

# The risk of dying during pregnancy is five times higher for women with epilepsy

October 4 2018

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The risk of dying during pregnancy is negligible for the average Danish woman, but if a woman has epilepsy, the probability is multiplied by five. This is the central result of a comprehensive epidemiological study

conducted by researchers from the health department at Aarhus University.

The study is published in *Neurology*, and shows that out of approximately 2 million [pregnant women](#), including 12,000 [women](#) with [epilepsy](#), a total of 176 women died during their [pregnancy](#). Five of them had epilepsy, which means women with epilepsy are a higher risk group, says Jakob Christensen, one of the researchers behind the study. He is a clinical associate professor, DMSc at the Department of Clinical Medicine at Aarhus University and a consultant at the Department of Neurology at Aarhus University Hospital.

"Although the absolute risk is small, we have to consider how we can follow pregnant women with epilepsy better than today," says Jakob Christensen.

According to the study, pregnant women with epilepsy die of virtually the same conditions and events as women without epilepsy—including accidents, blood clots, cancer and suicide—although with a greater frequency.

"We can't produce statistics on causes of death on the basis of five deceased pregnant women with epilepsy, but we can conclude with great statistical certainty that pregnant women with epilepsy die five times more frequently than other pregnant women," says Christensen.

The research results should be seen in light of the fact that in general, people with epilepsy have a higher mortality rate than the rest of the population. Overall, for women of childbearing age, the mortality rate is 15 times higher.

The relative risk of death is thus lower for women with epilepsy who are also pregnant when compared to all women with epilepsy, which, as

Christensen points out, may be due to the fact that it is always the most healthy women who become pregnant.

"As a woman with epilepsy, you are affiliated with highly specialised neurological treatment at a hospital, while on the other hand, you need follow-ups from your general practitioner. Patients in this situation risk being sent back and forth, as one medical service believes the other is taking overall responsibility and vice versa. This could be a partial explanation for the increased mortality, which is particularly seen in people with epilepsy who also suffer from mental illness—something that is unfortunately well documented, for example, in Swedish patients with mental illness," says Jakob Christensen.

"At the same time, we must take into account that the vast majority of pregnant women with epilepsy receive medication and are closely monitored during pregnancy, and that this probably helps to reduce the overall mortality, because close monitoring means that there is better management of their epileptic seizures," he says.

The study was conducted in close collaboration between Jakob Christensen, who meets the patients in the clinical reality, statistician Claus Høstrup Vestergaard from the Research Unit for General Practice under the Department of Public Health, and Associate Professor Bodil Hammer Bech, who works with epidemiology at the Department of Public Health.

The research group examined 2,110,084 pregnancies between 2000 and 2013. Among these pregnancies, 11,976 (0.6 percent) were pregnancies among women with epilepsy; in all cases, "pregnancy-related death" was defined as death during pregnancy and up to 42 days after the end of the pregnancy. Mortality among women with epilepsy was compared with the mortality rate for women of the same age and social background.

The Danish study is the result of a number of worrying studies from the U.S. and U.K. reporting a tenfold increase in the risk of dying for pregnant women with epilepsy. But things do not look quite as bad in Denmark.

"Even though it can be difficult to compare Denmark with the United States and the U.K. because the healthcare systems are constructed differently, the study indicates that in Denmark, we're better at dealing with pregnant women with epilepsy, which we should naturally be pleased about. But this is of little consolation for the pregnant Danish women with epilepsy who still have a markedly increased risk of losing their lives during pregnancy. And I definitely think that we should take an interest in this as medical doctors," says Christensen.

## **More information about epilepsy**

Epilepsy is one of the most common neurological diseases. Epilepsy can have many different causes, manifestations and prognoses. The common denominator is recurrent epileptic seizures as a result of the signal out-of-control traffic in larger or smaller networks of nerve cells in the brain.

Worldwide, approximately sixty million people have epilepsy. Epilepsy affects 12 Danes every day. A total of 50,000 are diagnosed in Denmark—of these, 65 percent are free of seizures.

The majority of women with epilepsy can become pregnant and have healthy children, but pregnancy in women with epilepsy requires preparation and planning in consultation with a medical doctor, because both frequent epileptic seizures and epilepsy medicine can harm the child.

**More information:** Jakob Christensen et al. Maternal death in women with epilepsy, *Neurology* (2018). [DOI:](#)

[10.1212/WNL.00000000000006426](https://doi.org/10.1212/WNL.00000000000006426)

Provided by Aarhus University

Citation: The risk of dying during pregnancy is five times higher for women with epilepsy (2018, October 4) retrieved 11 May 2024 from <https://medicalxpress.com/news/2018-10-dying-pregnancy-higher-women-epilepsy.html>

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