

Autism breakthrough: Researchers identify possible treatment for impaired sociability

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Eastern Virginia Medical School researchers have identified a potential novel treatment strategy for the social impairment of people with Autism Spectrum Disorders (ASD), an aspect of the condition that has a profound impact on quality of life.

"Persons with Autism Spectrum Disorders are either disinterested in social interactions or find them unpleasant. They often don't understand what other people are thinking or feeling and misinterpret [social cues](#)," said Stephen I. Deutsch, MD, PhD, the Ann Robinson Chair and professor of psychiatry and behavioral sciences. "Sadly, persons with autism spectrum disorders are often painfully aware of their limited sociability, which can lead to profound feelings of sadness and frustration."

As part of their research, EVMS scientists verified that a specific mouse strain, known as the BALB/c mouse, is a valid [animal model](#) of the limited sociability seen in persons with ASD. In the presence of another mouse, BALB/c mice move as far away as possible and do not interact as normal mice do — just like people with autism often avoid making social contact with other people.

This finding gave researchers a way to test whether an existing medication can alter the function of certain receptors in the brain known to affect sociability and help the animals be more at ease around others. The medication used, D-Cycloserine, originally was developed to treat tuberculosis, but previous studies showed, by chance, that it might

change social behavior. In preliminary studies at EVMS, the medication appeared to resolve the Balb/c mouse's deficits of sociability; it behaved as a normal mouse would when placed near another.

Dr. Deutsch will discuss the research at EVMS' Quarterly Autism Education Series at noon, Dec. 14, in the school's Hofheimer Hall auditorium.

EVMS' laboratory studies with the Balb/c mouse led its investigators to hypothesize that D-Cycloserine could ease the impaired sociability of persons with autism, such as avoiding eye contact and personal interaction. Those traits can severely limit the possibility of employment and independent living for someone with autism.

"What makes this important is you might have someone with a 125 or 130 IQ who's unemployable" because of their social impairments, said Maria R. Urbano, MD, associate professor of psychiatry and behavioral sciences.

Dr. Urbano is moving this promising research from the laboratory directly to patient care by starting a pilot clinical trial of D-Cycloserine in adolescent and young adult patients with [autism spectrum disorders](#). The trial will show whether the medication, which is already known to be safe for use in humans, has similar effects on the sociability deficits of persons with autism as it did in the mice. Her research is supported by a grant from the Hampton Roads Community Foundation.

More information: Published research studies:

"D-serine improves dimensions of the sociability deficit of the genetically-inbred Balb/c mouse strain"
www.ncbi.nlm.nih.gov/pubmed/21056638

"D-Cycloserine improves the impaired sociability of the Balb/c mouse"

www.ncbi.nlm.nih.gov/pubmed/20970484

"Locomotor activity of the genetically inbred Balb/c mouse strain is suppressed by a socially salient stimulus"

www.ncbi.nlm.nih.gov/pubmed/20637841

Provided by Eastern Virginia Medical School

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