

***Interactive comment on “Relationship between particulate matter and childhood asthma – basis of a future warning system for Central Phoenix” by R. Dimitrova et al.***

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Yes, we agree with your comment. It might be expected that the rate of the effect (log odds) would decrease for a sufficiently large mg/m<sup>3</sup>. A greater rate for other regions of mg/m<sup>3</sup> would also not be unreasonable. The methodology applied here can incorporate such model forms expressed as a function of PM<sub>10</sub>. To capture the general relationship, we used a simple linear model over the range of PM<sub>10</sub> considered here, and this allowed for a simple summary of the effect. We would not expect the model to apply outside the limits of the current data. We discussed a potentially more informative model, that might better handle a wider range of mg/m<sup>3</sup>, but the team's objective was

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a more general summary of the effect with a focus only over the observed, mid mg/m<sup>3</sup>. Models sometimes use a simpler assumption to summarize over the observed data, even though endpoints or extrapolations are not expected to be handled well. Your comment raises an interesting issue for follow up in which a better specified model might be used to study more details of the rate change of the effect over the range of mg/m<sup>3</sup>.

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