."

Future studies may focus on how, and if, trust can be improved and whether the brain is malleable according to the type of communication someone has with another, he said.

The study was published in the journal *NeuroImage*. Haas' research team included undergraduate students Alexandra Ishak and Ian Anderson and graduate student Megan Filkowski.

More information: Brian W. Haas, Alexandra Ishak, Ian W. Anderson, Megan M. Filkowski, "The tendency to trust is reflected in human brain structure," *NeuroImage*, Volume 107, 15 February 2015, Pages 175-181, ISSN 1053-8119, [dx.doi.org/10.1016/j.neuroimage.2014.11.060](https://doi.org/10.1016/j.neuroimage.2014.11.060).

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