

Low-Fat School Lunch Programs: Achieving Acceptance

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A study was carried out to determine whether hands-on classroom experience with low-fat foods would increase children's acceptance of those foods in the school's lunch program. The 9-month project took place at an elementary school in upstate New York. Half of the classrooms served as the intervention group and received classroom experience with new foods; the other half served as the control group and received no classroom experience. Consumption measurements of 16 new foods, introduced at approximately 2-week intervals, were taken

for all students who ate school lunches. Compared with children in the control group, those in the intervention group ate significantly more of the new foods when they were offered in the lunch program. The study demonstrated that experiential learning about food in the classroom is an effective way to gain acceptance of diverse, low-fat foods in the school lunch program. ©1998 by Excerpta Medica, Inc.

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Research has clearly linked diet with such chronic ailments as heart disease, some cancers, and diabetes.^{1,2} Food habits are notoriously resistant to change, especially as one grows older. Therefore, the food choices we make in childhood could well affect us throughout our lives. Our best hope for achieving dietary change and improving our nation's health is to give our children the practical and intellectual tools they need to make intelligent food choices. We can provide those tools through food education.

New York State has mandated acquired immunodeficiency syndrome (AIDS) and sexual abuse education in kindergarten through grade 12. A mandate to teach children about the relation between diet and disease is also needed. Children eat lunch at school almost every day for 12 years, presenting a unique opportunity for food education. The potential for the school lunch program to serve as a model food education program is enormous, but it must be integrated with classroom activities and the school's academic curriculum.

THE NATIONAL SCHOOL LUNCH PROGRAM

The National School Lunch Program (NSLP) is the largest government-run feeding program in the world. When schooling became mandatory at the turn of the century, childhood hunger came to the attention of educators. Despite the efforts of charitable organizations and lobbyists, however, the NSLP did not become an Act of Congress until 1946. Part of the impetus was embarrassment: One-third of US men who tried to enlist in the military services during World War I and World War II were rejected because of severe malnutrition.³

From its inception, the NSLP, which is overseen by the US Department of Agriculture (USDA), has served a dual purpose: to provide meals for hungry children and to ensure a market for farmers' surplus

crops. The government commodity program makes surplus crops available to schools at no charge, thereby decreasing the operating costs of the NSLP.

Some 50 million children eat at schools daily; of these, 26 million eat USDA school lunches every day they are in school. Needy children, who qualify for free lunch, rely on the government-run school breakfast program as well and, therefore, consume at least two-thirds of their calories at school. An additional 24 million children bring foods from home or buy food from fast-food chain vendors.

School lunch programs have been criticized for their high-fat content.⁴ Although hunger remains a problem in the United States, the incidence of childhood obesity has grown at an alarming rate since the 1970s, and these obese children are at relatively high risk of chronic disease.⁵ One cause of childhood obesity is a diet too high in fat. Ironically, USDA is the same government agency that published "Dietary Guidelines for Americans"⁶ recommending that no US citizen consume >30% of their calories as fat—a figure many nutritionists feel is still too high. Until recently, school lunches nationwide averaged 40% fat calories. The USDA has mandated that schools conform to USDA dietary guidelines by 1998 to continue to receive government funding.⁷ How are schools to reach this goal?

THE TRUMANSBURG STUDY

The biggest challenge to improving the nutritional quality of school meals is getting children to accept a healthier diet. Achieving this goal requires teamwork by the food service staff, teachers, administrators, and parents, who may need education and training themselves in food acceptance.

Children first learn about the world through their senses, and food education is an ideal way to engage all of the senses. Educators often do not appreciate the predisposition children have for sensory education, and adults in general underestimate the emotional nature of food choice decisions. This study was undertaken to test the hypothesis that an experiential food-based curriculum in the classroom will increase

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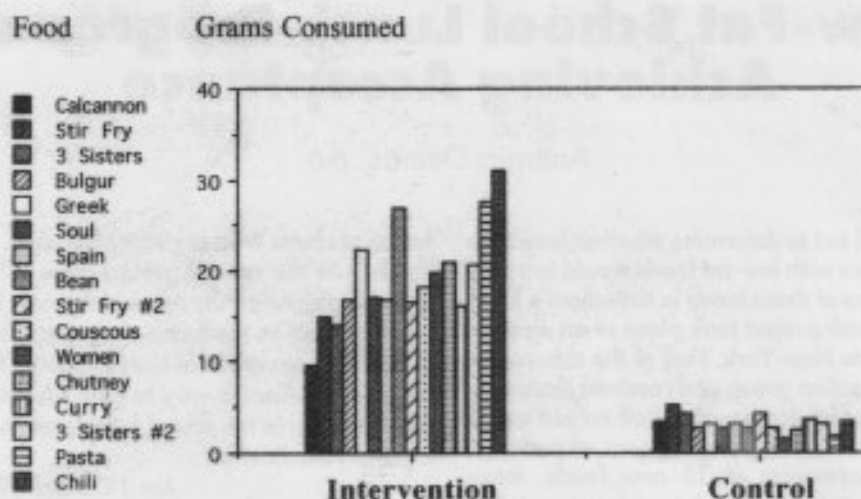


FIGURE 1. Mean grams of food consumed by intervention and control groups.

dietary acceptance of diverse foods in the lunch program.

Methods: The Trumansburg Elementary School, Trumansburg, New York, was the site of this research in 1993–1994. The school had approximately 560 students in kindergarten through grade 4. Half of the students served as the intervention group, and the other half served as the control group.

The children in the intervention group were taught about nutritious, plant-based foods in the classroom by first learning the history and lore of these foods. All foods were extremely low in fat (1–6%) and were USDA plant-based commodities such as dried beans, bulgur wheat, and lentils. The food-based units were integrated with science, mathematics, and social studies concepts.

With their classmates, the children prepared foods from other cultures, often heard music from those cultures, and studied cultural artifacts related to the food being cooked. To celebrate the birthday of Dr. Martin Luther King Jr., for example, the children learned about soul foods; cooked a soul food stew containing black-eyed peas, collard greens, and corn; sampled 8 different raw greens to determine their favorite (kale); danced to soul music; learned some of the history of slavery and the African-American experience; and listened to an African-American storyteller.

With all such activities, the children kept food journals and composted any scraps of foods that were not cooked. All activities took place in the classroom, using a hot plate and minimal cooking equipment.

The control children had no classroom experience with the new foods.

Within 1 week of a new food experience in the intervention classrooms, those foods were served in the lunch program to all children who ate school lunches on that day. Each new food was weighed in a special container, and the weight was recorded on a label placed on the bottom of the container. When a child finished eating, a volunteer removed the container from the child's tray and placed it on a tray with

the child's teacher's name. Postmeal weights were then recorded, and the difference calculated. The intervention and control consumption measurements were then compared.

A total of 16 new foods were served during the school year (Figure 1).

Results: The results were consistent and statistically significant. The intervention children ate from 3–20 times more new foods than the control children, who rarely ate any. In addition, interview data demonstrated that the intervention children's knowledge about and understanding of other cultures and general nutrition improved significantly.

The study also affected the parents. A parent questionnaire at the end of the year documented that intervention children were serving as agents of dietary change in their families, asking their parents to take them to the grocery store to find, for example, whole wheat couscous and dandelion greens to prepare at home.⁸

COMMENT

Because of the success of the Trumansburg study, the program has been expanded over the last 3 years to 12 additional schools nationwide. These schools have mixed ethnic populations, and in most, the majority of students are below the poverty level. The schools include PS 61 on the lower east side of Manhattan (primarily black and Hispanic); 2 schools in Santa Fe, New Mexico (primarily Hispanic); a school in Rochester, New York, for emotionally challenged children who cannot be mainstreamed; 2 schools in eastern Massachusetts (primarily recent immigrants including Haitian and Vietnamese); and a parochial school in Lynn, Massachusetts. A community hospital is assisting with the work in the Massachusetts schools, a partnership that will enhance the likelihood of success. All of these schools have successfully motivated children to broaden their food tastes. Currently, I have developed a year-long plant-based curriculum for elementary schools in Miami, Florida, in conjunction with Florida International University.

Recently, the food-based curriculum grew to include school gardens, which serve as an outdoor food lab for the children and help them see the connection between food and nature. The Manhattan school involved in this project has 5 food-based murals in the cafeteria. The children worked with the artist to reinforce what they learned in the classroom.

The eating environment of a school is an area that deserves serious consideration and not just for aesthetic reasons. When I did my research in Trumansburg, I took a decibel meter into the lunchroom when the children were eating. The volume of noise was equivalent to that of heavy traffic at rush hour. I suggest that politicians who vote on child nutrition issues eat their lunch on a busy Washington street corner to realize how the eating environment affects digestion as well as the art of conversation.

This study shows that when children are educated about unfamiliar foods in a manner that is fun and engages their senses, they will eat new foods. It also shows that food education can be integrated effectively into classroom activities. If the earth is to con-

tinue to feed its population, if diet is to help prevent the development of chronic diseases, and if we are to learn to accept other cultures, then we need to view food literacy as an educational priority.

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