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Annual Report Story

A Lead Gene that Causes Schizophrenia Detected at ENH Research Institute

ENH researcher identifies gene through $11 million grant from National Institutes of Health

Dr. Pablo Gejman, Director of the Evanston Northwestern Healthcare Center for Psychiatric Genetics and a researcher at the ENH Research Institute has detected a lead gene that causes schizophrenia, a chronic, debilitating brain disorder that affects 70 million people worldwide. There is no cure for schizophrenia, but cure and prevention are the main goals of psychiatric research.

“The hallmark of schizophrenia is the presence of psychosis, which includes symptoms of delusions and hallucinations,” says Dr. Gejman, lead author of the study. “Not infrequently, patients with schizophrenia show disorganization and incoherence, particularly during the acute periods of the disease. There are other common symptoms of schizophrenia, known as ‘negative.’ They typically take the form of affective flattening, lack of motivation or apathy, and reduced feelings of being pleased or gratified. Schizophrenia is frequently associated with depression and the suicide rate is high.”

Dr. Gejman’s current research, which was recently published, has been in the process since 2004. He says the lead gene is called a “trace amine receptor” and his team detected the gene by studying the DNA of family members of schizophrenia patients. People who have schizophrenia frequently have one form of the gene. Dr. Gejman’s research is expected to be used as the basis for developing new medications to treat schizophrenia. Anti-psychotic medications have been available since the mid-1950s. Many of these drugs inhibit a brain chemical called dopamine. Along with serotonin, dopamine is a neurotransmitter formed in the brain

and is essential for the central nervous system to function properly. Both allow nerve cells in the brain to send messages to each other. Many patients who have taken medication are able to live reasonably productive lives, but improved drugs will help to minimize side effects often associated with current medication.

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Schizophrenia research - add one

Dr. Gejman's research team is the recipient of an $11 million grant, one of the largest from the National Institutes of Health. Dr. Gejman says, "The results from our research will improve our understanding of the biological mechanisms that lead to schizophrenia and how they interact with the environmental risks. Alterations in mood are
common in schizophrenia. Bipolar disorder might have some shared genetic factors with schizophrenia; our research might yield light on them."

With one of the largest databases in the world, Dr. Gejman is working with thousands of patients to research gene mutations and other genetic make up that causes the disease. There are different types of schizophrenia, including paranoid, catatonic, disorganized and schizoaffective disorder. Schizoaffective disorder causes mood problems and psychosis.

Schizophrenia is not split personality or multiple personality. It is difficult for people suffering from schizophrenia to differentiate between what is real and what they have imagined and people with the disorder are usually withdrawn in social situations and display few emotions. Some schizophrenics may see, feel or hear something that does not exist. Hearing imaginary voices is common. It is usually detected in people ages 13 to 25, but can appear earlier in males than it does females.

Genetic factors also play a role, as people who have family members with schizophrenia may be more likely to get the disease themselves. A person's environment may also trigger schizophrenia. For example, an infection during

intrauterine development or at birth may increase the risk for developing schizophrenia later in life.

Dr. Gejman says, “The symptoms of schizophrenia can make it difficult to relate with the patient and the burden on families is high. Families benefit from education on what to expect from schizophrenia and from dedicated emotional support. A positive attitude of the family in regards to continuing medical care is critical for the outcome of the disease.”

Many patients with schizophrenia also face a public stigma, which is one of the most handicapping consequences of this disease. It is the cause of social discrimination, including housing, education, and employment. As a consequence of stigma, patients can become very demoralized.

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