

Children with food allergies predisposed to asthma, rhinitis

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Children with a history of food allergy have a high risk of developing asthma and allergic rhinitis during childhood as well. The risk increases with the number of food allergies a child might have, say researchers from [The Children's Hospital of Philadelphia](#) (CHOP) in a new study recently published in *BMC Pediatrics*.

"Eczema, asthma and [allergic rhinitis](#) are among the most common childhood medical conditions in the U.S.," said lead researcher David A. Hill, MD, PhD, an allergy and immunology fellow with an interest in food allergy. "Disease [rates](#) for these conditions seem to be changing, prompting a need for more information and surveillance." Compared with previous reports, this study found higher rates of asthma and lower rates of eczema, a skin inflammation.

In Philadelphia, asthma rates are among the highest in the nation, affecting one in five children. In this study, the researchers found an asthma prevalence rate of 21.8 percent.

The study is a retrospective analysis of the electronic health records of more than one million urban and suburban children in the CHOP Care Network from 2001 to 2015. The researchers divided the records into two cohorts: a closed-birth cohort of 29,662 children, followed continuously for their first five years of life, and a cross-sectional cohort of 333,200 children and adolescents, followed for at least 12 months. The patients were 48 percent white and 40 percent black.

While prior studies have suggested patients with food allergies are at increased risk of developing asthma, those analyses were small and limited. This study is the largest to date to examine the characteristics of healthcare provider-diagnosed eczema, asthma, allergic rhinitis and food allergy in a pediatric primary care population.

In the closed-birth cohort, the incidence of at least one food allergy between birth and age five was 8 percent, with the peak age of diagnosis between 12 and 17 months of age. The overall prevalence of at least one food allergy for the large cross-sectional cohort was 6.7 percent, in line with previously published rates. However, allergies to specific foods diverged from previous patterns. Allergies to peanut, milk, shellfish and soy were proportionately higher in the study population, while wheat allergy was proportionately rarer, and sesame allergy was higher than previously appreciated.

The researchers said that further studies should examine whether the food allergy patterns they found are comparable to those found in other geographical areas.

Overall, children with existing food allergy were at increased risk of developing asthma and allergic rhinitis. "For patients with an established diagnosis of food allergy, 35 percent went on to develop asthma; and patients with multiple food allergies were at increased risk of developing asthma as compared to those with a single food allergy," said senior author Jonathan Spergel, MD, PhD, chief of the division of Allergy and Immunology and the holder of the Stuart Starr Chair of Pediatrics at CHOP. "Similarly, 35 percent of patients with food allergy went on to develop allergic rhinitis." These asthma and allergic rhinitis rates in children with [food allergy](#) were roughly double the rates found in the general population.

"Of the major food allergens, allergy to peanut, milk and egg

significantly predisposed [children](#) to [asthma](#) and allergic rhinitis," added Hill.

"Using provider-based diagnosis data provided important information often lacking in existing studies," added Spergel. "We found different disease rates than previously reported, and our research provides key data to shape future efforts aimed at prevention, diagnosis and management of these common pediatric conditions."

More information: David A. Hill et al, The epidemiologic characteristics of healthcare provider-diagnosed eczema, asthma, allergic rhinitis, and food allergy in children: a retrospective cohort study, *BMC Pediatrics* (2016). DOI: [10.1186/s12887-016-0673-z](https://doi.org/10.1186/s12887-016-0673-z)

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