



Asthma in African American Children

Ober C., McKennan C.G., Magnaye K.M., Altman M.C., Washington C., Martinez F., et al. "Expression Quantitative Trait Locus (eQTL) Fine Mapping of the 17q12-21 Asthma Locus in African American Children: A Cross-Sectional Study." *The Lancet Respiratory Medicine*, May 1, 2021. Southwest Environmental Health Sciences Center. Summary by Devin Ritter.

In the past 10 years, 8% of children in the US have suffered from asthma, making it the most common childhood disease. People in the US with African ancestry have dealt with more severe and more widespread cases of asthma. It is important to understand why there are increased cases of asthma in African American children so we can begin finding possible solutions or treatments. To determine possible causes, researchers looked at specific locations within the genetic material of their observational subjects.

Knowing that people with African ancestry are at higher risk of developing severe asthma is important, because it allows higher-risk children to receive the attention and treatment they need when they are young. This study was valuable because it included experiments on different ethnicities. This allowed researchers to draw accurate conclusions about what causes asthma among these groups of people.

In this study, researchers tested the genetic variations of chromosome 17q12-21 in people with African ancestry and people with European ancestry. They focused on finding out which specific genetic variations within this chromosome were most commonly found in people with asthma. It is known that asthma in young children is linked to chromosome 17q12-21.

Certain genes within this chromosome are speculated to be the leading cause of asthma, so researchers wanted to find out which specific genes were responsible. Experiments were used to pinpoint these specific genetic variations in people with African ancestry and people with European ancestry. These findings are valuable because they pinpoint a specific location in the body for asthma treatment in children.

Study results found that the protein Gasdermin B (GSDMB) is likely one major cause of asthma in African American children. GSDMB causes a cell to die when it encounters pathogens inside that cell. Although we know that this protein is linked to asthma, we do not yet know why this is the case. GSDMB is mostly found in bronchial lung tissue. Other genes within chromosome 17q12-21 likely contribute to asthma in children, although this study did not explore them further.

Meet the researchers: Dr. Martinez

Dr. Fernando Martinez is a professor at the University of Arizona, Department of Pediatrics. He specializes in Pulmonology, Allergy and Immunology.

Links: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7335429/>



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