Reviewer's report

Title: Maternal characteristics associated with the dietary intake of nitrates, nitrites, and nitrosamines in U.S. women of child-bearing age

Version: 1 Date: 6 November 2009

Reviewer: Barbara Thomson

Reviewer's report:

Major Compulsory Revisions
1 The authors give a robust report of selected maternal characteristics in US women of childbearing age, from a large sample size of 5958 subjects. As a food scientist however, the paper has significant weakness in the presentation of intake assessment of nitrates, nitrites and nitrosamines against which these maternal associations are assessed. The claimed associations are only as good as the underpinning data and whilst the authors cite methodology is published elsewhere, the reader is unable to evaluate the robustness of the dietary assessment. In my view Table F2A should be included in the body of the paper. Intake = concentration x consumption. Given the same average concentration values were used for each person, any observed differences reflect differences in amounts consumed or food choices. The intakes are based on 58 foods but the contribution of individual foods is not provided. This would be helpful in evaluating the reason for observed associations- as included in our paper Thomson et al., (2007) Food Additives and Contaminants;24(2):113-121. Are the observed differences related to serving sizes or food choices?

2 The discussion, in my view is weak on possible explanation/plausibility of the apparent associations. In part, this is because of the lack of detail provided on source foods.

3 Page 11, nitrite intake, re dietary folate. The difference between >319> looks more significant than the difference between >685>. Consider rewording "Participants who consumed more than 319µg/day of dietary folate compared to participants with dietary folate consumption <319 µg/day were approximately twice as likely to also....."

4 Total dietary nitrite intake. Any explanation for the difference in education status and nitrite intake compared with education difference and total nitrite intake?

Minor essential revisions
1 Include in the introduction evidence of the role of alcohol in nitrosamine formation.

2 Reduce the number of Tables by combining Tables 1&5, 2&6, 3&8, 4&8 (landscape?) The first 5 columns of Tables 5-8 repeat the information in columns of Tables 1-4.
3 Page 7, para 2 is more suitably placed in the results section - suggest Page 10, after para 1.

4 The number of decimal places in the intake assessments overstate the accuracy of these estimates. Suggest reducing to a maximum of 1 decimal place throughout the document.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests