USDA Food and Nutrition Service
U.S. DEPARTMENT OF AGRICULTURE

Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) Infant and Toddler Feeding Practices Study-2: Sixth Year Report (Summary)

Background

The U.S. Department of Agriculture's (USDA) Food and Nutrition Service (FNS) administers 16 nutrition assistance programs with the mission to increase food security and reduce hunger - in partnership with cooperating organizations - by providing children and low-income people access to food, a healthy diet, and nutrition education in a manner that supports American agriculture and inspires public confidence.

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is one of USDA's nutrition assistance programs. WIC safeguards the health of pregnant and postpartum women, infants, and young children from low-income households who are at nutritional risk. The WIC Infant and Toddler Feeding Practices Study-2 (WIC ITFPS-2), also known as the "Feeding My Baby Study," is the only national study to capture data on caregivers and their children over the first nine years of the child's life after enrollment in WIC, regardless of their continued participation in the program. This report, the seventh in the series generated from this study, focuses on children's dietary intake patterns, eating behaviors, and weight status during the child's 6th year after WIC eligibility has ended. The report also explores whether patterns of WIC participation in early childhood are associated with dietary behaviors and nutrient intakes after WIC eligibility ends.

Key Findings

- Consistent 5-year participation in WIC is associated with better overall diet quality at age 6 compared to participation during only the first year of life.
- Longer participation in WIC is associated with lower saturated fat intake at age 6.
- At age 6, study children consumed recommended amounts of macronutrients but had inadequate intake of certain micronutrients, including vitamin E, calcium, and vitamin D.
- Usual intake of fruits, vegetables, dairy, protein foods, and grains among study participants was consistent with that of a national sample but lower than recommended by the DGA.

Methods

This national study represents a population of infants enrolling in WIC at eligible sites in 2013. Spanish-speaking and English-speaking caregivers who were at least 16 years of age were recruited in person as they enrolled in WIC (either prenatally or before their infant was 2.5 months old). Study recruitment occurred at 80 WIC sites across 27 States and territories nationwide. Caregivers and their children remained eligible to participate in the study regardless of continued participation in WIC. The study's analytic sample includes 3,775 caregivers who completed at least a 1- or 3-month postpartum interview. However, in this report, analyses may use smaller sample sizes because of study attrition, missing data, or because research questions only pertained to a subset of participants.

This report reflects the responses from follow-up interviews conducted between July 2013 and August 2020, occurring every 2–3 months between ages 1 and 24 months, every 6 months thereafter until the child was 5 years old, and once at age 6. The interviews included questions on WIC participation, caregivers' feeding practices, and health behaviors, as well as a 24-hour dietary recall to estimate the child's usual dietary intake of nutrients and overall diet quality as measured by the 2015 Healthy Eating Index (HEI-2015).

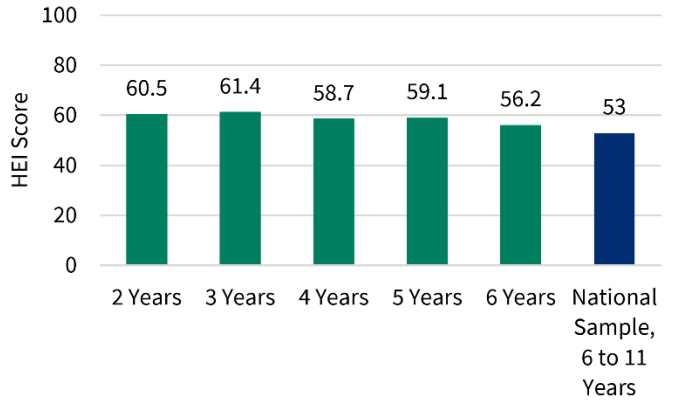
The study obtained data on children's length or height and weight from WIC or health care providers at birth, and around 6, 12, 24, 36, 48, 60, and 72 months of age. Starting at age 24 months, age and sex-specific growth charts from the Centers for Disease Control and Prevention were used to classify children's body mass index (BMI) for age percentiles into four categories: underweight (less than the 5th percentile), healthy (5th percentile to less than the 85th percentile), overweight

(85th percentile to less than the 95th percentile), and obese (95th percentile or greater).

Findings

Consistent 5-year participation in WIC is associated with better overall diet quality at age 6 compared to participation during only the first year of life. Children with 5 full years of WIC participation had diets at age 6 that more closely aligned with the Dietary Guidelines for Americans (DGA), as assessed by HEI-2015 scores, than children who left WIC after their first year. Improved diet quality 1 year after WIC eligibility ended suggests that WIC's nutrition assistance with supplemental healthy foods and nutrition education may influence behaviors that last into the child's sixth year. As in previous study years, diet quality among study participants is similar to the average score for a nationally representative sample of 6–11-year-olds (Figure 1).

Figure 1: Average 2015 Healthy Eating Index (HEI-2015) Total Scores Among Study Children at 2, 3, 4, 6, and 6 Years Old and a National Sample of 6- to 11-Year-Old Children[1]

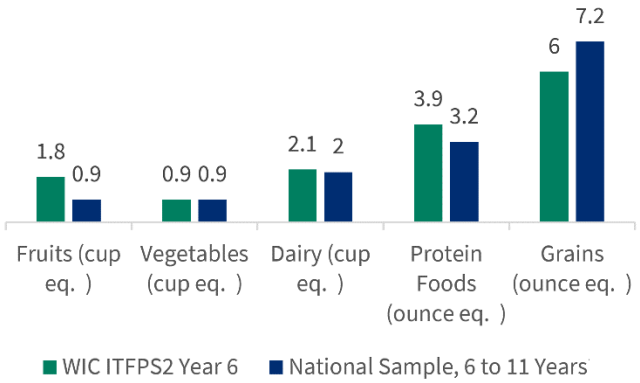


Longer participation in WIC is associated with lower saturated fat intake at age six. The 2020-2025 DGA recommends that children two years and older consume fewer than 10 percent of total calories from saturated fats. Although only about one-third of study children (31%) met this recommendation at age 6, these children consistently had lower saturated fat intakes on a given day at age 6 than those who left WIC within the first 3 years of the child's life. This finding reflects other findings in this report, that longer WIC participation is associated with a higher likelihood of consuming skim or one percent fat milk. Duration of exposure to nutritious supplemental foods in the food package and age-appropriate nutrition education offered by WIC staff may play a role in the saturated fat findings at age 6.

At age 6, study children consumed recommended amounts of macronutrients but had inadequate intake of certain micronutrients, including vitamin E, calcium, and vitamin D. At age 6, study children were consuming the recommended ranges of calories from fat, protein, and carbohydrates as a percentage of energy intake. However, the median intake of dietary fiber fell below the recommended adequate intake of 25 grams per day. Approximately 97 percent of study children had sodium intakes above the recommended level for chronic disease risk reduction, suggesting the need for reduced intakes of this micronutrient.

Usual intake of fruits, vegetables, dairy, protein foods, and grains among study participants was consistent with that of a national sample but lower than recommended by the DGA. Sixty-two percent of study children met the 2020-2025 DGA recommendations for grains and about half met the recommendations for fruits. However, less than one-quarter met the DGA recommendations for protein foods and dairy and only one percent met the recommendations for vegetable intake (Figure 2).

Figure 2: Usual Intake of Study Children at 6 Years Old and a National Sample of 6- to 11-Year-Old Children[1,2]



[1] 2013-2014 National Health and Nutrition Examination Survey

[2] eq. = equivalents

For More Information:

Borger, C., Zimmerman, T., DeMatteis, J., et al. (2022). WIC Infant and Toddler Feeding Practices Study-2: Sixth Year Report. Prepared by Westat, Contract No. AG-3198-B-11-0020 and AG-3198-K-15-0050. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Policy Support, Project Officer: Amanda Reat. Available online at: www.fns.usda.gov/research-and-analysis.