MedicalXpress

Race plays a role in children's food allergies

January 26 2021, by Nancy Difiore

Credit: Pixabay/CC0 Public Domain

Black children have significantly higher rates of shellfish and fish allergies than white children, confirming that race plays an important role in how children are affected by food allergies, researchers at Rush

University Medical Center have found. Results of the study were published in the February issue of the *Journal of Allergy and Clinical Immunology: In Practice*.

"Food allergy is a common condition in the U.S., and we know from our previous research that there are important differences between African-American and white children with food allergy, but there is so much we need to know to be able to help our patients from minority groups," said Dr. Mahboobeh Mahdavinia, who is lead author of the study and chief of the Division of Allergy and Immunology at the Medical Center.

The large, multicenter national trial, called Food Allergy Management and Outcomes Related to White and African American Racial Differences (FORWARD), aimed to carefully investigate disparities between Black and white children in food allergy outcomes.

"In this current paper, our goal was to understand whether children from different races are allergic to similar foods, or if there is a difference based on their racial background," Mahdavinia said.

Food allergy is major public health concern, affecting 8% of children in the United States, with an estimated economic burden of $24.8 billion annually. In people with food allergies, a tiny amount of food can trigger signs and symptoms such as hives, breathing and digestive problems or anaphylaxis (a severe, potentially fatal allergic reaction).

"It has been well documented that the prevalence of food allergy has been increasing in children in the U.S., but little data and research exists about its frequency, severity and outcomes among minority races and ethnicities," Mahdavinia said.

She and her colleagues conducted a large study of children ranging in age from birth to 12 years old who were diagnosed with food allergy and

were seen in allergy/immunology clinics at four urban tertiary care centers in the U.S., which included Rush University Medical Center, Ann & Robert H. Lurie Children's Hospital of Chicago, Cincinnati Children's Hospital Medical Center and Children's National Hospital, located in Washington, DC. The study included 664 children and was composed of 36 percent Black and 64 percent non-Hispanic white children.

Cockroach exposure may lead to shellfish allergy

The study found that the Black children were more likely to have an allergy to shellfish and fin fish, plus higher odds of having a wheat allergy, compared to the non-Hispanic white children. Researchers suspect that shellfish allergy may occur from inhaling tropomyosin, the protein of two common household allergens, dust mite and cockroach, which share 80% of amino acid sequencing with shellfish.

Cockroach exposure may be the mechanism by which children develop a shellfish allergy, because higher levels of cockroach allergen have been found in lower socioeconomic, inner-city neighborhoods where many Black children live. Tropomyosin, which regulates muscle contraction and relaxation, also has been found in fin fish.

While scientists are still trying to figure out the exact mechanism of the allergy, the findings provide further insight into the importance of reducing Black children's exposure to cockroaches.

"This information can help us care for not only a child's food allergy, but all of their allergic diseases, including asthma, allergic rhinitis and atopic dermatitis," said Susan Fox, PA-C, MMS, who is a co-author of the study and an allergy and immunology physician assistant at Rush University Medical Center.

In this study, the Black children with food allergies were more likely to have asthma. The study showed that children with a shellfish allergy were more likely to have more severe asthma, while other food allergens were not associated with a diagnosis of asthma.

"A major concern is that there is a higher prevalence of asthma in African-American children with food allergies when compared with white children with food allergies. Approximately 70% of fatal food anaphylaxis is accompanied by asthma. African-American children are at a two- to threefold risk of fatal anaphylaxis compared to white children," Mahdavinia said. "By knowing this information, it can identify are most at risk patients.

"We need to conduct further research to identify food allergies and food sensitivities among all races and ethnicities so we can develop culturally-sensitive and effective educational programs to improve food allergy outcomes for all children," Mahdavinia added.

Provided by Rush University Medical Center

Citation: Race plays a role in children's food allergies (2021, January 26) retrieved 23 April 2024 from https://medicalxpress.com/news/2021-01-role-children-food-allergies.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.