Reviewer’s report

Title: Dental amalgam and urinary mercury concentrations: a descriptive study

Version: 4 Date: 26 June 2013

Reviewer: Lars Bjorkman

Reviewer’s report:

The authors have responded to most of the comments, but the manuscript still needs some minor essential revisions.

Minor Essential Revisions

1. Abstract: “…and to establish if there is a relationship between urinary mercury concentrations and the number of dental amalgam surfaces”. Since this was planned for another paper this should be omitted.

2. Abstract: It should be mentioned that data are estimates for the Canadian population. By explaining this, it is possible to understand why some estimates should be “interpreted with caution due to high sampling variability”.

3. Discussion (paragraph 8): “The estimates of our study show that a small number of people have urinary mercury concentrations between HBM I and HBM II. For these people a reassessment is indicated. In case the urinary mercury levels remain high, further research is needed to identify, quantify and decrease mercury exposure [11].”

What is “a small number”? Since data are supposed to be representative for the Canadian population this needs to be explained. According to Table 2 and 3 between 1.84 and 2.32 % have urinary mercury concentrations above HBM I and a reassessment is indicated for these. An estimate of the actual number of Canadians with urinary mercury concentrations above HBM I should be given in Table 2 and 3 (see #5).

4. The reference “Mercury exposure and risks from dental amalgam in the US population, post-2000” by Richardson et al (Sci Total Environ. 2011; 409: 4257-68) is of particular relevance and I suggest that it is included and discussed in the Discussion section.

5. Table 2 and 3: Since it is clearly stated that data in the tables are representative for the Canadian general population, an estimate of the actual number of Canadians with urinary mercury concentrations above HBM I should be given in addition to the percentages. It is of limited interest how many in the sample that had values for urinary mercury concentration above HBM I.

6. Check Tables for errors (Table 5: 16-20 Surfaces, All, 95%CI: “-0.10” is obviously not correct)
Level of interest: An article whose findings are important to those with closely related research interests

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