

Study finds new pathway between social anxiety, willingness to help others

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Scott Stoltenberg.

(Medical Xpress)—People's willingness to help others may be influenced by a gene that affects their level of social anxiety, according to a new study led by a University of Nebraska-Lincoln scientist. The study appears to be the first to describe this particular pathway.

Research participants who carry the dominant version of the gene were more likely to indicate anxiety about social interactions or being trapped in situations or places. The anxiety appears to inhibit their "prosocial"

behavior and increase their reluctance to come to the aid of strangers.

Scott Stoltenberg, a UNL behavior geneticist and the study's lead author, said the gene—officially known as the 5-HTTLPR triallelic genotype—affects the amygdala, an area of the brain that is sensitive to threat.

"This particular gene makes a difference in how sensitive you are to threat," he said. "If you're looking at an ambiguous social situation, where there's someone standing there, needing help—maybe you are more likely to interpret that as a threat, a potentially dangerous or embarrassing situation."

People with the recessive version of the gene were more likely to take social risks and to assist other people.

Stoltenberg is among UNL scientists who will go to work at the new Center for Brain, Biology and Behavior, expected to open next month. The center is intended to foster new discoveries about how the human brain works, including a high-profile study of sports-related concussions.

The social anxiety study, co-authored by Gustavo Carlo of the University of Missouri-Columbia, and Christa C. Christ, a UNL psychology graduate student, was published last month in the journal *Social Neuroscience*.

Building upon previous studies that showed an association between pro-social behavior and a gene that governs the serotonin neurotransmitter system, the researchers investigated whether social anxiety is part of the mechanism by which this gene influences social behavior.

"We're the first to connect the dots to find that social anxiety mediates the association between the genotype and prosocial behavior,"

Stoltenberg said.

The study involved 398 undergraduate students who completed a computerized survey to measure their anxiety levels and prosocial behavior. They also submitted cheek swabs for genetic testing.

In a commentary accompanying the study, Kyle G. Rather and Baldwin M. Way, scientists at Ohio State University, said Stoltenberg and his colleagues "provide significant insight into genetic influences on prosociality."

Carriers of the [dominant gene](#) were less likely to help others and more likely to construe social situations as threatening to their well being, Rather and Way wrote.

"This finding suggests that genetic variation influences the extent to which people weigh self (and genetic) preservation concerns when making decisions about whether or not to help others," they wrote.

They added that the methods the researchers use laid the groundwork for additional study of genetic pathways for other psychological traits such as empathy, compassion and moral values.

The study brings researchers closer to understanding the effect that individuals' biological makeup has on their behaviors, Carlo said. If therapists can help people relieve their social anxiety, he said, they could also become more open to prosocial behavior.

"Social people are more likely to be healthier, excel academically, experience career success and develop deeper interpersonal relationships," he said.

Both Stoltenberg and Carlo stressed, however, that the study did not find

a gene that "causes" social anxiety.

"We're not talking about any sort of disease state or disorder," Stoltenberg said. There are many other [genes](#) as well as environmental factors and life experiences that influence both social anxiety and prosocial behavior, he emphasized.

In addition, many of the research participants were not socially anxious though they carried the dominant gene. He explained that the gene indicates increased probability of [social anxiety](#), but does not cause it.

"This is not a gene for something," Stoltenberg said. "It is a gene that influences certain traits."

More information: Carlo co-authored the study, "Afraid to help: Social anxiety partially mediates the association between 5-HTTLPR triallelic genotype and prosocial behavior," with Stoltenberg and Christa Christ, a graduate student at the University of Nebraska-Lincoln. The article appeared in the September 2013 issue of *Social Neuroscience*, which also contained a commentary about the study.

Provided by University of Nebraska-Lincoln

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