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Fortified flour fracas

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Compulsory folic acid supplementation may hold risks.

Folic acid in flour is a mixed issue. Credit: © Corbis

The safety of folic-acid supplements should be tested before they are routinely added to flour, suggest UK researchers. The warning follows a UK Department of Health report recommending mandatory flour enrichment with the nutrient[1].

Upping the intake of folic acid, a type of B vitamin, during the first month of pregnancy cuts women's risk of bearing babies with spinal-cord defects such as spina bifida. Folic acid has been compulsorily added to flour in the United States since 1998.

"Although the benefits are clear, the possible dangers are not," warn Brian Wharton and Ian Booth of the Institute of Child Health in London.

"It's open for debate," says Paul Finglas, who studies the effects of folic-acid supplements at the Institute of Food Research in Norwich, UK. Naturally present in green leafy vegetables, the nutrient is not subject to the same strict regulations as drugs.

High doses of folic acid - greater than 1 milligram per day - can mask the symptoms of vitamin B12 deficiency, a condition that may ultimately cause nervous system damage. Elderly people are particularly susceptible.

A study earlier this year revealed an additional link between folic-acid supplements during pregnancy and the likelihood of a woman having twins[2].

"There are potential risks," agrees micronutrient researcher Chris Bates of the Human Nutrition Research centre in Cambridge, UK. Small groups in the population might have a particular sensitivity to doses of the vitamin, he explains. "That's always got to be a concern."

Women are advised to double their intake of folic acid, also known as folate, from 200 to 400 micrograms a day in the first month of pregnancy. This is when the embryo's neural tube - the future spinal cord - forms. Fortification of a staple food ensures that women unaware of their pregnancy are protected.

Wharton and Booth question whether it is acceptable to increase the folic-acid intake of the population's millions to prevent a relatively small number of affected pregnancies[3]. There were 400 cases of neural-tube defects in the United Kingdom in 1998; one- to two-thirds of these would be expected to have been prevented by adding folate to flour and bread.

A 19% drop in neural-tube defects followed the fortification of these foods in the United States, but the benefits of routine supplementation have not been tested experimentally.

Large-scale trials are difficult to do, points out Bates. Huge numbers of participants would be needed in order to detect either a reduction in neural-tube problems or rare side-effects. Introducing supplements in a small, carefully monitored region first could pick up potential problems, he suggests.

Parents of a child with spina bifida are likely to argue for fortification, points out Finglas. Following on from their initial report, the UK Department of Health and the Food Standards Agency (FSA) are currently undertaking additional work to assess potential risks of supplementation. "UK Health Ministers will then consider options for action, taking into account any FSA advice," says a Department of Health statement.

References

1 Department of Health,, 2000:1.101. (2001).

2 Ericson, A., Kallen, B. & Aberg, A. Use of multivitamins and folic acid in early pregnancy and multiple births in Sweden. *Twin Research* **4,** 63 - 66 (2001).

3 Wharton, B. & Booth, I. Fortification of flour with folic acid. *British Medical Journal* **323,** 1198 - 1199 (2001).

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