

**Statement of Deborah Shprentz
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on
CASAC's Draft Letters regarding the
Second Draft Integrated Science Assessment for Nitrogen Dioxide
and the
Risk and Exposure Planning Document

Clean Air Scientific Advisory Committee (CASAC) Teleconference
August 13, 2015**

I would like to offer several suggestions for strengthening CASAC's draft letter regarding the review of the Integrated Science Assessment (ISA) for Nitrogen Dioxide, on behalf of the American Lung Association.

In the attempt to craft a consensus letter from the disparate comments of individual committee members, several important points are not clearly stated.

First, CASAC should make explicit its concurrence with the ISA's conclusion that short-term exposures to NO₂ are causal for respiratory effects.

The major advance in this ISA is the multi-disciplinary integrative nature of the assessment. It is through the integration of the evidence that a strong causal conclusion has been reached.

We strongly disagree with the suggestion in the draft letter that the causal determination for short-term respiratory effects should rest solely on the controlled human exposure studies.

Most of the new studies evaluated in this review are epidemiological studies.

The letter as drafted is dismissive of the epidemiological findings with respect to short-term exposures (Page 2, lines 30-42). This language should be eliminated or tempered.

Secondly, the letter needs to state firmly the Committee's concurrence with the "likely causal" finding for respiratory effects of long-term NO_x exposures.

The draft letter on the REA states the CASAC agrees with the assessment in the ISA that the evidence for long-term exposure to NO_x contributing to the development of respiratory conditions such as asthma is likely to be causal.

This statement needs to be brought forward into the letter commenting on the ISA.

Third, the CASAC letter should emphasize the ISA findings of adverse effects at levels at or below the current standards.

The 2015 meta-analysis by Brown¹ found that 70 percent of the individuals with asthma exposed to NO₂ at rest experienced increases in airway responsiveness following one-hour exposures to 100 ppb, the level of the current standard.

As a number of individual reviewers have noted, the ISA has made a compelling case that one-hour exposures to 100 ppb NO₂ can increase the risk of exacerbation of asthma.

The ISA also finds that short-term increases in NO₂ also increase the risk of emergency department visits and hospital admissions in people with asthma, at exposures well below the current 1-hour standard of 100 ppb. These findings are robust to the inclusion of other air pollutants.

CASAC should specifically comment on these findings in its letter on the ISA because of their relevance to the Exposure Assessment and the NAAQS review process.

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With respect to the draft letter reviewing EPA's Risk and Exposure Assessment Planning Document, we would like to offer this comment.

Preliminary data from the near-road monitoring network shows very few areas with concentrations above 100 ppb, suggesting that an exposure analysis of benchmarks from 100 to 400 ppb would not be very informative.

Given the ISA's findings of adverse respiratory effects at or below the level of the current short-term standard, it is critical that any exposure assessment evaluate exposures at concentrations below 100 ppb.

CASAC's draft letter makes this point in response to charge question 4. The main letter should emphasize the need for inclusion of lower cut points in any exposure assessment.

Secondly, it would be great if CASAC could consider recommending that EPA review the adequacy of the current monitoring network for NO₂. A few years ago, EPA allowed states to decommission many of their NO₂ monitors because those monitors were not registering exceedances of the annual standard.

¹ Brown JS. Nitrogen dioxide exposure and airway responsiveness in individuals with asthma. *Inhal Toxicol* 2015; 27 (1): 1-14

Now there is a new one-hour standard, and the possibility of revisions to the one-hour standard as well as the annual average standard in light of new health information. Without a robust monitoring network, it is impossible to conduct health studies and to measure compliance with a revised NAAQS.