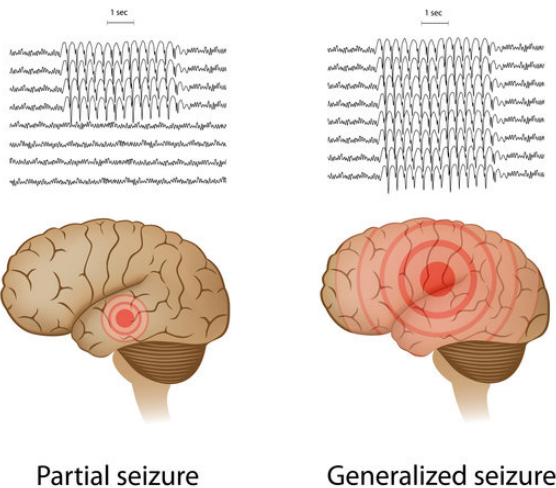


Epileptic seizures and depression may share a common genetic cause, study suggests

10 January 2018, by Todd B. Bates



In people with epilepsy, partial seizures are also known as focal seizures. While focal seizures start in one part of the brain, generalized seizures start in both sides of the brain. Credit: National Institutes of Health

From the time of Hippocrates, physicians have suspected a link between epilepsy and depression. Now, for the first time, scientists at Rutgers University-New Brunswick and Columbia University have found evidence that seizures and mood disorders such as depression may share the same genetic cause in some people with epilepsy, which may lead to better screening and treatment to improve patients' quality of life.

The scientists studied dozens of unusual families with multiple relatives who had epilepsy, and compared the family members' [lifetime prevalence of mood disorders](#) with that of the U.S. population.

They found an increased incidence of mood disorders in persons who suffer from a type of the

condition called focal epilepsy, in which [seizures](#) begin in just one part of the brain. But mood disorders were not increased in people with generalized epilepsy, in which seizures start on both sides of the brain.

"Mood disorders such as [depression](#) are under-recognized and undertreated in people with epilepsy," said Gary A. Heiman, the study's senior author and associate professor in the Department of Genetics at Rutgers-New Brunswick. "Clinicians need to screen for mood disorders in people with epilepsy, particularly focal epilepsy, and clinicians should treat the depression in addition to the epilepsy. That will improve patients' quality of life."

The results of the study - published online today in the journal *Epilepsia* - support the hypothesis that people with [focal epilepsy](#), but not [generalized epilepsy](#), are susceptible to mood disorders such as depression.

"More research is needed to identify specific genes that raise risk for both epilepsy and mood disorders," said Heiman, who works in the School of Arts and Sciences. "It's important to understand the relationship between the two different disorders."

A relationship between epilepsy and mood disorders has been suspected for millennia, Heiman noted. Hippocrates, "the father of medicine," wrote about it around 400 BC: "Melancholics ordinarily become epileptics, and epileptics, melancholics: what determines the preference is the direction the malady takes; if it bears upon the body, epilepsy, if upon the intelligence, melancholy."

Seizures in most people with epilepsy can be controlled by drugs and surgery. The fact remains,

however, that epilepsy and mood disorders such as depression affect quality of life and increase disability and healthcare costs. Depression raises the risk for suicidal thoughts and attempts. Moreover, previous studies have shown that people who have both epilepsy and mood disorders tend to have worse seizure outcomes than those without mood disorders.

In the U.S., about 2.3 million adults and more than 450,000 children and adolescents have epilepsy, and anyone can develop the disorder. In 2015, an estimated 16.1 million adults at least 18 years old in the U.S. had at least one [major depressive episode](#) in the past year, according to federal figures.

"A number of genes have been found for epilepsy and understanding if these genes also might be causing depression is important," Heiman said. "In particular, more studies should be done to understand the relationship between focal [epilepsy](#) and mood disorders."

More information: Beverly J. Insel et al, Mood disorders in familial epilepsy: A test of shared etiology, *Epilepsia* (2018). DOI: [10.1111/epi.13985](https://doi.org/10.1111/epi.13985)

Provided by Rutgers University

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