Reviewer's report

Title: Non-specific physical symptoms in relation to actual distance and perceived proximity to mobile phone base stations and powerlines.

Version: 1 Date: 6 January 2011

Reviewer: Sabine Heinrich

Reviewer's report:

The manuscript reports about a study of the relationship between measured distance as well as perceived proximity to mobile phone base stations and powerlines and non-specific physical symptoms in adults in the Netherlands. The study is of importance because there are not so many epidemiological studies about this issue. The study was well designed and conducted but the presentation of methods and results and the discussion is not fully adequate.

Major compulsory revisions:

The presentation of methods and results is not fully adequate. Detailed comments on this could be found in the part “minor essential revisions”. In my opinion, the missing information is essential for the readers. Especially of importance: prevalence of non-specific symptoms, more information about non-responders, better understanding of table 2.

Concerning the statistical analysis: I’m not a statistician, but wouldn’t it be possible to put all the variables into one model? What are the reasons for having 5 different models?

The discussion is also not fully adequate, important issues are missing or they are described too short. Especially of importance: selection bias, the use of valid exposure values.

Minor essential revisions:

1) Title: Perhaps it could be shortened.

2) Abstract method part: Information about the year of conducting the study and the response rate should be added.

3) Abstract results part: Are the reported associations statistically significant?

4) Background: The background part is very detailed, perhaps it could be shortened and put more emphasis on the issue EMF and non-specific symptoms
instead of environmental problems and non-specific symptoms in general.

5) Background paragraph 4: How is the exact definition of NSPS?

6) Background part: The authors should mention the following epidemiological studies about EMF and non-specific symptoms in the background part of the manuscript:

Subjective symptoms, sleeping problems, and cognitive performance in subjects living near mobile phone base stations.


7) Methods part, selection and recruitment paragraph 1: The authors should check for consistency of the following terms: “environmental problems”, “environmental issues”, “environmental pollutants” etc.. Do the terms mean the same?

8) Methods part, selection and recruitment paragraph 2: Was there a limit in terms of age? Were the participants recruited from data from the registration offices? What was the small reward offered for participation? Some people of the no-response group were interviewed: how they were selected? Please add information about their response rate.

9) Methods part, material paragraph 1: More information about the prevalence of the 16 symptoms is essential. A table with the percentages of the prevalence of each symptom would be nice. Are there differences between male/female, low/high education etc.? The responses concerning the existence of symptoms were based on the period of “last week”. Why the authors didn’t use a symptom scale based on a longer time period? In my opinion symptoms associated with environmental exposure like MCS, IEI-EMF, EHS etc. are chronic, long-term symptoms.

10) Methods part, material paragraph 3: How is the definition of “vicinity”?
meters? 500 meters? Possibly, the compliance between self-reported proximity and geo-coded distance to the next mobile phone base station or powerline is poor because the fact that each participant had a different definition of “vicinity”.

11) Methods part, statistical analysis paragraph 2: I’m not a statistician, but wouldn’t it be possible to put all the variables into one model? What are the reasons for having 5 different models?

12) Results part, paragraph 2: Non-responder-analysis: p values should be added for significant differences. Information about the self-reported environmental sensitivity and psychological factors of non-responders are of interest.

13) Results part: The results presented in figure 2 should be mentioned.

14) Results part, multivariate analysis: p values should be added for statistically significant results.

15) Discussion: The discussion part is very detailed, perhaps it could be shortened.

16) Discussion paragraph 5: I’m not sure if selection bias was only moderate. The response rate was very low in comparison to other epidemiological studies. What reasons could there be for? As mentioned in the method part more information about non-responders would be of interest. Furthermore: Is it possible to compare the symptom prevalences of this study to the results of other studies which also used the 4DSQ scale? (to show if the participants are representative for the general population).

17) Discussion paragraph 6: I agree that distance to the next mobile phone base station is no valid proxy for real exposure, but why the authors used it anyway? The real exposure was not considered! Other sources of exposure like own mobile phone and DECT use were also not considered. The authors should at least discuss this weakness. For some participants it could be possible that their self-reported proximity is a better exposure proxy than the geo-coded distance.

18) Table 1: Number of missing values should be added. What is the definition of low, middle and high education?

19) Table 2: What estimate is here presented? beta? There is an * behind the heading “estimate (95% CI)”, but the * is missing in the legend of the table. For the reader it’s difficult to remember which variables were included in which model. It would be nice to have a footnote for each model with this information. What are the reference categories for education, occupational status etc.

20) Figure 2: The unit of the scale (actual distance to BS) is missing.

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

**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.