

National
Organization of
Mothers
Of
Twins
Clubs, Inc.

SUBJECT:
RESEARCHER:

GENETICS OF PEANUT ALLERGY
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DATE:

2002

PURPOSE: The purpose of this study was to examine the relative influence of genetic factors on the development of peanut allergy.

METHOD: The researchers compared concordance rates (where both twins in a pair demonstrate a given trait) between identical and fraternal twins for peanut allergy. Twin pairs in whom at least one had peanut allergy were recruited for this study. Participants or parental surrogates were interviewed and asked to complete a questionnaire. A statistical model that accounts for both genetic and environmental factors was used to estimate the heritability of peanut allergy.

BACKGROUND INFORMATION

Peanut allergy affects 0.6% of the U.S. population, and 0.4% of children. The allergy is long-lived, and reactions are often severe and potentially fatal. Peanut allergy exist when any of the following reactions occur within 60 minutes of ingestion of peanut or a peanut-containing product: hives, edema, wheezing, throat tightness, shortness of breath, repetitive coughing, vomiting or diarrhea.

“Genetics of peanut allergy: A twin study,” S.H. Sicherer, M.D., T.A. Furlong, M.A.; H.H. Maes, Ph.D; R.J. Desnick, Ph.D.,M.D.; H.A. Sampson, M.D.; and B.G. Gelb, M.D. Journal of Allergy and Clinical Immunology, vol. 106, July 2002, pp. 53-36.

Dr. Sicherer and his associates examined 58 pairs of twins and compared how often both twins in the identical pairs had peanut allergy versus how often both twins in the fraternal pairs had the allergy. Participants’ ages ranged from 1 to 58 years, with an average age of 7.9 years. There were 14 identical pairs, and 44 fraternal pairs.

RESULTS

Both twins had peanut allergy in 9 of the 14 identical pairs (64.3%), compared to only 3 of the 44 fraternal pairs (6.8%). Using a statistical model that accounts for both genetic and environmental factors, the researchers estimated the heritability of peanut allergy at 82% to 87%.

CONCLUSION

The findings of this study suggest a strong genetic influence on the development of peanut allergy.