Letter to the Editor

Title: Folic acid supplementation: might a high dose harm the child?

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The editorial by Mitchell[1] welcomed the USPSTF recommendation that women of child-bearing age in USA should take a daily supplement containing 400-800 μg of folic acid to prevent neural tube defects (NTDs). But the rationale for the recommendation is puzzling. The recommendation makes sense for countries without mandatory folic acid fortification. However, as Mitchell says, two case-control studies in the USA after fortification have failed to show an additional benefit of folic acid supplementation in the prevention of NTDs. Mitchell suggests that folic acid fortification may be preventing nearly all cases of folic acid–related NTDs. Her suggestion is consistent with a 'floor-effect' for folate-sensitive NTDs.[2]

The rather high upper dose (800 μg) of folic acid is a concern. In the Task Force's 2009 recommendation it was considered that, when food is fortified with folic acid, the effective amount of additional folic acid supplementation "is unclear".[3] So what has changed? The concern about the dose is that a woman taking 800 μg folic acid per day, in addition to the folates in her food and the folic acid in fortified food, could well be exposed to a dose that exceeds the safe upper limit of 1 mg/day.

Of particular concern to the pediatrician, is the possibility of harm to the child. Among the potential harms is an increased incidence of atopic allergy. The risk was considered small but, since the Task Force met, a large study has been reported from Norway on almost 40,000 women and children, out of which 1,901 children had a diagnosis of asthma. Total maternal intake of folate from food and from supplements was estimated at 22 weeks' gestation from a validated Food Frequency Questionnaire; asthma in the child at age 7 was diagnosed from a

national prescription database. There was a 23% increased risk of asthma in children whose mothers fell into the top quintile of total folate intake (RR 1.23, 95% CI 1.06, 1.44).[4] The threshold for the 5th quintile was a total folate intake of 578 μg/day. Although this observational study is subject to the usual caveats, it should alert women to the possible harm in taking high doses of folic acid.

The Task Force should reconsider the dose range they have recommended.

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References

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