Asthma rates and where you live

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A new study shows how neighborhood characteristics play a significant role in childhood asthma.

Neighborhoods with restaurants, entertainment, cultural facilities and ethnic diversity have lower asthma rates in the city of Chicago than neighborhoods where residents are less likely to move, and where there are more churches and not-for-profit facilities.

Published in the spring 2009 issue of the Journal of Allergy and Clinical Immunology, the two-year study led by Ruchi Gupta, MD, MPH, a researcher at Children's Memorial Hospital and associate professor of pediatrics at Northwestern University Feinberg School of Medicine, showed that neighborhoods with more community vitality, specifically economic potential, community amenities and social capital had lower asthma rates. The study focused on 287 Chicago neighborhoods, where nearly 50,000 children grades K-8 were screened for asthma. Asthma is the leading chronic childhood illness, affecting more than 9 million children nationwide. Chicago has twice the national average asthma mortality rate.

"Previous studies showed that neighborhoods right next to each other with similar racial makeup had very different asthma rates; we wanted to see what else was going on in each neighborhood to cause such a disparity," said Gupta. "So we looked at specific factors in each neighborhood."

Ethnically diverse communities with greater potential for economic

development that were civically engaged, meaning that there were high percentages of registered voters had low asthma rates while stable communities, defined as communities where residents were less likely to move, with more social interaction had higher asthma rates. Although it is not entirely clear how these factors affect health outcomes, previous research has shown that asthma and other chronic illnesses of childhood are associated with poverty, which may explain why communities with low asthma rates had a greater capacity for economic growth. Researchers suspect that the association between neighborhood stability and asthma may indicate that homes in which residents are less likely to move receive less frequent and thorough cleanings, leading to an accumulation of indoor pollutants known to trigger asthma. Similarly, the association of higher interaction potential and increased asthma may signify overcrowding, which also leads to increased indoor pollutants.

Besides community influence, other factors that affect the rate of childhood asthma include income and education, housing problems with sensitivities to cockroaches, dust mites, mice and rats, exposure to air pollution and individual factors. A collaboration of many factors may ultimately cause asthma.

"With these insights, we are better equipped to develop more effective interventions to help reduce asthma in children living in urban environments," said Gupta.

Information on the neighborhoods was gathered from the Metro Chicago Information Center. Gupta collaborated on this study with Xingyou Zhang, PhD, Lisa K Sharp, PhD, John J Shannon, MD, and Kevin B Weiss, MD, MPH. In a currently ongoing study, Gupta is further investigating the true importance of these protective factors by talking to and surveying residents in a Chicago neighborhood with a high childhood asthma rate.

Source: Children's Memorial Hospital