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Can fortified foods provide 400 µg folic acid daily?

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Women of child-bearing age who are sexually active are recommended to take a daily supplement providing 400 µg folic acid to reduce the risk of the development of neural-tube defects in their unborn baby[1]. Regular consumption of fortified foods can contribute to folic acid intakes. In light of recent research associating high intakes of folic acid with possible adverse effects[2], women may prefer not to exceed the recommended 400 µg folic acid/d. The purpose of the present paper is to examine the feasibility of achieving 400 µg folic acid daily through fortified foods and to explore the contribution of fortified foods to intakes of folic acid above the European tolerable upper level (UL)[3].

A supermarket survey (five major outlets) was carried out to assess foods fortified with folic acid currently on sale in Ireland. Average portion sizes of branded folic acid-fortified food products were selected to create varied meal plans to examine the feasibility of achieving a daily intake of 400 µg folic acid over 1 week. National food consumption data for children (5–12 years) and adults (18–64 years) were used to identify folic acid intakes above the European UL for folic acid and to evaluate which foods contributed to this high intake.

Food category	No. of brands	Proportion of the market*	Folic acid (µg/100 g)
Breakfast cereals	104	0.6	110–571
Cereal bars	27	0.29	100–250
Fat spreads	15	0.16	100–1000
Milk	4	0.05	30–70
Juice	11	0.05	0.07–100
Dried soup	4	0.13	18–30
Yogurt	2	0.01	40–200
Bread	–	0.02–0.17	23–379

*Based on data from August 2006 to August 2007 supplied by TNS, Blackrock, Co. Dublin, Republic of Ireland.

Of the 183 foods identified breakfast cereals (58.5 %) were the main food category fortified with folic acid, followed by cereal bars (15.9 %), fat spreads (8.2 %) and juices (6 %). Large variances were found in the folic acid content of products within and between food categories, as shown in the Table. Fortified foods identified in the survey could be easily combined into various meal plans, each providing 400 µg folic acid daily. The UL for folic acid was exceeded by >10 % of Irish children and 0.2 % of adults, with fortified foods (breakfast cereals, fat spreads, milks and juices) and food supplements contributing to these high intakes, respectively.

Fortified foods make a definite contribution to folic acid in the diet. Recommendations based on fortified foods are not feasible for public health policy because of the *ad hoc* nature of voluntary food fortification. Furthermore, difficulties in the calculation of portion sizes based on information provided on food labels can make it challenging to estimate 400 µg folic acid from fortified foods.

1. Food Safety Authority of Ireland (2006) *Report on the National Committee on Folic Acid Food Fortification*. Dublin: FSAI.
2. Cole BF, Baron JA, Sandler RS *et al*. (2007) *JAMA* **297**, 2351–2359.
3. European Food Safety Authority Scientific Committee on Food and Scientific Panel on Dietetic Products, Nutrition and Allergies (2006) *Tolerable Upper Intake Levels for Vitamins and Minerals*. Parma, Italy: EFSA.