

Study shows association between better neighborhood conditions and lower childhood asthma rates

August 28 2023



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Living in a neighborhood with better access to resources such as high-quality housing, healthy food, parks and playgrounds, and clean air

during the early stages of childhood was associated with lower asthma incidence in a new study from NIH's Environmental influences on Child Health Outcomes (ECHO) Program.

Children born in high-opportunity neighborhoods had an asthma incidence rate of 23.3 cases per 1,000 children, while those born in very low and low-opportunity neighborhoods had rates of 35.3 per 1,000 and 27 per 1,000, respectively. This collaborative research has been published in *JAMA Pediatrics*.

"Understanding neighborhood conditions could help researchers identify [vulnerable children](#) who are at high risk for developing asthma," said study author Izzuddin Aris, Ph.D., of Harvard Medical School. "This information can also inform efforts by policymakers, researchers, and [community groups](#) to improve children's health and foster equity across neighborhoods."

Researchers in this study measured neighborhood conditions using the Child Opportunity Index and the Social Vulnerability Index, which link residential addresses at birth, infancy (age 0.5–1.5 years), and [early childhood](#) (age 2.0–4.8 years) to census-tract data about the opportunities and resources available in the surrounding neighborhood.

Only the Child Opportunity Index, which measures neighborhood resources and conditions deemed essential for healthy child development, showed significant associations with childhood asthma incidence. The Social Vulnerability Index measures factors that make a community more vulnerable in the aftermath of natural or human-caused disasters.

This study used data from 10,516 children at 46 research sites participating in ECHO, each having at least one residential address from birth and a parent or caregiver report of a physician's diagnosis of

asthma. These differences in the incidence of asthma persisted even after controlling for sociodemographic characteristics, parental asthma history, and the number of births a mother had.

"These findings emphasize the importance of investigating whether investing in early-life health and environmental or social and [economic resources](#) can promote health equity in pediatric asthma," said Dr. Aris.

More information: Neighborhood Opportunity and Vulnerability and Incident Asthma Among Children, *JAMA Pediatrics* (2023). [DOI: 10.1001/jamapediatrics.2023.3133](#)

Provided by Duke Clinical Research Institute

Citation: Study shows association between better neighborhood conditions and lower childhood asthma rates (2023, August 28) retrieved 13 May 2024 from <https://medicalxpress.com/news/2023-08-association-neighborhood-conditions-childhood-asthma.html>

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