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Comment on "Effect of exposure to ambient PM_{2.5} pollution on the risk of respiratory tract diseases: a meta-analysis of cohort studies"

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Comment on "Effect of exposure to ambient PM_{2.5} pollution on the risk of respiratory tract diseases: a meta-analysis of cohort studies"

Dear Editor,

We reviewed the paper by Liu *et al*^[1], as part of an umbrella review on PM_{2.5} and the incidence of respiratory outcomes. We determined that the authors did not account for the PM_{2.5} increments based upon which primary studies reported their results. For instance, Young *et al*^[2] reported an odds ratio (OR) of 1.20 (95% confidence interval [CI]: 0.99, 1.46) per 3.6 µg/m³ PM_{2.5} for incident asthma. Likewise, Bennett *et al*^[3] reported an OR of 1.08 (95% CI: 0.79, 1.48) per 1 µg/m³ PM_{2.5} for incident wheezing. Liu *et al*^[1] simply pooled these and other results "as is", ignoring the differing PM_{2.5} increments, meaning that their pooled estimates are of limited value.

Results from primary studies should be standardized to the same pollutant increment prior to pooling. In our opinion, this could have been detected at the time of peer review, since the authors did not report the PM_{2.5} increment upon which their pooled estimates were based. While we did not examine their findings for other outcomes, we suspect that the same error applies.

We have identified this issue in other recent systematic reviews, including Pranata *et al*^[4], Zhao *et al*^[5], Han *et al*^[6], and Zhang *et al*^[7].

Yours Sincerely,

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