Do Short-Term Changes in Outdoor Air Pollution Adversely Impact Adults With OSA Using Positive Airway Pressure Therapy?

### Study Design

Retrospective, longitudinal, observational study in Canada conducted from 2013 to 2017 evaluated:

- Daily positive airway pressure (PAP) adherence tracking with apnea-hypopnea index (AHI<sub>Flow</sub>)
- Air Quality Health Index (AQHI)
- Concentrations of ozone, fine particulate matter, nitrogen dioxide, carbon monoxide, sulfur dioxide

### Results

8,148 adults analyzed with a **median 89 days** (IQR 29 to 302) where PAP use >4 hours

- **Air pollution** was associated with a statistically significant
- **AHI<sub>Flow</sub>**

The largest effect was for the AQHI: an increase in AHI<sub>Flow</sub> while comparing highest vs lowest quartiles was 0.07/hour (95% CI, 0.05–0.10)

There is a modest but statistically significant increase in AHI associated with an increase in air pollution concentrations. Ambient air pollution may adversely affect control of sleep apnea on PAP therapy.

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