Reviewer’s report

Title: Consumption of sweet foods and mammographic breast density

Version: 2 Date: 12 March 2014

Reviewer: Rachel Denholm

Reviewer’s report:

Major Compulsory Revisions

ABSTRACT
1. Methods section should include some information on the adjustments made in the analyses

BACKGROUND
2. Well written and researched introduction

METHODS
3. How confounding variables were categorised needs to be described

4. How exposure variables described as servings per week were categorised are not described. It is not particularly clear that two categorisations of the exposure variables (quartiles and servings per week) were used in the analyses.

5. Spearmens rank correlations are univariate analyses that assess the correlation between two variables. I think too much weight has been placed on them and, in particular, using them in the BMI and physical activity stratified analyses is uninformative.

6. Complete the BMI and physical activity stratified analyses using the generalised linear models to examine trends. The numbers would be sufficient for all women; for example BMI >25 n=803 which is comparable to the stratified analysis by menopausal status (sweet food analysis premenopausal n=774 and postmenopausal n=768). Add an interaction term to assess whether there is a difference by menopausal status; this could provide some information on differences in the association and could be discussed even though the statistical power to conduct stratified analysis by menopausal status may not be there.

RESULTS
7. I think this section could be structured and written a little better as at the moment it’s a little confusing. Maybe having separate paragraphs for each exposure would make it easier for the reader.

8. Again, I think the Spearmens Correlation findings are over-emphasised in this section. Generally, although exposures are significantly correlated with MD, the strength of the correlation is quite low, i.e. all <0.10.
9. An interesting result that I think could be further discussed is the association between sweet foods and MD in premenopausal women; as consumption increases, MD decreases. What are the authors' interpretations of this result?

10. Are all results using quartiles and weekly servings comparable?

11. As I mentioned above, I think the authors could strengthen the BMI and physical activity sub-group analysis.

DISCUSSION

12. The discussion section is well-researched and generally well-written.

13. Sentence below does not make sense, I think you are missing a ‘not’ somewhere. In postmenopausal women you would expect MD to be lower – do you mean the increased MD associated with increased sweet food intake. What other factors in premenopausal women?

“This discrepancy could lead to the assumption that the effect of increased consumption of desserts on breast cancer risk would be explained in part by the increase in MD for postmenopausal women but by other factors for premenopausal women”

Minor Essential Revisions

GENERAL

14. Spelling errors
- spoonsful
- intakes
- sweets

METHODS

15. What is personal history of biopsy?

RESULTS

16. Figure 1: Needs a title and foot notes – is this adjusted analysis? Is it possible to include 95% CI?

Discretionary Revisions

17. I would like to see the results using the weekly serving exposure measures in a table format, so I could directly compare the two methods.

18. I think the emphasis for the findings relating to sugar-sweetened beverages and MD could be changed; the association found in all women is driven by the relationship in premenopausal women.

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 have no competing interests