Reviewer's report

Title: How well do blood folate concentrations predict dietary folate intakes in a sample of Canadian lactating women post-folic acid fortification of the food supply: An observational study.

Version: 1 Date: 12 April 2007

Reviewer: Marie Caudill

Reviewer's report:

General
In this paper, the authors determined the relationship between dietary folate intake and blood concentrations of folate (plasma folate and RBC folate). Using 3-day weighed food records, dietary folate intakes were tabulated from diet records using Health Canada's Canadian Nutrient File which has been updated to reflect fortification levels and is based on the USDA Nutrient Database for Standard Reference. Blood folates were measured microbiologically. The authors found a significant but modest association between total dietary folate intakes and plasma and RBC folate and concluded that blood folate concentrations are not reliable predictors of folate intake.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
1. This is an interesting study which demonstrates only modest associations between total dietary folate intake and blood folate concentrations. One interpretation of this finding is as the authors' state “blood folate concentrations are not reliable predictors of folate intake”. However, there is another interpretation of these data that was not addressed by the authors “folate intake estimated via food composition tables is not a reliable predictor of folate status”.

Controlled folate feeding studies performed by our research group (Yang et al. 2005, Guinotte et al. 2003, Perry et al. 2004, Hung et al. 2006) and others (Lynn Bailey) clearly demonstrate that serum folate and RBC folate are sensitive and specific indicators of folate intake. In these studies, the folate content of the diet was measured in the lab via tri-enzyme methodology. None-the-less, there is variability amongst subjects in the same treatment group especially on higher folate intakes. This may be due in part to the bioavailability of food folate especially at higher levels of intake as well as genetic differences in key regulatory enzymes.

I strongly recommend that the authors consider presenting both sides of this story in the discussion and elsewhere.

2. I also recommend modifying the conclusions of this paper. For example:

Due to the relatively poor relationship between dietary folate intake estimated via food composition tables and blood folate concentrations, more studies are needed to examine the relationship between blood folate concentrations and NTD risk. Until data from such studies are available, women planning a pregnancy should continue to consume a daily folic acid supplement of 400 ug.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)
1. Since RBC folate is reflective of dietary intake over the past three months, would it be beneficial to examine the relationship between dietary intake at wk 4 and RBC folate at wk 16?

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field
Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests.