specific IgE level (sIgE), and eczema was assessed by Scoring Atopic Dermatitis (SCORAD) severity score.

RESULTS. The study was terminated when the interim analysis showed a protective effect of egg ingestion. Among infants completing the open egg challenge (N = 121), 5 (8%) had an egg allergy in the egg group versus 23 (38%) in the placebo group (risk ratio 0.221 [95% CI 0.090–0.543], P = .001). In stratified analyses, egg ingestion was protective for egg-sensitized infants (sIgE ≥0.35 kUA/L, P = .001) but not for nonsensitized infants (sIgE <0.35 kUA/L, P = .31).

CONCLUSIONS. Daily consumption of a small amount of egg and aggressive eczema care starting at age 6 months prevents egg allergy in high-risk infants at age 12 months.

REVIEWER COMMENTS. This stepwise egg introduction to infants with eczema appeared to be safe; no severe, immediate allergic reactions were reported at home, although anaphylaxis occurred during some monitored egg challenges. The significantly higher baseline egg sensitization rate and SCORAD in the placebo group were important limitations that may have affected the rates of egg allergy in the 2 groups and biased the results. The median baseline SCORAD was in the moderate range for the placebo group and in the mild range for the egg group; eczema was well controlled with minimal topical steroid use, suggesting that few infants had severe or difficult-to-control eczema.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2017-2475LL

Mihaela Paina, MD, MSc
Elinor Simons, MD, PhD, MSc
Winnipeg, MB, Canada

Timing of Allergenic Food Introduction to the Infant Diet and Risk of Allergic or Autoimmune Disease: A Systematic Review and Meta-analysis


PURPOSE OF THE STUDY. To determine whether the timing of allergenic food introduction influences the risk of development of allergic or autoimmune disease.

STUDY POPULATION. Meta-analysis of studies evaluating the timing of allergenic food introduction in the first year of life and reported allergy, allergic sensitization, or autoimmune disease.

METHODS. A comprehensive literature search from January 1, 1946, to March 8, 2016, was performed. Participants were enrolled within 6 months of life, and outcomes were evaluated between 7 months and 6 years of age. Across the 146 studies evaluated, the age of allergenic food introduction and associated allergic or autoimmune outcomes were compared in 24 interventional/69 observational studies and in 6 interventional/48 observational studies, respectively. Bias and statistical heterogeneity were quantified by using validated methodology. A post hoc trial sequential analysis quantified the statistical reliability of the moderate- to high-certainty findings with egg introduction and gluten introduction. The certainty of evidence score was determined by using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) system.

RESULTS. The meta-analysis of 5 trials with 1915 participants found a decreased risk of developing an egg allergy with egg introduction at 4 to 6 months (RR 0.56; 95% CI, 0.36–0.87). Meta-analysis of 2 trials with 1550 participants found a lower risk of developing a peanut allergy when peanut was introduced at age 4 to 11 months (RR 0.29; 95% CI, 0.11–0.74). There was no association with the timing of introduction of other allergenic foods (milk, wheat, soy, tree nuts, and shellfish) and the risk of allergic sensitization or food allergy. There was conflicting evidence about the early introduction of fish and the associated risk of allergic sensitization. No association was found between the timing of gluten introduction and type 1 diabetes mellitus or between the timing of milk introduction and type 1 diabetes mellitus.

CONCLUSIONS. There is moderate-certainty evidence that the introduction of egg between 4–6 months of age and peanut between 4–11 months of age is associated with a reduced risk of egg and peanut allergy, respectively. There is low- to very-low-certainty evidence that fish introduction between 6–12 months of age is associated with decreased allergic sensitization or rhinitis. There is high-certainty evidence that the timing of gluten introduction has no association with celiac disease.

REVIEWER COMMENTS. This large-scale meta-analysis and systematic review concludes that the early ingestion of egg and peanut is associated with antigen-specific oral tolerance, a heartening finding with significant implications for families wondering about the right age to introduce these potentially allergenic foods. There was no consistent evidence, however, that the introduction of 1 food influences the development of a different food allergy. Reassuringly, there was no consistent evidence that the timing of food introduction impacts autoimmune diseases, including celiac disease, type 1 diabetes mellitus, or inflammatory bowel disease.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2017-2475MM

Elizabeth Lipppner, MD
Chitra Dinakar, MD
Stanford, CA

Parental Timing of Allergenic Food Introduction in Urban and Suburban Populations


PURPOSE OF THE STUDY. To investigate the differences in early food introduction in urban versus suburban populations.
Timing of Allergenic Food Introduction to the Infant Diet and Risk of Allergic or Autoimmune Disease: A Systematic Review and Meta-analysis
Elizabeth Lippner and Chitra Dinakar
Pediatrics 2017;140;S194
DOI: 10.1542/peds.2017-2475MM

Updated Information & Services
including high resolution figures, can be found at:
http://pediatrics.aappublications.org/content/140/Supplement_3/S194.1

Permissions & Licensing
Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
http://www.aappublications.org/site/misc/Permissions.xhtml

Reprints
Information about ordering reprints can be found online:
http://www.aappublications.org/site/misc/reprints.xhtml
Timing of Allergenic Food Introduction to the Infant Diet and Risk of Allergic or Autoimmune Disease: A Systematic Review and Meta-analysis
Elizabeth Lippner and Chitra Dinakar
*Pediatrics* 2017;140;S194
DOI: 10.1542/peds.2017-2475MM

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://pediatrics.aappublications.org/content/140/Supplement_3/S194.1