Reviewer's report

Title: Personal Endotoxin Exposure in School Children with Asthma

Version: 2 Date: 14 July 2011

Reviewer: Gert Doekes

Reviewer's report:

The authors have adequately responded to most of mine and other reviewers' comments. Just a few items remain, as pointed out below.

A. The size of the various parts of the study, as given by the numbers of samples in the analyses, are now more correctly given, but not on all relevant sites. Given the importance of the abstract, I particularly find the adjusted third line of the abstract M&M confusing. The text suggests that the number of ambient air endotoxin measurements was 339 but it was only 34+63 = 97, of which each was used 3-4 times, namely as a potential predictor of the (339) personal exposure results for 3-4 participants measured on the same day. This might be simply solved by substituting (N=339 person-days etc....) by (N=97 or “N = 34 and 63”).

B. Similarly, the total numbers of indoor and outdoor home air measurements were 109 and 111, not 116 and 113 (Abstract M&M), but this small difference is much less misleading.

C. Table 1 has been accordingly adjusted and improved. Nevertheless I would recommend to add here also in extra columns the numbers of study participants for which each type of data was obtained (particularly in the first 4 lines dealing with endotoxin measurements). The present N's only refer to the much larger numbers of samples. If I understand the text correctly, there were only 13 subjects in Riverside with personal, and 4 (?) with outdoor and indoor measurements; corresponding figures for Whittier would be 32 (personal) and 8 (indoor and outdoor) study participants.

D. My comment on time-activity patterns (Comment 7) seems to be only partly understood, or misinterpreted. Detailed data appear to be available for many study participants, but only averages are given in the Discussion for for time spent in various locations/activities (page 15 lower half), with results that may be expected for a schoolchildren population. Unfortunately, no attempt was undertaken to relate these specific time-activity data per individual and for the days on which personal exposure was measured, to the personally measured endotoxin exposure on the same day. I realize that this would imply a considerable amount of additional stat analyses, but since the data are in principle available it is unsatisfactory to see only a discussion and speculations on this issue, and no results of relevant additional analyses.

E. Comment 16: Unfortunately I cannot agree with the authors' apparent interpretation of (all?) differences between (endotoxin) values for the Riverside
and Whittier substudies – and between correlations and other relations within the substudy datasets – as being only due to ‘regional’ determinants. Without any additional data one might just as well argue that the major explanatory factor would be ‘year’ (2003 versus 2004). The authors argue correctly that an effect of seasonal factors is not likely – but annual variation in weather or other conditions – seems to be overlooked. In this regard it may be of relevance that the median outdoor temperature was several degrees higher, and the RH considerably lower in Riverside 2003 than in Whittier 2004. Or can these differences also be ascribed to spatial, more than annual variation? (This can probably be checked via meteo databases?)

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

None of these applicable.