Reviewer's report

Title: Low birth weight, preterm birth or small-for-gestational-age are not associated with dental caries in young Japanese children

Version: 1 Date: 8 February 2014

Reviewer: Jonathan Broadbent

Reviewer's report:

1. Is the question posed by the authors well defined?
   Yes

2. Are the methods appropriate and well described?
   The authors wish to investigate relationships of birth and dental caries, but are doing this through a cross-sectional rather than longitudinal study. They may miss differences that develop with time/age. Cultural differences may be important here too, and must be acknowledged. It might be that in Japan

3. Are the data sound?
   Yes

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   Yes

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   Yes, although I have made some recommendations for the analysis

6. Are limitations of the work clearly stated?
   Yes, although I have made a few further suggestions

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
   The authors have published related material in the past

8. Do the title and abstract accurately convey what has been found?
   Yes

9. Is the writing acceptable?
   Yes - just a few very minor issues with the grammar that the authors are likely to pick up on reviewing the manuscript. Overall very good.
Major Compulsory Revisions

1. In results, clarify the meaning of “mean number of dental caries” – was this teeth or surfaces? It isn’t stated. Presumably the value of 0.70 among the entire study population, please clarify this. This would mean that since ~80% of the sample had no caries, the mean among the remaining 20% would be 3.5, which suggests a very skewed dataset with a lot of zero values. The distribution of dental caries is not reported and this would be important information to have available to the reader. This also has implications to the analysis – the investigation of the prevalence of dental caries may be too simplistic, it may well be the premature-born children who have greater severity of dental caries (rather than just a greater risk of having any). Other methodological approaches may be more appropriate for this purpose.

2. The authors refer to research that has identified greater rates of hypoplastic enamel defects in the teeth among premature-born babies, while others have also pointed to an increased risk of MIH for those that are born late. MIH is the type of defect that increases risk of dental caries.

3. Smoking is more associated with periodontal disease than dental caries, and a systematic review of the literature by these same authors concluded that the association of dental caries and second-hand smoke is very tenuous. Since smoking during pregnancy is an important predictor of pre-term birth and small-for-dates, the authors should consider interaction between birth-related factors and smoking upon dental caries.

4. Dental caries is relatively low in Japan, and there may be unique cultural and social factors in Japan that may affect the generalizability of the results of this study to other countries. The authors already comment on the issue of lack of representativeness of the sample in the Japanese context, but I believe a comment on generalizability in the international context (or lack thereof) is needed in the discussion and perhaps the abstract also. Considering this, another important question is why the authors have chosen to publish in an international journal rather than a Japanese language journal – it may actually have more impact in Japan rather than overseas (this is a decision for the authors themselves to consider, however).

5. Table 1 is not very informative, as it is a Table with only one data column. Comparison of demographic and dental characteristics by birth-related factors would be advantageous.

Minor Essential Revisions

1. A surprisingly large number of children were exposed to second-hand smoke at home, but on reading other literature I see that a large proportion of Japanese are smokers. It would be informative to add a reference to explain this to the reader.

Discretionary revisions

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

**Quality of written English:** Needs some language corrections before being published

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

**Declaration of competing interests:**

I declare I have no competing interests.