RESULTS. Of the total 38,840 final surveys regarding children submitted, 8.3% of children had current food allergies, whereas 3.2% had outgrown food allergies. The data showed an average age of 3.6 years for the first reaction to any food. However, the mean age of the first reaction was younger for milk, egg, and soy reactions. Overall, the mean age for outgrowing food allergy was 5.4 years, although a younger mean age of tolerance was reported for milk, wheat, egg, and soy. Significantly higher frequency of tolerance was seen in milk, egg, or soy allergy, in contrast to those with shellfish, tree nut, and peanut allergies. Factors such as gender and race also influenced odds of tolerance, with boys having a higher tolerance rate than girls and a higher number of white versus black children reporting tolerance. Children with multiple food allergies showed significantly lower odds of developing tolerance, whereas those with a single food allergy had increased odds of tolerance. A higher probability of tolerance was seen with younger age of first reaction, as well as when eczema was the sole symptom of the food allergy. Children with severe reactions were less likely to have outgrown the food allergy.

CONCLUSIONS. Many factors (including the type of food, age at onset of reaction, race, and gender) may be associated with outgrowing food allergies.

REVIEWER COMMENTS. Future tolerance of the food allergen(s) is one of the most frequently asked questions by caregivers of newly diagnosed children. Although this study has limitations, including the lack of oral challenge and likely recall bias, information about possible factors that may predict tolerance are described. Prospective studies investigating the natural history of food allergy will further aid the clinician in addressing the concerns of parents and would provide practitioners a larger scope of evidence with which to counsel their patients and families.

Distribution of Peanut Protein in the Home Environment

PURPOSE OF THE STUDY. The goal of this study was to assess potential routes of transfer of peanut protein into the home environment and to assess the effect that cleaning methods have on environmental peanut protein levels.

STUDY POPULATION. Forty-five families were recruited from pediatric allergy clinics.

METHODS. To quantify ambient household peanut levels, dust samples from all household members’ beds and the infant’s play area were obtained by vacuuming. Wipe samples were obtained from the infant’s and parents’ eating areas, as well as other surfaces in the home. Peanut protein in the samples was measured by using enzyme-linked immunosorbent assay and converted to micrograms of peanut protein per gram of dust. Peanut protein was also measured from hand wipe and saliva samples before and 3 hours after subjects ate peanut products. To measure airborne peanut protein, air samplers were placed 1 cm and 1 m above open containers of peanut products for 22 hours and over a pan of simmering peanut-flavored sauce for 10 hours. In addition, air samples were obtained at and around researchers during and after they ate peanut products. Various table surfaces were spiked with peanut and then cleaned with water or detergent and sampled for residual peanut protein.

RESULTS. Dust from the infant’s play area had the highest peanut protein level, followed by the parents’ bed and siblings’ beds. Correlation between concentrations in various areas of the home was high. Levels in wipe samples were lower than in dust, and the median was below the lower limit of quantification for the assay. Levels of peanut protein on a sofa cover and a pillow case increased after peanut consumption. After the items were washed twice, the level of peanut protein on the items was dramatically decreased. Peanut protein levels on hands and in saliva remained elevated 3 hours after consumption. Except for when dry roasted peanuts were being shelled, median airborne peanut protein levels were below the lower limit of quantification. After wiping the spiked table surfaces with water, there was only a small reduction in the amount of peanut protein on the surface. After vigorous detergent cleaning, there was a reduction but protein was still measurable on the wood and laminate surfaces (but not on the granite surfaces).

CONCLUSIONS. Peanut protein can easily spread throughout a home but probably not by aerosolization. It may be resistant to usual cleaning methods.

REVIEWER COMMENTS. Our mothers were right, to a certain extent. We should still wash our hands and clean up after ourselves after eating. After eating peanut products, these steps will reduce but not eliminate residual peanut in the environment. This study shows that peanut can then be transferred throughout the home. The amount found would likely not trigger symptoms in an allergic patient. However, the following article in the same issue of the *Journal of Allergy and Clinical Immunology* by the same group indicates that environmental peanut protein is biologically active and therefore has the potential to contribute to sensitization.
Distribution of Peanut Protein in the Home Environment
Mitchell R. Lester
Pediatrics 2014;134;S153
DOI: 10.1542/peds.2014-1817JJ

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