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Early Introduction of Allergenic Foods Reduces Risk of Food Sensitization

ATS 2016, SAN FRANCISCO ─ Children who had a diet that included cow's milk products, egg and peanut before age one were less likely to develop sensitization to the corresponding foods, according to new research presented at the ATS 2016 International Conference. Early introduction of eggs appeared to be especially beneficial, as it decreased the risk of sensitization to any of the three tested foods.

The Canadian Healthy Infant Longitudinal Development (CHILD) Study, directed by Malcolm Sears, MB, ChB, professor in the Department of Medicine at McMaster University, is believed to be "the first to determine the effects of timing of food introduction to cow's milk products, egg, and peanut, on food sensitization at age one in a general population-based cohort," said lead investigator Maxwell Tran, a research student at McMaster University in Hamilton, Ontario, Canada. Most previous studies focused on one specific food type, studied outcomes in later childhood or studied high-risk groups.

The study included data from 1,421 children. Most parents in the study introduced cow's milk products, which encompass cow's milk-based formula, to their infants before age one: 0-6 months 48 percent, 7-12 months 48 percent and ≥12 months 4 percent. The majority of parents, however, delayed introducing eggs to their children: 0-6 months 6 percent, 7-12 months 76 percent and ≥12 months 19 percent.

"The clinical implications of our findings are that early introduction of allergenic foods (egg, cow's milk products, and peanut) before age one should be encouraged and is better than food avoidance for reducing the risk of food sensitization," said Mr. Tran. "Sensitization is not the same as allergy, but it is an important step on the pathway."

The results of the CHILD study reinforce a shift in thinking from delayed food introduction to earlier food introduction for allergy prevention. “Many guidelines around the world are now reflecting this shift, with the recommendation of food introduction before 6 months of age,” said Mr. Tran.

This phase of the study involved one-year-old children. However, the CHILD study is well-positioned to investigate infant feeding practices in relation to allergic diseases up to age five and possibly beyond that.

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Abstract 8568

The Effects of Infant Feeding Practices on Food Sensitization in a Canadian Birth Cohort

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Abstract Body

RATIONALE
Evidence regarding the impact of infant feeding practices, including breastfeeding and timing and diversity of food introduction, on atopic sensitization remains controversial. We examined the relationship between infant feeding and development of sensitization to foods at age 1 year in the Canadian Healthy Infant Longitudinal Development (CHILD) birth cohort study.

METHODS
Nutrition questionnaire data prospectively collected at age 3, 6, 12, 18, and 24 months were used to characterize timing of introduction of cow’s milk products (CMP), egg, and peanut/peanut butter; diversity of food introduction; and exclusive breastfeeding to 6 months. At 1 year, infants underwent skin prick testing to cow’s milk, egg white, and peanut, with a wheal diameter ≥2 mm regarded as positive. To allow the ability to account for potential confounders, we analyzed data from children with complete data for timing of food introduction and skin prick testing for the infant and both parents (n=1421).

RESULTS
Most parents introduced CMP early (0-6 months 48%, 7-12 months 48%, ≥12 months 4%) but

delayed introduction of egg (0-6 months 6%, 7-12 months 76%, ≥12 months 19%) and particularly peanut (0-6 months 1%, 7-12 months 41%, ≥12 months 58%). At age 1 year, 10% of children were food-sensitized, with highest prevalence of egg white sensitization (6%). Early introduction of CMP, egg, and peanut was protective against sensitization to the corresponding food allergens. Introducing egg before age 1 significantly reduced the odds of developing sensitization to any of the three tested food allergens (0-6 months adjOR 0.33, 95% CI 0.12-0.90; 7-12 months adjOR 0.47, 95% CI 0.31-0.73), after adjusting for study center, parental atopy, and parental ethnicity. Exclusive breastfeeding to 6 months did not affect the risk of sensitization to foods, except for cow's milk (adjOR 3.58, 95% CI 1.42-8.99). Within the three "allergenic" foods assessed, less diversity of introduction before age 1 was associated with a greater risk of food sensitization.

CONCLUSIONS

Exclusive breastfeeding to 6 months did not significantly alter the risk of sensitization to egg or peanut at age 1 year, but increased the risk of sensitization to cow's milk. In contrast, early introduction of solid foods reduced the risk of food sensitization, as did an increased diversity of these "allergenic" foods introduced during the first year. The findings from this study reaffirm the paradigm shift from delayed food introduction and food avoidance to earlier introduction of diverse foods for allergy prevention.