

# Poverty, race drive asthma rates more than city living

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It was the day after Mother's Day in 2012 when Faith Walker ran into her East Baltimore house unable to breathe.

Her mother, Tyishia Walker, who suffers from asthma and has an older daughter with the disease, knew exactly what was wrong: Faith also had the chronic lung condition.

"I'm sure it's from living in the city," said Tyishia Walker." We have more rats, more mice. The house is old and moldy. I believe it makes a big difference."

For the past 50 years, scientists also believed urban living led to higher rates of asthma in children. But new research from Johns Hopkins Children's Center disputes the notion that geography alone is a major risk factor for the disease and its telltale coughing, wheezing and breathlessness.

Up to 20 percent of children in Baltimore City have asthma, compared with the national average of 9.4 percent, according to government data. There are, however, pockets around the country in suburban and rural areas where the prevalence of asthma is just as high, according to the study, recently published in the *Journal of Allergy and Clinical Immunology*.

The common links among 23,000 patient records reviewed from around the country appeared to be race, ethnicity and income, said Dr. Corinne

Keet, a pediatric allergy and asthma specialist at Hopkins and the study's lead investigator.

Public health advocates say the information could impact how health departments allocate resources in suburban and rural areas, ensuring that at-risk kids outside of cities are screened and treated.

Key risk factors for asthma include roach and other pest allergens, indoor smoke, air pollution and premature births, but such issues are not exclusive to cities. Poor people don't necessarily escape poverty by moving out of inner cities, and those who are African-American or Puerto Rican, specifically, don't escape the genes that may be at play.

Nationally, about 17 percent of black children and 20 percent of Puerto Rican children have asthma, compared with 10 percent of white children and 8 percent of Asian children, government data show.

"When we did the study we were expecting the prevalence to be higher in inner cities," Keet said. "When we looked more closely at poor areas in cities and poor areas not in cities, we found there wasn't a big difference."

Keet said more study is needed, but already some policy experts and doctors say the research may help public health officials in directing resources outside of urban areas.

"The implications are clear," said Dr. Cary Sennett, president and CEO of the advocacy group Allergy and Asthma Foundation of America. "Asthma is not a disease of the inner city, but affects children everywhere and, disproportionately, those who are living in poverty. In the wealthiest country in the world, we have much to do to address the problem of asthma in those who are most vulnerable - wherever they live."

Poor families not only deal with more cases of asthma, he said, but more severe episodes because they are less able to afford interventions such as home assessments and remediation of "triggers," such as mold, insect and rodent feces, and others.

State data show that many poor African-American children in Baltimore do have poorly controlled asthma. They have the highest rates of emergency visits and hospitalization in Maryland, said Dr. Mary Beth E. Bollinger, an associate professor of pediatrics at the University of Maryland School of Medicine and a pediatric allergy and asthma specialist.

She is the medical director of the Breathmobile, which has been providing free care to high-risk Baltimore kids since 2002.

"This study shows that we need to not only continue to provide effective preventive care to the high-risk children in Baltimore City, but further study the need to expand these services to other communities as well," Bollinger said.

The Hopkins researchers did not assess which cases were more severe, though they plan to study that next. Another ongoing Hopkins study is assessing if home allergen management, specifically control of mice and their droppings, improves [asthma symptoms](#) in children. Mice are considered a top trigger of attacks.

Faith Walker, now 7, wasn't a participant in the urban asthma study, but she is participating in the mouse research. She is allergic to mold, pollen, cut grass and varmint feces, and her mother said it's been tough to control all of that, though she tries. Research assistants say Faith has the cleanest house among the study participants.

Doctors tested Faith for allergies after she was brought to the emergency

room that day almost two years ago when she had her first serious attack.

Tyishia Walker had long suspected Faith had asthma because she was always coughing. When Faith ran in the house struggling to breathe, Walker gave her a puff of her own medicine, but when that didn't work, she called for help and the girl spent two days in the hospital.

Faith's [asthma](#) is now under control with daily treatments, but Walker still watches over her, keeping her home from school some days and reining in aggressive play.

Walker said Faith isn't interested in slowing down because of her disease. She runs everywhere, despite her mother's objections, and she's trying out for a spot in a class production of "The Wizard of Oz." She likes school so much she sometimes lies about having trouble breathing so she can go.

One recent day at Hopkins, where her breathing will be assessed throughout the year, it appeared that Faith was doing better. She took breathing tests, spent time on a nebulizer that administers vaporized medicine, and was retested.

Walker, 37 and living on a limited income from disability payments, hopes to find a way to move to Pennsylvania or somewhere that has more modern houses, fewer mouse droppings and lower pollution.

"When she was struggling so hard to breath, that scared me," she said. "I'm limited in the money I can spend on rent. But I don't want to live in Baltimore anymore."

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