

Neurological disorders are linked to elevated suicide rates

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A newly published study in *JAMA* shows that people with neurological disorders have a 75% higher suicide rate than people with no neurological disorders. Still, suicide deaths are rare events. While the suicide rate for the general population is around 20 per 100,000, the rate for people with neurological disorders is around 40 per 100,000 person-years. The study is based on the data covering the entire population of

Denmark and followed over 37 years.

The researchers found that one out of 150 persons diagnosed with a [neurological disorder](#) dies by [suicide](#). For severe neurological diseases, such as Huntington's, one out of 61 diagnosed died by suicide. This study is the most comprehensive assessment of a link between neurological [disorders](#) and suicide conducted to date.

"This is the first time we have examined this many different neurological disorders to gain a more detailed understanding of when risk of suicide is pronounced. These insights can help us shape dedicated preventive effort," says Dr. Annette Erlangsen, lead author and senior researcher at Danish Research Institute for Suicide Prevention (DRISP).

Up to five times higher suicide rate

The study shows that people who have been diagnosed with [amyotrophic lateral sclerosis](#) (ALS) or Huntington's disease have particularly high risk, as the suicide rate associated with these disorders is four to five times higher than in the general population.

Furthermore, people who have been exposed to traumatic brain injury, multiple sclerosis or epilepsy have a suicide rate double the level of the that among those with no such disorders.

"There may be several coexisting explanations for the excess suicide rate. People may have difficulties understanding and coming to terms with the consequences of a newly diagnosed chronic disorder. In addition, mental disorders as well as social and relationship factors may play a role," explains Dr. Elsebeth Stenager, a professor in social psychiatry at University of Southern Denmark.

Changes in risk

The risk of suicide has previously been associated with [psychiatric disorders](#), but this new study shows that neurological disorders are also linked to an elevated suicide rate. It is even possible that undiagnosed mental disorders may account for some of this excess risk.

"The elevated risk appears at different stages during the course of the disorders. For example, people with dementia were found to have a two to three times higher suicide rate during the first three months after being diagnosed. On the other hand, people who had been diagnosed with dementia more than a year ago were found to have a lower suicide rate than the [general population](#)," explains Dr. Egon Stenager, a clinical professor in neurology at University of Southern Denmark.

He and the research team cannot yet explain these differences in the risk of suicide. However, it seems to be related to the type of disorder, the progress of the disease and what treatment options exist.

Development of preventive initiatives

The research team behind the study consisted of international experts on neurology, psychiatry, and suicide prevention. By using unique linkable Danish medical data, it was possible to calculate exact suicide rates for disorders such as ALS and Huntington's disease. The researchers expect that the findings will be of great benefit for future interventions.

Further analyses will be needed to identify how the risk of suicide should be addressed for individual disorders. Annette Erlangsen explains that the goal for this first step was to identify which disorders ought to be addressed by preventive efforts. The next steps are to consider at what time and how intervention should be offered.

Some of the neurological disorders that were examined:

- Head injury
- Apoplexy
- Epilepsy
- Polyneuropathy
- Myasthenia gravis
- Parkinson
- Multiple Sclerosis
- Central nervous system infections
- Meningitis
- Encephalitis
- Amyotrophic lateral sclerosis (ALS)
- Huntington's disease
- Dementia
- Intellectual disabilities

More information: *JAMA* (2020). [DOI: 10.1001/jama.2019.21834](https://doi.org/10.1001/jama.2019.21834)

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