Author's response to reviews

Title: Host and environmental predictors of exhaled breath temperature in the elderly

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

Thank you for possibility to further revise our manuscript:

“Host and environmental predictors of exhaled breath temperature in the elderly”

(MS: 3914965961011410).

**Editor’s comments**

The authors have answered to the major revisions requested. Some minor changes are still requested. In particular the following answers given to the reviewers need to be included in the text.

1. Page 4, line 20. We gathered information on current and past use of medication from medical records of the general practice. Comment: Among medications, parameters involved for stepwise regression were statins, anti-hypertensive drugs. No other drugs are considered. An increasing number of medications is able to modify lung function or is implicated in drug-induced lung toxicity. Can you exclude the effects of these medications in the study group?

   We have information on other medication. Please, find a full list of medications in addendum 1 to this letter. We do not have for most of the other medications the power as indicated by the numbers in addendum 1.

   Please add a sentence in the text where you explain why only statins and anti-hypertensive drugs were considered. In addition looking at the addendum 1 the number of subjects who used acetylsalicylic acid is similar. Why did you not examined this group?

   *We added this to the methods on page 6 last paragraph. We added the use of acetylsalicylic acid to the stepwise model but we did not find an association between exhaled breath temperature and the use of acetylsalicylic acid.*

2. Page 2, line 17. Questionnaires were administered by means of a face-to-face interview to assess lifestyle, profession, education, past smoking status, as well as data on age, weight and gender. Comment: No information are provided about occupational status. A lot of toxic air pollutants have been implicated as a cause of lung inflammation. Did you select by profession?
Add a sentence in the text not only in the reviewers responses.

This was added to the methods on page 4, second paragraph. We added blue/white collar worker to the stepwise model but we did not find an association with exhaled breath temperature.

3. What is the role of food intake, coffee, coke and other beverages—a poster in regard to exhaled breath temp. available at the www. describes a relevance—so where the patients fasting?

Kralimarkova et al. observed an effect of food ingestion on the exhaled breath temperature over 60 minutes (Kralimarkova et al. 2012). In our study all subjects had no food intake the 60 minutes prior to the measurement. Prandial status (time since breakfast) was not recorded. Subjects were measured between 9h AM and 12h45 PM which may be associated with prandial status. However we did not observe an association of time of measurement with exhaled breath temperature.

Add a sentence in the text

We changed as suggested: “Kralimarkova et al. [14] observed an effect of food ingestion on the exhaled breath temperature over 60 minutes. In our study all subjects had at least no food intake 60 minutes prior to the measurement.” (Page 6, first paragraph).

4. Does the wind direction have a role in the residential traffic related pollution exposures? Did you measure the pollution or respirable dust which would make sense, if you write about the influence of residential traffic.

Wind direction between residence and road had no major role as it was not related with exhaled breath temperature either directly (P = 0.62) nor in interaction with distance to major road (P ≥ 0.68).

Add a sentence in the text

We added the response to the results section on page 8 first paragraph.

5. Figure 1 Were they any statistically significant differences between these groups. Did authors test for that. Were multiple comparisons taken into account?
Significant differences between these groups were tested and where added to the revised figure.

Please extend the footnote in Figure 1 about significant differences

We added the following footnote to Figure 1: “Exhaled breath temperature as a function of residential exposure to traffic. Mean exhaled breath temperature given in quartiles of traffic indicators, adjusted for gender, age, physical activity, BMI, daily average ambient temperature, asthma and COPD. Vertical lines denote 95% confidence intervals. *indicates quartile of exposure that is significant different (p<0.05) from the other exposure quartiles.”

We are looking forward hearing from you or to respond to additional questions if necessary.

Sincerely Yours,

Esmée Bijnens and Tim Nawrot on behalf of all authors