Reviewer's report

Title: Causal assessment of smoking and tooth loss: A systematic review of observational studies

Version: 2 Date: 3 November 2010

Reviewer: Susanna Axelsson

Reviewer's report:

Minor essential revisions
1. The complete search strategy should be included, in the paper or in Appendix.
2. Page 4. Dental caries is generally believed to be the main reason for tooth loss. There may, however, be some variation between countries, and can be commented.
3. Page 6. The sentence "lost teeth due to reasons other than edentulism" is unclear. Edentulism is, to me, a condition, not a cause.
5. Page 10. Results/Number of studies. It is unclear if there is two sets of studies reviewed, one set of 15 which met the inclusion criteria(?) and one set of 18 studies that reported effect size. The following text only deals with the set of 15 studies.
6. Page 10. Characteristics and quality of studies. In the section on definition of tooth loss, only 9 of the 10 case-control studies are accounted for.
7. Page 12. Evaluation of evidence. "limited countries" does that mean "a limited number of countries"?
8. Page 12. I miss a discussion on the problem of equalizing high quality case-control and cohort studies. The cohort study is generally considered a more reliable study design, due to its prospective nature for example.
9. Page 15. Discussion. "Because younger persons are less exposed to tobacco smoke than the elderly", should it be "...have not been exposed to tobacco smoke for a long time"?

Discretionary revisions
1. Page 7. Consider to put the variables in the Data abstraction sector in a table instead.
2. Page 12 Discussion. The discussion is a bit long. Consider omitting the paragraphs on prosthetic treatment (pages 14-15) and the paragraph on dental caries and apical periodontitis (pages 15-16).

Level of interest: An article of importance in its field
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.