

Reviewer's report

Title: The Effect of Ambient Air Pollution on Respiratory Health of School Children: a Panel Study

Version: 1 **Date:** 5 April 2007

Reviewer: Russell Lopez

Reviewer's report:

General

This is a short longitudinal study of asthma symptoms and respiratory status of older adolescents in Christchurch, NZ. It combined a variety of biomarkers, asthma diaries and other measures with indoor and outdoor air quality measures.

This is an important study given one of the major ongoing issues in the worldwide epidemic of asthma in developing countries: why has asthma increased even as most environmental pollution parameters decreased? Air is cleaner, even as disease rates rise. This study's focus on particulates produced by burning wood may provide evidence that provides guidance on this issue.

Overall, the study is sound, I had a number of questions:

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. What is the overall prevalence of asthma in NZ? Is this a major national health issue in this country? How did the asthma rate in the study population compare to this national rate?
2. Are the researchers sure none of the subjects smoked? Did they exclude any smokers from the study?
3. Related to the above question: Were any students excluded from the study? What was the potential universe of subjects?
4. Were all these students of European ancestry? Were they primarily from wealthy backgrounds? Poor? Could this have affected the results or the generalizability of the results? There should be a greater description of the study sample.
5. The authors cite some justification for using urinalysis, but for PAH exposures, not particulates. While there are obvious connections between the two, they are not synonymous. Why use urinalysis for particulates?
6. Is the use of EBC justifiable in this context? Was there sufficient power in the study to find an association?
7. Given that the paper spends a lot of time on the low association between the overall air pollution levels and the biomarkers, there should be greater explanation on how these markers are derived and their utility in this kind of research.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.