

Cognitive disturbance and schizophrenia

*Understanding the roles that genes and cognition
play may lead to more effective treatments*

What differentiates schizophrenia from other disorders is not psychosis or the disturbance of mood. It is the chronic disturbance in thinking or cognition. It is these cognitive deficits that accompany schizophrenia that will have the dramatic effect on real world functioning, long after the hallucinations and delusions have been controlled. Cognitive deficits are at the core of this disturbance called schizophrenia. The field of cognition, therefore, is a major focus of the research being conducted now by the Clinical Brain Disorders Branch at National Institute of Mental Health.

Researchers have been able to apply new testing techniques and state-of-the-art imaging technology to understand such cognitive processes as executive functioning, episodic memory, and working memory. Executive functioning helps individuals plan and manage personal goals. Episodic memory holds autobiographical events with times and places. Working memory stores and manipulates information. It is easy to see why deficits or disruptions in any of these areas cause frustration for the person with the deficit and for the people around them. Ever improving techniques and technologies have allowed researchers to measure cognitive deficits in executive functioning, working memory and episodic memory and locate the areas of the brain where the activity is taking place.

In addition, researchers have been able to learn more about the neurobiology of cognition, by identifying risk genes and discovering how they influence the pathways in the brain that are related to cognition. For example, NIMH has been studying the role of the gene COMT, which stands for catecho-O-methyltransferase, and found that it has a unique role in regulating dopamine functioning in the prefrontal cortex. They are currently studying how the variants of the COMT gene can predict performance on tasks of prefrontal executive functioning and neurophysiologic response in tasks assessing working memory. If researchers are successful at defining the cognitive deficits related to schizophrenia and if they can locate these deficits in specific areas of the brain, effective interventions can be designed. Furthermore, as researchers learn more about the role genes play, it is hoped that these the growing scientific discoveries may be able to predict how an individual will respond to a specific treatment.

NIMH is currently investigating pharmacological approaches as a potential treatment for cognitive disorders related to schizophrenia. If you or someone you know has schizophrenia and you would like to learn more about the research that explores the cognitive aspect of schizophrenia and its treatment, please call the NIMH Schizophrenia Research Program Referral Line at 1-888-674-6464 or 301-435-8970 (TTY:1-866-411-1010) or email Schizophrenia@mail.nih.gov.

The National Institute of Mental Health (NIMH) is part of the National Institutes of Health (NIH) of the Department of Health and Human Services.



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the Answers.**

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