Dietary Intake Among US Adults with Food Allergy: Analysis of the National Health and Nutrition Examination Study (NHANES) Survey Data

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Objectives: Food allergy (FA) is a costly, potentially life-threatening condition affecting nearly 11% of the US adult population and can require lifelong avoidance of allergens, but little is known about the dietary patterns of individuals with FA. We aimed to use National Health and Nutrition Examination Study (NHANES) survey data to compare dietary patterns of participants with allergies to cow's milk (CM) or peanuts or tree nuts (PT) to those without FA.

Methods: Adult participants in the NHANES 2007–2010 with valid data on self-reported FA were included. Dietary intake was estimated using up to two 24-hour recalls, and Healthy Eating Index 2015 (HEI-2015) was computed to assess diet quality. Analyses were conducted using weights to account for the complex survey design of NHANES.

Results: A total of 10,669 participants were included, of whom 2.7% reported CM allergy and 1.4% PT allergy. Participants reporting CM or PT allergies had higher education (37% vs 27% college or above) and income (mean poverty-income-ratio = 3.3 vs 3.0), were less likely to be current smokers (12% vs 21%) and were more likely to be taking dietary supplements (64% vs 48%) than those with no FA. In comparison to participants with no FA, those with CM allergy were more likely to be females (69% vs 51%) and non-Hispanic white (76% vs 69%), while those with PT allergy were more likely to be non-Hispanic black (15% vs 11%); all p-values < 0.05. Compared to those with no FA, participants with CM allergy had higher HEI scores (56 vs 53, $P < 0.01$) and lower mean intakes of starchy vegetables (0.4 vs 0.5 cup equivalents (eq)/day, $P < 0.01$), refined grains (4.9 vs 5.6 ounce (oz) eq/day, $P < 0.01$), and milks including calcium-fortified soy milk (0.5 vs 0.8 cup eq/day, $P < 0.01$). In contrast, participants with PT allergy had higher intakes of refined grains (7.1 vs 5.6 oz eq/day, $P = 0.049$) and sodium (4102 vs 3446 mg/day, $P < 0.01$) compared to those without FA, while HEI scores were similar. Total energy and macronutrients intake (total proteins, carbohydrates, fats) were similar across the three groups.

Conclusions: Food allergy may be associated with shifts in overall diet composition, depending on type of food allergen. More research is needed to characterize these dietary behaviors and assess the types of food substitutions and their potential impacts on health.

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