Author's response to reviews

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

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Version: 2 Date: 21 February 2012

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

We thank the reviewers for the in-depth evaluation of our paper. We have made our best to carefully answer their remarks and yours. 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
**INSERM U 954**

*Nutrition-Génétique-Exposition
aux Risques Environnementaux*

**Reviewer 1**: Gianni Pala

1. **INTRODUCTION**: In the sentence “A general framework ….. or persistence of OA” the possible occurrence of rhinitis should be cited, because it is known that, especially in subject sensitized to HMW-agents, rhinitis is often associated and precedes the onset of OA.

While we agree that rhinitis is often associated with OA when HMW-agents are involved, it is not constantly found and the reference cited here does not mention it.

2. **TABLE 1**: Data on hairdressers but not on bakers and pastry makers have been shown. Is there a specific reason for this? If not, complete data should be shown.

Table 1 presents results for cases and controls according to the occupational sector but exhibits the % of hairdressers only. It means, for instance that if there are 43.4% of hairdressers among controls, that 56.6 % are bakers/pastry makers).

**Reviewer 2**: Jacek Mazurek

**Major Compulsory Revisions**

1. The text should be reviewed and edited to ensure that it is grammatically correct and ready for publication.

Done; we hope it now meets the Journal expectations.

2. Please add the information on the years the data were collected and when the analysis was conducted

Done. See page 5 – line 2

3. Please include all criteria (i.e., dates) for case-patient and control group selection.

Done. See page 5 – line 7 and 20

4. Because the focus is on occupational asthma, please the definition of “occupational asthma” in the manuscript instead of referring to reference #10. The diagnostic criteria should be briefly stated.

Done. See page 5 – line 11 and following

5. Please elaborate and clarify how the history of atopy in the family was assessed.

Done. See page 6 – line 3

6. Please provide more information on the Phadiatop test (validity) and discuss criteria for categorizing subjects as “atopic”.

Done. See page 6 – line 7 and following
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7. Please discuss validity of other questionnaires used in the study.

We used standardized questionnaires that have been used in previous studies and already described in published papers. We now refer the reader to the original papers.

8. Present a timeline of events, i.e., asthma onset and data analysis to better understand the associations between diet (assessed in the 12 months prior to data collection) and OA onset.

We added page 7 - line 8, a mention to the period during which the FFQ describes the diet habits, that is when subjects were investigated. We also added page 8 line 14 a sentence that informs on the range of time elapsed between the OA symptoms first occurred and the study phone interview.

9. It appears that the statement “…nutritional factors could significantly modify host responses to environmental toxicants [17]. An adequate diet may inhibit, arrest, or even reverse the chain of events in toxicity, while a deficient diet could increase persons’ susceptibility to adverse environmental exposures, such as…” should be in quotation marks because it is a verbatim from reference # 17 (Romieu I, Trenga C. Diet and obstructive lung diseases. Epidemiol Rev.2001;23(2):268-87.)

Done. See page 10 – line 2

10. Revise conclusions accordingly.

Done

Minor Essential Revisions

ABSTRACT

11. It is not clear what the authors consider “allergic march of OA”

Done. Replaced by “Natural history”.

12. Please define “influence” in epidemiological terms.

Done. Replaced by “association”.

13. Please define “activity”.

Done. Replaced by “occupational exposure”.

14. Conclusion is weak and not supported by results.

Done. See page 2 – line 20
Introduction


Done. Reference to Bernstein IL and coll (2006).

16. It would be nice if the authors define “immunological OA”.

Done. See page 3 – line 4

17. Please clarify “The allergic march is influenced by multiples determinants”.

It is clarified as follows (page 3 – line 11): This allergic march is influenced by multiples determinants. While occupational exposure plays the key role, with the interplay between the nature (in particular the contrast between high– vs. low molecular weight agents) of agents encountered at the workplace, the intensity of exposure or exposure duration before and after the symptoms onset, other factors related to personal or more general characters contribute also to the onset of the disease, among which are genetic predispositions and possibly nutritional factors [3].

18. Please explain “the nature of agents”.

Done. See above.

19. Please clarify “…factors related to personal or more general characters”.

It is clarified as follows: other factors related to personal or more general characters […] among which are genetic predispositions and possibly nutritional factors. See page 3 – line 15.

20. It is not clear what the authors define as “general asthma”.

Done. “general” was deleted

21. “The large increase in the prevalence of general asthma observed in most developed countries [6] during the last decades is most likely to be a consequence of changing environmental/lifestyle rather than genetic influences.” — one could argue that many other factors could be associated with increased asthma prevalence in children and adults.

Done. See page 3 – line 19

22. Please revise and clarify “…a nested case-control study was set up to assess the combined influence of personal character including nutritional habits, and exposure at work on the incidence of OA during the first years of activity.” Please define “activity”.

Done. See page 4 – line 5
Methods

23. Two references are cited for the study protocol. It is not clear why two references. Reference #10 has not been published.

Done – reference [10] has not been published yet; it is currently under revision.

24. Because the authors focus on occupational asthma, they should provide the definition of “occupational asthma” in the manuscript instead of referring readers to reference #10. The diagnostic criteria should be briefly stated.

Done. See page 5 – line 11

25. Please discuss validity of questionnaires used in the study, including the food frequency questionnaire.

Done. See page 7 – line 12

26. Please clarify “A score of exposure intensity was constructed in view to scale the risk factors associated with work conditions”.

Done. Reworded.

27. “Exposure duration” has not been assessed; the authors created an index of exposure intensity using the number of tasks done per day. The current description is misleading and should be corrected.

Done. See page 6 – line 20

28. Please elaborate – “amount” of what has been estimate in “…to estimate amounts consumed…”

Done. See page 7 – line 17

29. Please provide reference for SAS 9.2.

Done. See page 7 – line 24

30. Please clarify the meaning of “also” in “Because of differences in the mechanisms involved in the onset of OA between the two occupational sectors, the determinants of OA can vary according to the sector. Analysis was also made separately according to sector.”

Done. See page 8 – line 9

31. Please clarify “For nutritional intakes, crude odds ratio and adjusted odds ratio for atopy for potential confounders such as atopy and body mass index were presented”

Done. Reworded. See page 8 – line 7

32. It is not clear how the scores were statistically evaluated.

Done. See page 8 – line 2
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Results

33. It would be nice if the authors briefly describe their study population.
Done. See page 8 – line 18

34. Crude Odds Ratios (ORs) … "OR already defined.
Done.

35. Please correct “Odds Ratios … are exposed… after control for…”
Done. Reworded

36. No quantitative data on vitamin intake are reported.
Done. Reworded. Are reported associations between OA and nutrients intake but not data on vitamin intake.

Discussion

37. The authors report that “vitamin A and D intake are positively related with an increased risk of OA”. However, no risk assessment has been shown. The authors did not present a timeline of events, i.e., it is impossible to evaluate whether asthma onset proceeded reported diet or not. The food frequency questionnaire collected data on consumption during 12 months prior to medical examination. No information was presented on the asthma onset. Thus, the discussion about cause-effect appears to be inappropriate.
Done – The sentence is now clearer : “Our results show that, among hairdressers, vitamin A and D intakes are greater among cases than among controls”. See page 9 – line 21

38. Please clarify “…were found to be related by a high intake of antioxidant”.
The sentence was indeed unclear. It was not really informative and we decided to delete it.

Table 1

39. Please explain the values for age (mean?).
Done. See page 7 – line 26

40. Please explain the meaning of “seniority” and “sector dropout” under “occupation”.
Done. Exposure duration was preferred to “seniority”

41. Please consistently provide units for values reported in the table.
Done.

42. Please explain the interpretation of p-value for smoking.
Answer: There is no difference between cases and controls as regards the smoking status (smoker, past smoker or no smoker)

43. Although units are shown, no data for nutrients intake are presented.
Done. same as 36.
44. It would be nice if the authors add a footnote with a general model description (predictor variables).

Answer: we hope that the footnote † of table 2 stating that the models have been adjusted for atopy and body mass index are clear enough. See page 21 – line 3