mother during pregnancy and lactation. All children with a questionnaire-based diagnosis of PA were invited for allergy testing; PA was confirmed if skin-prick test results, specific immunoglobulin E (IgE) measurements, or both were greater than the 95% positive predictive values or if children had a positive oral peanut-challenge result.

RESULTS. The Food Allergy Questionnaires were distributed to 10,786 children, and 81.8% were returned. Mothers returned 176 Food Frequency Questionnaires; none declined participation. The prevalence of PA in the United Kingdom was 1.85% and that in Israel was 0.17% ($P < .001$). After adjustment for atopy, the relative risk for PA in the United Kingdom was 5.8 (95% confidence interval: 2.87–11.8) for all children and 9.8 (95% confidence interval: 3.1–30.5) for primary school children. In terms of dietary assessments, the Kaplan-Meier plots for the age of introduction of solid foods were similar in the 2 countries; the introduction of egg, soybean, wheat, vegetables, fruits, and tree nuts was similar. However, with the introduction of peanut there was a significant difference between the 2 countries: by 9 months of age, 69% of Israelis were eating peanut, compared with only 10% of United Kingdom infants. The median monthly consumption of peanut in Israeli infants 8 to 14 months of age was 7.1 g of peanut protein and that in United Kingdom infants was 0 g ($P < .001$). Similar contents of major peanut allergens were demonstrated in products from the 2 countries, as well as similar levels of IgE binding between the products.

CONCLUSIONS. The prevalence of PA is 10-fold higher in Jewish children in the United Kingdom, compared with that seen in Jewish children in Israel. The differences cannot be explained by differences in age, gender, ancestry, atopy, or socioeconomic class. The most obvious difference in the diet of infants in the 2 populations occurs in the introduction of peanut. Israeli infants are introduced to peanut during early weaning and continue to eat peanut more frequently and in higher amounts than United Kingdom infants, who avoid peanut. It has been proposed that different methods of preparing peanut could be responsible for the different rates of PA in different countries, but commonly consumed peanut-containing foods in both countries are derived from roasted peanut butter, and equivalent amounts of total protein, major peanut allergen, and IgE binding were demonstrated among these foods.

REVIEWERS COMMENTS. This study demonstrated a strong inverse association between peanut consumption in infancy and the prevalence of PA in childhood. It is compelling that the early introduction of frequent and high doses of peanut protein in infants may lead to oral tolerance. Although there is inherent selection bias and recall bias with questionnaires in general, the authors of this study attempted to reduce both of these factors. Until recently, dietary avoidance of peanut during pregnancy, breastfeeding, and early childhood was recommended in the United States. This article prompts us to question our practices and recommendations in terms of introduction of peanut into our children’s diet and how it may affect their propensity to develop PA. An ongoing study, Learning Early About Peanut Allergy (LEAP), which is being conducted by the authors of this article, should provide much-needed evidence for guidelines on the introduction of peanut into the diet of infants and children.

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Dietary Advice, Dietary Adherence and the Acquisition of Tolerance in Egg-Allergic Children: A 5-yr Follow-up

PURPOSE OF THE STUDY. To assess sources of dietary advice, adherence to advice, factors that influence adherence, and impact of dietary adherence on acquisition of tolerance among egg-allergic children.

STUDY POPULATION. One hundred sixty-seven children diagnosed with immunoglobulin E–mediated egg allergy and followed by a tertiary pediatric allergy center in Australia.

METHODS. In 2006, a questionnaire was mailed to parents of egg-allergic children who were seen in the clinic in 2003. The questionnaire included demographic data, initial and subsequent reaction history, and information on self-injectable epinephrine prescriptions. Reaction severity was categorized as grade 1 (localized erythema/urticaria), 2 (generalized erythema/urticaria, angioedema, and/or gastrointestinal symptoms), or 3 (generalized urticaria and stridor, wheeze, or cardiovascular compromise). The questionnaire also assessed the type and source of dietary advice given, dietary adherence, characteristics that affect adherence, and acquisition of tolerance to egg. Adherence to dietary advice was defined as following given advice “all of the time.” Oral tolerance to egg was based on the results of an oral food challenge (OFC).

RESULTS. The mean age of the study population was 6.6 years (mean follow-up period: 5.5 years). Coexisting atopic disorders were prevalent, with 83% of children having other food allergies and 56% having asthma. Only 21% reported having a prescription for self-injectable epinephrine, 47% reported accidental exposures, and 39% reported subsequent clinical reactions to
Effect of Maternal Egg Consumption on Breast Milk Ovalbumin Concentration


PURPOSE OF THE STUDY. To assess human milk ovalbumin concentrations after daily maternal ingestion of 1 cooked egg for a 3-week period.

STUDY POPULATION. There were 32 mothers of singleton, breastfed, egg-sensitive infants with moderate-to-severe eczema. Egg sensitivity was identified by a positive skin-prick test result. Eczema was evaluated by using a standardized scoring system.

METHODS. Families had an initial home visit by an experienced dietitian, which involved collection of demographic and dietary information. All women and children were asked to follow an egg-free diet from day 1 through the duration of the trial. Adherence to the egg-free diet was assessed via detailed dietary intake records for both mothers and children on days 1 to 3, 10 to 12, and 21 to 23. Mothers were randomly allocated to receive identical-appearing egg-free muffins or muffins containing 1 (55 g) whole egg. Each mother was given a 3-week supply of frozen muffins corresponding to her randomization group and consumed 1 muffin per day on days 3 through 23. Atopic dermatitis assessments were performed for each child at the commencement and completion of the trial. The mothers completed the Infant’s Dermatitis Quality of Life Index 3 times during the trial. On days 3, 12, and 23, the mothers manually expressed 5 mL of breast milk into sterile containers before and 2, 4, and 6 hours after eating the test muffin. Breast milk samples were stored in the home freezer and collected on day 24. The breast milk samples were queued for ovalbumin concentration by using a sandwich enzyme-linked immunosorbent assay method. Breast milk ovalbumin concentrations (nanograms per milliliter) were plotted against time, and the resulting curve was used to determine peak ovalbumin concentrations and total ovalbumin excretions (nanograms per milliliter per hour). Independent-sample t tests, Mann-Whitney U tests, and Pearson’s χ² tests were used to investigate differences between the diet groups.

RESULTS. Women in the egg group had higher ovalbumin concentrations in breast milk than did the control group at all time points. Within each dietary group, the frequency of ovalbumin detection, peak ovalbumin concentration, and total ovalbumin excretion did not differ at days 3, 12, and 23. Ovalbumin was not detected in the breast milk of 25% of the women in the egg group. Infant eczema symptom scores were significantly reduced with time for both groups.

CONCLUSIONS. Human milk ovalbumin is related to maternal dietary egg intake. Comparable detection of ovalbumin across time suggests that ovalbumin does not accumulate in human milk. One quarter of the women had no ovalbumin detected in their breast milk on any of the study days, which suggests that some women either do not excrete ovalbumin in their breast milk when challenged with 1 egg or have delayed excretion beyond 6 hours. Maternal dietary avoidance of well-cooked egg may not be necessary for all breastfed infants with egg sensitivity and eczema.
Dietary Advice, Dietary Adherence and the Acquisition of Tolerance in Egg-Allergic Children: A 5-yr Follow-up

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