

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form ([see an example](#)) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Associations between environmental exposures and asthma control and exacerbations in young children – a systematic review
<b>AUTHORS</b>	Dick, Smita; Doust, Emma; Cowie, Hilary; Ayres, Jon; Turner, Stephen

### VERSION 1 - REVIEW

<b>REVIEWER</b>	Anna Bergström, Associate Professor  Institute of Environmental Medicine Karilinska Institutet Sweden
<b>REVIEW RETURNED</b>	27-Sep-2013

<b>GENERAL COMMENTS</b>	<p>The manuscript “Associations between environmental exposures and asthma control and exacerbations in young children – a systematic review” by Smita et al provides a nice summary of the literature on environmental exposures and asthma control and exacerbations in children below 9 years of age. My overall impression is that this is a well written and thoroughly conducted manuscript, and I appreciate the amount of work put into the manuscript. The authors state the background for which exposures to include etc. I have, however, two comments:</p> <p>1) In the results section, the authors should describe how asthma was defined in the included studies. A column called for example “definition of asthma” could also be included in the appended table where the literature is summarized. In the discussion section, the authors should reflect on the meaning of how asthma was defined in the different studies.</p> <p>2) In the results section, the authors should describe how asthma control and exacerbations was defined and measured in the studies. In the column called “Causation/Exacerbation” information could also be added on how this information was collected, for example via parental questionnaires. In the discussions section, the authors should reflect on what this may mean for the interpretation of the results.</p> <p>Overall, I enjoyed reading this summary of the literature and thank you for letting me review this manuscript.</p>
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<b>REVIEWER</b>	Meyer Kattan MD, Director Pediatric Pulmonary Division, Columbia University Medical Center, New York, NY USA
<b>REVIEW RETURNED</b>	02-Oct-2013

<b>GENERAL COMMENTS</b>	<p>This study is a systematic review of the literature describing associations between environmental exposures and asthma symptoms and exacerbations in children. The study confirms a link between environmental irritant and allergen exposures with asthma symptoms and exacerbations in young children. The search strategy for the review as described seems adequate but a number of studies come to mind that would likely meet inclusion criteria seem to be missing (e.g., J Allergy Clin Immunol 2010;125:593; JACI 2008;121:1133; JACI 2007;120:618; J Respir Crit Care Med 2006;173:297). If these studies do in fact warrant inclusion according to the authors' inclusion criteria, I would then question the completeness of the search strategy.</p> <p>Contrary to what is said on page 13, last 2 sentences first paragraph, the Morgan paper (ref 20) demonstrated that a multifaceted intervention resulted in reduced levels and that the reduction was associated with a decrease in symptoms.</p>
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<b>REVIEWER</b>	Lili Ding Cincinnati Children's Hospital Medical Center
<b>REVIEW RETURNED</b>	04-Oct-2013

<b>GENERAL COMMENTS</b>	<p>The objective of the study was to conduct a literature review of associations between environmental exposures and asthma symptoms and exacerbations in children up to nine years old.</p> <ol style="list-style-type: none"> <li>1. Only articles published before July 2011 were included in the review. A more up-to-date review is needed.</li> <li>2. The author stated that their focus is asthma in young children aged up to nine years old, however, the review included studies where the mean age of asthma outcome was <math>\leq 9</math> years, which indicates that the selected studies included participants of older than 9 years. Is it more appropriate to say the focus is childhood asthma without limited to children of 9 y.o. or younger?</li> <li>3. Why is it particularly important to study the associations between environmental exposures and asthma among young children <math>\leq 9</math> y.o.? How do findings in this age group differ from those in other age groups?</li> <li>4. Quality of the included papers is a concern by ratings in supplementary table II.       <ol style="list-style-type: none"> <li>a. Please explain more of the rating for those not familiar with it. What consists of a weak, moderate, or good rating? How was the global rating derived?</li> <li>b. Conclusions from studies with poor overall quality should be marked. Could also consider exclusion of papers with low quality assessment.</li> </ol> </li> <li>5. Supplementary Table I, is it possible to include the title of the studies. I think it is the most informative piece of information of an article.</li> <li>6. Results section in abstract stated that several environmental exposures had a modest magnitude of effect (odds ratios between 2 and 3) but didn't say on what outcomes. I understand that the results were from studies where different outcomes were reported. But still, it is important to make the conclusion as clear as possible.</li> </ol>
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## VERSION 1 – AUTHOR RESPONSE

Reviewer Name Anna Bergström, Associate Professor  
Institution and Country Institute of Environmental Medicine  
Karilinska Institutet  
Sweden

Please state any competing interests or state 'None declared': None Declared

The manuscript "Associations between environmental exposures and asthma control and exacerbations in young children – a systematic review" by Smita et al provides a nice summary of the literature on environmental exposures and asthma control and exacerbations in children below 9 years of age. My overall impression is that this is a well written and thoroughly conducted manuscript, and I appreciate the amount of work put into the manuscript. The authors state the background for which exposures to include etc. I have, however, two comments:

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Overall, I enjoyed reading this summary of the literature and thank you for letting me review this manuscript.

Reviewer Name Meyer Kattan MD, Director Pediatric Pulmonary Division,  
Institution and Country Columbia University Medical Center, New York, NY USA  
Please state any competing interests or state 'None declared': None declared

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Contrary to what is said on page 13, last 2 sentences first paragraph, the Morgan paper (ref 20) demonstrated that a multifaceted intervention resulted in reduced levels and that the reduction was associated with a decrease in symptoms.

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Reviewer Name Lili Ding  
Institution and Country Cincinnati Children's Hospital Medical Center  
Cincinnati, OH 45220, USA

Please state any competing interests or state 'None declared': None declared

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### VERSION 2 – REVIEW

<b>REVIEWER</b>	Meyer Kattan Columbia University Medical Center New York, NY United States of America
<b>REVIEW RETURNED</b>	29-Dec-2013

<b>GENERAL COMMENTS</b>	The objective of this paper was to include studies in populations of children where MEAN age was no more than 9 years. The first sentence of the Discussion erroneously states that this is the first systematic review of the literature describing associations between environmental exposures and asthma symptoms and/or exacerbations in children age 9 years or younger. This discrepancy in age is again repeated in the second paragraph of the Discussion: Third, our age limit was up to nine years and our review will not have included papers describing the effect of exposures on older children. The third paragraph of the Discussion misrepresents the findings of reference 27 (Morgan et al 2004). This is a multifaceted intervention demonstrated a reduction in symptoms and improved asthma control. In light of this paper, this paragraph and the following paragraph need to be revised. The authors had revised their description of the results of this paper earlier in the manuscript.
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## VERSION 2 – AUTHOR RESPONSE

We thank the three reviewers for carefully going over this revised manuscript and for Prof Kattan drawing our attention to these two errors. We have amended the first and second sentence of the discussion and also the abstract and "strengths and limitations" to clarify that the mean age was up to nine years. We have also amended the third paragraph to accurately reflect the findings of the Morgan study.