Author's response to reviews

Title: Diet, occupational exposure and early asthma incidence among bakers, pastry makers and hairdressers

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Author's response to reviews: see over
Dear Editor,

We thank the reviewer for the in-depth evaluation of our paper. We have made our best to carefully answer your remarks and that of the reviewer, including the new ones. The comments gave us the opportunity to improve our paper and we hope it now meets the expectations of BMC Public health.

Here are our answers.

Sincerely yours,

Thomas Remen
Comments from the editor: we now describe in more detail the case and control selection procedure and criteria (Selection of cases and controls, section of the Material and methods chapter).

Reviewer: Jacek Mazurek

Major Compulsory Revisions

1. The authors report that “among hairdressers, vitamin A and D intakes are greater among cases than among controls” while the results of multivariate analysis showed that BMI and the score of exposure intensity are predictors of OA. The authors should clarify their message.

Thank you for this comment. Our text was indeed confusing. We should have inverted the order of the two sections to make clear that Vitamin intakes are indeed predictors of OA status among hairdressers, including after adjustment for BMI and atopy. This has been corrected.

2. Can some of the findings (e.g., higher intake of vitamin A among hairdressers) be explained by the fact that vitamin A use is promoted for hair growth and hairdressers might tend to use vitamin A more frequently? Additional analyses (or results if they were done) should be conducted.

It is well known that supplementation in vitamin A is preconized for hair growth, but this fact would not only be observed among cases only but among all the hairdressers. We did not change the paper on this point.

3. Although the authors address some limitations of the study (small number of observations) it should be noted that the authors examined the association of nutrition intake history that was collected for the 12 months prior to the medical visit with the OA. However, “Respiratory symptoms had begun between less than 1 year to 7.4 years prior to the medical visits.” Thus, dietary habits might be a result of asthma or they might be not related.

Because nutrition is not considered in the general population, and not even among the medical profession, as a means to control asthma symptoms, we see no reason why diet habits would have been changed since symptoms appeared.

Secondly, it is not recommended to assess diet a long time ago due to possibly large recall bias. The design of our study constrained us to determine the diet-disease linkage using questionnaires.

We now comment this point in the discussion.
4. p.4.l.24 Please explain how the putative OA cases were identified. It is not clear how the OA diagnosis, telephone screening, medical visit, and selection of cases are related. Was the OA diagnosis made at the time of medical visit (March 2009–July 2010) or earlier?

Done. The text has been clarified accordingly (Selection of cases and controls, section of the Material and methods chapter). Telephone interview allowed screening the population for suggestive symptoms of OA. All the subjects with “putative OA” and a sample of the others were invited to perform a medical visit to complete further investigations. With the results of these investigations, the OA diagnosis was explored.

5. 5. p.9.l.16 What variables remained in the model? Were the vitamins included? Please explain how the model was developed.

Done. Two successive analyses were conducted: the first one with putative risk factors excluding nutritional intakes and the second one with nutritional intakes (after adjustment on BMI and atopy, selected at the first step). So, we show that BMI and the score of exposure intensity are predictors of OA among hairdressers (first analysis) and that vitamin A and D intakes are greater among cases than among controls, including after adjustment for confounders (second analysis). Because exposure intensity does not change the effect measures of nutrients intake, it is not a confounder and was not kept in the model.

“The significance level to remain in the model was fixed to 0.20, not to overlook confounding and weak associations.”

The text has been changed accordingly (Statistical analysis of the Material and methods chapter and in the Results chapter, OA and nutrient intakes section).

6. Did the food questionnaire collect information on vitamin supplements (in particular vitamin A, C, D, and E)?

Information on vitamin supplements was not collected because our main objective was vitamins intakes from diet habits and not a study about supplementation in vitamins.

7. Did the authors consider vitamin intake effect modification of the association between OA and sector? If so, please provide results of this assessment.

Our analysis shows that there is an interaction between vitamin A or D intakes and OA according to exposure. Those vitamins intakes are greater among cases than among controls only in hairdressing sector. This is one reason why distinct sectors analysis is relevant.

8. p. 8.l.4. It is not clear what variables were examined/used in developing logistic regression model. What was the basis for selection of specific variables? For example, it is not clear if the authors considered gender (ORs in Table 2 were not adjusted for sex).

As said after question 1, crude odds ratios for nutritional intakes, then odds ratio adjusted for atopy and BMI are presented. Because gender and sector variables are so strongly associated, gender was not retained for the analysis in combination with sector.

The reason why gender is not included in sector specific analysis is now explained in the text (Demographics section of the Results chapter).
9. p.8.l.23 The authors report that they reconstructed work history and collected information on the time sequence of symptoms. It would be nice if the authors report results. How many study participants left their sectors/occupations after/because of developing OA? Have any participants work while having OA? What was the duration of employment to the onset of asthma symptoms?

These points will be presented in detail in another paper in preparation. We do not want to duplicate here this information that requires lengthy description.

Minor Essential Revisions

1. p.3.l.24 please revise the sentence: “The role of antioxidants (vitamins A, C, E) or of vitamin D is still questioned because of methodological weaknesses, and contradictory hypotheses were reported”.

Done (in the text). p.3 - line 23

2. p.4.l.6 “of personal characters” The word “character” refers to 1.qualities of personality; 2.what makes something different; 3.morally good qualities; 4.unusual person; 5.someone in book, movie, etc.; 6.someone’s reputation; 7.letter/number/symbol It appears that the authors should use the word “characteristic” which is defined as: a particular quality or feature that is typical of someone or something: “In the future parents may be able to choose their children’s physical characteristics.” the main/defining/distinguishing characteristic: “A purple rash is one of the distinguishing characteristics of the disease.”

Done.

3. p.5.l.20 “The same two first criteria were used to select controls. The latter…” not clear what criteria are considered; not clear what is “the latter” referring to; please revise.

Redrafted. See p.5 - line 13

4. p.5.l.25 “material” should be “device”?

Done.

5. l.26 “to avoid measurement bias” — were the measurements taken by the same person, in the same conditions, etc.?

Not necessarily by the same person but in the same conditions, with electronic devices. In addition to the two main field investigators (TR and DSA), three medical interns participated at some time to the visits, always in the presence of TR or DSA.

This has been added in the text (Data collection).

6. p.6.l.3 “…or in case of a history of treatment for allergy or desensitisation” — do the authors refer to case-patients selected for the study?

Corrected. See p. 5 - line 26
7. p.7.l.12 “performance” — It’d be nice if the authors use epidemiologic definitions while referring to “reproducibility and validity” of the questionnaire.
Done.

8. p7.l.24 Please check the instructions for authors or http://www.sas.com/presscenter/guidelines.html for referencing data analysis performed with SAS® software.
Done.

9. p.9. ll.2-8 It’d be nice if the ORs in Table 2 with p-values <.05 are clearly marked.
Bolded

10. p.9.l.15 Specify group (i.e., cases) with greater prevalence of symptoms
Done.

11. p.11.l.23 No need to capitalize “odds ratio”
Done.

12. p.12.l.25 There are some studies examining risk for asthma associated with nutrition. The authors may need to be more specific here.
Corrected: “Moreover, for the first time, nutritional factors were assessed as potential risk factors for OA”

Table 1

13. Please check and correct format
Done.

14. Please explain values for age, height, and weight, exposure duration (mean, median?) and their corresponding values in square brackets (SE?)
Done.

15. Because nutrition intake is of the authors’ interest and would be helpful in understanding the study results please provide this information for cases and controls.
We have now added the crude estimates of the vitamin intakes in the OA and nutrient intakes section of the Results chapter.

16. Provide information on the statistical test used
Done.

Table 2

17. Please specify “atopy” (personal vs familial).
Done (personal).
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**Table 3**

18. No need for italicization.

Done.