

# New data analysis shows possible link between childhood obesity and allergies

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A new study indicates there may be yet another reason to reduce childhood obesity — it may help prevent allergies. The study published in the May issue of the *Journal of Allergy and Clinical Immunology* showed that obese children and adolescents are at increased risk of having some kind of allergy, especially to a food. The study was funded by the National Institute of Environmental Health Sciences (NIEHS) and the National Institute of Allergy and Infectious Diseases (NIAID), both parts of the National Institutes of Health.

"We found a positive association between [obesity](#) and allergies," said Darryl Zeldin, M.D., acting clinical director at NIEHS and senior author on the paper. The researchers analyzed data on [children](#) and young adults ages 2 to 19 from a new national dataset designed to obtain information about allergies and asthma. "While the results from this study are interesting, they do not prove that obesity causes allergies. More research is needed to further investigate this potential link," Zeldin said.

The study is the first to be published using new data from the National Health and Nutrition Examination Survey (NHANES). NHANES is a large nationally representative survey conducted by the National Center for Health Statistics, a part of the Centers for Disease Control and Prevention. NHANES is designed to assess the health and nutritional status of adults and children in the United States. An [allergy](#)/asthma component was supported by NIEHS and added to the 2005 NHANES study, making it the largest nationally representative dataset of allergy and asthma information ever assembled in the United States.

"We have all the pieces of the puzzle in this dataset," said Zeldin. "The allergy and asthma component of NHANES provides allergen exposure information, allergic sensitization information, as well as disease outcome information. There is a wealth of knowledge we will be able to gain by analyzing these data that will be useful to allergy and asthma sufferers."

In this study, the researchers analyzed data from 4,111 children and young adults aged 2-19 years of age. They looked at total and allergen-specific immunoglobulin E (IgE) or antibody levels to a large panel of indoor, outdoor and food allergens, body weight, and responses to a questionnaire about diagnoses of hay fever, eczema, and allergies. Obesity was defined as being in the 95th percentile of the body mass index for the child's age. The researchers found the IgE levels were higher among children who were obese or overweight. Obese children were about 26 percent more likely to have allergies than children of normal weight.

"The signal for allergies seemed to be coming mostly from food allergies. The rate of having a food allergy was 59 percent higher for obese children," said NIEHS researcher Stephanie London, M.D., a co-author on the study.

"As childhood obesity rates rise, NIEHS will continue to work to determine how environmental factors affect this epidemic," said Linda Birnbaum, Ph.D., NIEHS director. "Seeing a possible link between obesity and allergies provides additional motivation for undertaking the challenge of reducing childhood obesity."

"Given that the prevalence of both obesity and allergic disease has increased among children over the last several decades, it is important to understand and, if possible, prevent these epidemics," said Cynthia M. Visness, Ph.D., lead author on the paper and a scientist at Rho Federal

Systems Division, Inc. in Chapel Hill, N.C.

Source: NIH/National Institute of Environmental Health Sciences

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