

BETTER FOODS AND CLEAR MESSAGES IMPROVE NUTRITION



Recent substantial changes have been made to the WIC food package to address the obesity epidemic, particularly among low-income families. In advance of the changes, California WIC developed and implemented a coordinated statewide nutrition education curriculum to introduce the new foods to WIC families. A follow-up survey showed that WIC participants significantly improved eating behaviors as a result of the new nutrition curriculum alone, and they further improved their eating habits after receiving healthier WIC foods. This report shows the power of nutrition education when linked to policy changes and recommends ways that state and local WIC programs can support continued healthier eating among WIC families.

The WIC Food Changes

In 2009, the food packages provided by the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) were revised to align with new scientific evidence and the Dietary Guidelines for Americans. The changes were aimed at lowering the risk of obesity and its consequences among WIC participants, as lower-income families are

disproportionately affected by this national epidemic.¹ On the recommendation of the Institute of Medicine, fruits and vegetables, whole grains, and soy products were added to the food packages, and the types and amounts of milk, cheese, eggs, and juice made available to WIC families were modified.² Since WIC serves more than 9 million participants each month, including more than half of all infants born in the United States,³ this sweeping revision presented a unique opportunity to examine how policy changes—and in particular, the nutrition education that accompanied them—could have a national impact on eating habits.

Coordinated Nutrition Education

Nutrition education for all beneficiaries is a core component of WIC, the only federal nutrition program with this requirement. Significant federal dollars are expended as part of WIC Nutrition Services and Administration (NSA) funds to provide high-quality health education on the topics of healthy eating, physical activity, and breastfeeding to every WIC participant. Frontline WIC employees are required and trained to deliver relevant WIC nutrition messages in a variety of ways, including individual and group education, peer support groups, and culturally sensitive materials and messages in print or electronic formats. Most of the education delivered in the WIC setting is brief (often taking less than 20 minutes) and targeted at a specific behavior change (“Eat a rainbow of fruits and vegetables”).



California WIC's nutrition education prior to implementation of the food package changes stressed recognizing healthier foods.



WIC's Healthy Habits Every Day curriculum features culturally relevant modules focusing on better eating and more physical activity. Research showed that WIC participants improved their behaviors following the education.

A Natural Experiment in California

To prepare California WIC families for the new food package changes a year before the new foods were introduced, all local WIC agencies in California began an intensive nutrition education campaign, starting with WIC employee wellness. Then, six months prior to introducing the new WIC foods, California WIC delivered a coordinated, statewide, participant-centered nutrition education campaign—Healthy Habits Every Day—to all local agency WIC sites.

Using popular Sesame Street characters, the campaign featured three culturally relevant modules with key health messages pertinent to the new WIC food package: eat more fruits and vegetables, drink lower-fat milks, and choose whole grains. The Healthy Habits curriculum was delivered at carefully timed intervals as a series of simple and distinct health messages accompanied by practical tips and taste testing. The format and frequency of the Healthy Habits curriculum were typical of WIC nutrition education: participant-centered interactive, culturally sensitive, and delivered in short, targeted sessions.

Because the Healthy Habits

campaign began prior to the introduction of new WIC foods, it provided a “natural experiment” for researchers to test the impact of nutrition education alone on the knowledge, attitudes, and behavior of WIC participants well before the new foods appeared. Several months later, researchers were able to assess the impact of nutrition education coupled with the food changes.

A Rigorous Evaluation

In order to measure the outcomes of the nutrition education program both before and after introduction of the new foods, a rigorous evaluation was designed by a collaborative team from UC Berkeley's Atkins Center for Weight and Health, the California WIC Program, and PHFE WIC, the nation's largest local agency WIC program. At three separate points, trained independent interviewers conducted telephone surveys with representative, random samples of approximately 3,000 California WIC participants. Surveys occurred six months before the Healthy Habits nutrition education campaign began, six months after the curriculum was delivered at WIC sites but before the new foods were introduced, and six months after the WIC food package changes were implemented.

WIC Nutrition Education Alone Improves Diets

The study showed that even before the food package changes were implemented, WIC participants began eating healthier foods as a result of the new nutrition education curriculum.^{4,5} After six months of the Healthy Habits campaign but before the food changes had appeared, WIC participants were better able to recognize important nutrition messages, such as “Eat a

rainbow of fruit and vegetables” and “Lose the fat, keep the vitamins: drink lower-fat milk.”

The participants also expressed greater intention to eat



Healthy Habits Every Day materials can be found at www.cdph.ca.gov.

more fruits, vegetables, and whole grains and to drink lower-fat milk.

However, the most exciting change after receiving the Healthy Habits nutrition education was that WIC participants reported actual dietary changes, such as eating more fruits and whole grains and switching from whole milk to lower-fat milk. These findings show not only the effectiveness of WIC nutrition education alone in increasing knowledge and improving attitudes among participants, but more important, that education also has a significant positive impact on eating behaviors.

WIC Nutrition Education Coupled with Healthier Foods Results in Even Greater Improvements

Six months after the new WIC foods were introduced, participants reported even healthier eating habits. Consumption of fruits and vegetables continued to increase, and a higher intake of whole grains and lower-fat milks was especially evident. For example, there was a 51 percent increase in participants who reported eating more whole grains. Among children between two and five years old, consumption of lower-fat milk increased dramatically, while whole milk consumption dropped significantly, from 31 percent to just 12 percent (Fig. 1).

Education Plus Policy Change Support Positive Behaviors

This study demonstrates that WIC nutrition education alone can improve the type of food WIC participants eat and that there is even more improvement when healthy new foods are added to the WIC food packages. By strategically linking targeted, high-quality participant education with a key policy change, California WIC practitioners were able to support significant and positive behavior changes in a large, high-risk population. This approach matches recent recommendations by the Institute of Medicine in its report on early childhood obesity prevention strategies, which highlighted the importance of WIC as a provider of accurate and culturally competent guidance and information to parents and caregivers on concrete ways to improve healthy eating for young families.⁶



WIC nutrition education alone has a significant positive impact on eating behaviors.

Fig. 1. WIC Participants' Eating Behaviors Improved After Education, and Improved Even More After Food Package Changes



Eating behaviors in key food categories showed significant improvement with the Healthy Habits curriculum alone, and even greater improvement following introduction of the new foods. (All changes statistically significant between all time periods, with the exception of vegetable consumption from before to after education.)

ACTION RECOMMENDATIONS TO SUPPORT WIC NUTRITION EDUCATION

- 1 Congress should continue to require and fund Nutrition Education as a core service of the WIC Program.
- 2 State WIC programs should implement high-quality, pre-tested, and culturally competent statewide nutrition education campaigns that are strategically linked to policy or environmental change initiatives, both within and outside of WIC.
- 3 WIC should continue to work with local agency experts to design, test, and implement quality participant-centered nutrition education campaigns that coordinate targeted messaging for statewide use.
- 4 WIC should work proactively with early child companion programs such as SNAP-Ed, First Five, Head Start and the Child and Adult Care Food Program to plan and coordinate joint messaging campaigns and to share materials across sectors.
- 5 Congress and USDA should continue to support both large- and small-scale evaluations of WIC policy and education initiatives in order to capture what works and to help WIC practitioners adopt best practices quickly and easily.



WIC Is Prevention at Work

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) helps families with three main services: checks for buying healthy supplemental foods from WIC-authorized vendors, nutrition education and breastfeeding support, and help finding healthcare and other community services. Participants must meet income guidelines and be pregnant women, new mothers, infants, or children under age five. WIC operates in all 50 states plus tribal organizations and territories. In Federal Fiscal Year 2010, the program served 9.2 million participants, including more than half of all infants born in the United States. WIC is funded through the U.S. Department of Agriculture through annual allocations.

In California, WIC is a program of the California Department of Public Health, which contracts with 84 local agencies—both local governments and nonprofit community organizations—that operate WIC centers in 650 locations. California is the nation's largest WIC program. About 1.45 million participants receive services each month. Most WIC families are employed, with incomes at or below 185 percent of the poverty level (currently \$40,793 for a family of four); more than half are enrolled in Medicaid, the Supplemental Nutrition Assistance Program (SNAP or CalFresh), or Temporary Assistance for Needy Families (TANF).

Notes

1. Institute of Medicine, Committee to Review the WIC Food Packages and Food and Nutrition Board. WIC food packages: Time for a change. Washington, D.C.: National Academies Press, 2005.
2. For more information on the new WIC food packages, go to www.fns.usda.gov/wic/.
3. Oliveira V, Frazao E. The WIC program: Background, trends, and economic issues, 2009 Edition. Economic Research Report No. 73, U.S. Department of Agriculture, Economic Research Service, 2009.
4. Ritchie LD, Whaley SE, Spector P, Gomez J, Crawford PB. Favorable impact of nutrition education on California WIC families. *J Nutr Educ and Behav*, 2010;42:S2-S10.
5. Whaley SE, Ritchie LD, Spector P, Gomez J. Revised WIC food package improves diets of WIC families. *J Nutr Educ and Behav*, in press.
6. Institute of Medicine. Early Childhood Obesity Prevention Policies. Washington, D.C.: National Academies Press, 2011. www.iom.edu/Reports/2011/Early-Childhood-Obesity-Prevention-Policies.aspx.



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