

# Study finds surprising links between depression, suicide, and epilepsy

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Researchers have found provocative evidence that the brain dysfunction that underlies epilepsy may also determine whether people are at risk for suicide. The study, published online October 10, 2005 in the *Annals of Neurology*, also suggests that depression and suicide may have different brain mechanisms.

"For reasons that are not understood, depression both increases the risk for developing epilepsy and is also common among people with epilepsy who experience many seizures," said lead author Dale C. Hesdorffer, Ph.D., of the Gertrude Sergievsky Center at Columbia University.

It has commonly been assumed that the difficulties associated with living with epilepsy could provoke depression, and in some cases, an increased risk of suicide, the authors write. But it is harder to explain the opposite findings, that people who develop depression have a higher risk of later experiencing a first seizure.

While neuroscientists have postulated overlapping brain systems for depression and epilepsy, this evidence is still preliminary. In the present study, the researchers attempted to define more clearly the relationship between depression, suicide, and epilepsy.

"One question we had was whether some symptoms of depression were more important than others for increasing the risk for developing epilepsy," said Hesdorffer. "Suicidal thoughts and suicide attempt were possibilities, because people with epilepsy seem to be more likely to

commit suicide than the general population. But we looked at all symptoms of depression."

Hesdorffer and colleagues compared data for both epilepsy and depression in 324 people with epilepsy and 647 control subjects.

A history of depression increased the risk of epilepsy, but the startling finding was that people with epilepsy were 4 times more likely to have attempted suicide before ever having a seizure, even after other factors were taken into account like drinking alcohol, having depression, age, and gender.

The individual presence of other symptoms of depression, whether common (e.g., depressed mood) or more rare (e.g., weight change) did not predict a greater likelihood of later seizures.

While this finding clearly suggests common underlying brain mechanisms for suicidal behavior and epilepsy, the results also suggest that depression and suicidal behavior may be related to different mechanisms.

"Increasingly, clinicians treating people with epilepsy ask about current depression, but they may not ask about past suicide attempt or suicidal thoughts," said Hesdorffer. "Our results may alert clinicians to the need to ask this question and offer any needed counseling to prevent the occurrence of later completed suicide."

"We plan to follow up with studies designed to see whether the co-occurrence of these disorders is explained by shared genetic susceptibility, and with studies that examine possible common underlying neurotransmitter abnormalities," said Hesdorffer.

Source: John Wiley & Sons, Inc.

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