

Genetic discovery provides new insight into cognitive disorders

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An international team of scientists, led by Todd Lencz, PhD, professor at The Feinstein Institute for Medical Research at Northwell Health and Hofstra Northwell School of Medicine, have unlocked some of the genes responsible for cognitive ability.

Dr. Lencz and fellow researchers studied the genes of 35,000 people and discovered new genetic variations related to cognitive ability. The findings bring scientists a step closer to developing new - and potentially better - treatments for cognitive disorders of the brain, such as schizophrenia and attention deficit hyperactivity disorder (ADHD). The findings are published today online in *Molecular Psychiatry*.

The team of 60 international scientists is called the Cognitive Genomics Consortium (COGENT). COGENT researchers measured brain function of the participants through tests of learning, memory and other components of cognitive function. In addition to zeroing in on a few specific genes related to cognitive ability, the team also showed a significant genetic overlap between risk for several psychiatric disorders and reduction in cognitive ability. Impairments in general cognitive ability, such as reasoning, problems solving, learning, and memory, are critical components for a number of serious mental illnesses, including schizophrenia.

"This research provides new clues into how the brain works at the molecular level," said Dr. Lencz. "Our long-term goal is to identify potential new targets for treatments of [cognitive disorders](#) of the brain, such as schizophrenia and attention deficit hyperactivity disorder (ADHD)."

COGENT scientists also discovered for the first time a molecular genetic overlap between cognitive ability and personality. Specifically, they found that a genetic predisposition towards higher cognitive ability was associated with greater "openness to experience." This means that some of the genes that make people more likely to be curious about

new ideas and trying new experiences are the same as those that enhance cognitive function.

Dr. Lencz and the COGENT team are currently working with partners in Europe to expand the collaborative team. Their goal is to increase the size of the study to more than 100,000 DNA samples. Dr. Lencz notes, "Today, we know of hundreds of genes related to traits such as height and weight, but only a few related to cognitive ability. We have a lot of work to do if we want to understand the molecular basis of brain function."

Provided by Feinstein Institute for Medical Research

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