

Lack of folic acid enrichment in Europe causes mortality among fetuses

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5,000 cases of spina bifida and other severe birth defects could be avoided each year if all women in pregnancy age received folic acid.

A new international study shows that 5,000 fetuses in Europe annually are affected by spina bifida and other severe defects on the central

nervous system. Seventy per cent of these pregnancies are terminated, while increased mortality and serious diseases affect the children who are born. At least half of the cases can be avoided by adding folic acid to staple foods as is already being done in seventy non-European countries.

A lack of [folic acid](#) enrichment in Europe is the cause of several thousand cases of foetal abnormalities e.g. spina bifida. These congenital diseases lead to an open [spinal cord](#) or brain malformation due to deformed vertebrae. The best-case scenario for the newborn baby is to undergo some correcting surgeries, though this case is also associated with various degrees of disabilities. In the worst cases, the baby will not survive. Today, two out of three foetuses with spina bifida are terminated by an abortion after diagnosis in the beginning of the pregnancy.

Half of the 5,000 annual cases could be avoided by enriching foods with the vitamin folic acid, which is known to play an important role in the formation of the vertebrae in prenatal life. In Europe, it is currently recommended that all women who are planning a pregnancy should take a [folic acid supplement](#). But the numbers which reveal the development over 11 years show that the voluntary scheme is ineffective and has serious consequences for the foetuses.

The research results from Aarhus University have just been published in the scientific journal *Birth Defects Research*.

Spina bifida cut by fifty per cent following folic acid enrichment

70 non-European countries have already introduced folic acid enrichment, including the USA, where it was introduced 17 years ago, as well as Canada and Australia. The measure has reduced foetal defects

related to folic acid such as spina bifida by fifty per cent.

"European women have a blood level of folate that is only around half the level recently recommended by the WHO for the prevention of [birth defects](#). There is no doubt that a policy on folic acid enrichment would increase women's folate and prevent a significant percentage of the [spina bifida](#) cases in many European countries and thus prevent deaths and illnesses among children," says Associate Professor Rima Obeid from Aarhus Institute of Advanced Studies at Aarhus University, who together with an international team of researchers from Germany, Switzerland, and the USA is behind the study.

The study is based on nine million registered births in Europe over a period of 11 years and it shows that there are on average 9.17 cases of abnormalities of the brain and the spinal cord per 10,000 births. The numbers are higher in North European countries e.g. Scandinavia, the Netherlands and Germany than in southern countries.

Delay in Europe has a price

European policy makers have been hesitant because of the fear of side effects. However, there is no evidence for damaging side effects even in the countries that introduced the measure for over 15 years ago.

"Food enrichment with a minor amount of folic acid has been shown to be safe for the population - also without [side effects](#) for other age groups and men - and an effective way of lowering the level of birth defects. It is the most cost-effective way to reach every woman before pregnancy and to reduce child mortality and the risk of disease. But introducing such a measure would require collaboration between policy makers, stakeholders, researchers and healthcare professionals and a country-specific preparation and monitoring processes," explains Rima Obeid.

The study also demonstrates that cases born with abnormalities of the brain and spinal cord entail major social and financial burdens. Germany alone, which has the highest number of births per year in Europe, could annually prevent 441 cases of these birth defects if folic acid enrichment was introduced. This would also provide estimated savings of EUR 33 million in medical life cycle costs based on a single year (2009).

More information: Read the complete scientific article "Preventable Spina Bifida and Anencephaly in Europe" in Birth Defects Research (Part A), 2015. [onlinelibrary.wiley.com/doi/10... 1002/bdra.23400/epdf](https://onlinelibrary.wiley.com/doi/10.1002/bdra.23400/epdf)

Provided by Aarhus University

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