

## Air pollution linked to increased risk for childhood asthma



Early-life air pollution is associated with an increased risk for asthma in childhood, according to a [study](#) published online Feb. 28, 2024 in *JAMA Network Open*.

Antonella Zanobetti, Ph.D., from the Harvard T.H. Chan School of Public Health in Boston, and colleagues examined early-life exposure to fine particulate matter (PM<sub>2.5</sub>) and nitrogen dioxide (NO<sub>2</sub>) air pollution and asthma risk by early and middle childhood. Birth cohorts were recruited between 1987 and 2007, and children were followed through age 11 years.

Data were included for 5,279 children; 24.7 and 18.1 percent had asthma by 11 and 4 years of age, respectively. The researchers found that during the first three years of life, mean values of pollutants were associated with the incidence of asthma. Among children younger than 5 years and younger than 12 years, a one interquartile range (IQR) increase in NO<sub>2</sub> was associated with increased asthma incidence (hazard ratios, 1.25 and 1.22, respectively).

Corresponding increases in asthma incidence were seen in association with a one IQR increase in PM<sub>2.5</sub> (hazard ratios, 1.31 and 1.23, respectively). Among mothers with less than a high school diploma, Black children, communities with fewer child opportunities, and census tracts with a higher-percentage Black population and population density, associations of PM<sub>2.5</sub> or NO<sub>2</sub> with asthma were increased.

"Air pollution continues to be a global burden with serious consequences on childhood health," the authors write. "Reducing asthma risk in the United States requires regulation and reduction of air pollution combined with creation of greater environmental, educational, and health equity at a community level."

**More information:** Antonella Zanobetti et al, Early-Life Exposure to Air Pollution and Childhood Asthma Cumulative Incidence in the ECHO CREW Consortium, *JAMA Network Open* (2024). DOI: [10.1001/jamanetworkopen.2024.0535](https://doi.org/10.1001/jamanetworkopen.2024.0535)

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