

WELLNESS IN THE SCHOOLS

A Lunch Intervention Increases Fruit and Vegetable Consumption

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Fruits and Vegetables in School Lunch

The health benefits of a diet rich in fruits and vegetables are well-recognized. A high intake of fruits and vegetables is associated with reduced risks of cardiovascular disease, cancer, and all-cause mortality.¹ A high intake of vegetables is also associated with a reduced risk of weight gain, being overweight, and obesity.² School-based interventions are part of a multipronged approach to promote fruit and vegetable intake in children.

Wellness in the Schools (WITS) is a national non-profit organization that partners with public schools to provide healthy, scratch cooked, less processed meals (the "Alternative" menu), and active recess. The 2010 Healthy Hunger Free Kids Act has made improvements to school meals through strengthening nutrition standards by increasing fruits, vegetables, and whole grains, and decreasing sodium.^{3,4} However, there has not been an increase in scratch cooking or a decrease in pre-prepared processed meals.

In this study, we examined the effects of the WITS programming among second and third grade students in NYC public schools serving a high proportion of students from low-income households. More specifically, the aim was to understand how WITS programming impacted students' school lunch consumption, including their fruit and vegetable intake.



Study Overview

Seven public elementary schools in NYC that initiated WITS programming served as the intervention schools, while another seven schools with similar demographics that served the standard menu and did not receive WITS or other programming that changed school meals or recess acted as the controls. School lunch consumption was measured using a tool known as the *System of Observational Cafeteria Assessment of Foods Eaten (SOCAFE)*, which allowed observers to record what students ate at school lunch.

Components of the WITS Programming

Cook for Kids

Cook for Kids partners trained culinary school graduates (called WITS Cooks) with cafeteria staff to:

- Transition the school from the standard menu offered by the Office of Food and Nutrition Services (OFNS) to the Alternative menu that WITS created with OFNS (i.e., daily scratch cooked meals and less processed entrées)
- Add or expand the salad bar
- Eliminate chocolate milk as a beverage option
- Add a waterjet station if the school did not already have one.

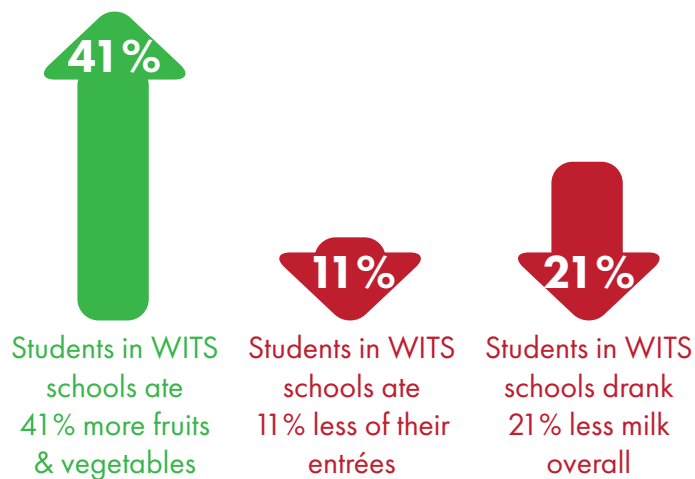
Cook for Kids also teaches children and families how to prepare and cook healthy, tasty, and affordable meals with whole and less processed foods.

Coach for Kids

Coach for Kids used trained fitness professionals to work with students during school recess (both indoors and outdoors) to transform recess from a time of sedentary socializing to a time of increased physical activity and teamwork.

Results

When the students in the WITS schools were compared to the students in the control schools, the students in the WITS schools had more fruits and vegetables on their tray and ate 41% more fruits and vegetables than the students in the control schools. These findings are encouraging as they suggest a change to the Alternative menu is related to a higher fruit and vegetable consumption.



Students in the WITS schools consumed 11% less of their entrées (grains and protein) when compared to students in control schools. This may indicate that the WITS students found the entrées less appealing and were eating less.

For the consumption of milk, the students in WITS schools drank 21% less milk overall than students in the control schools. Part of the WITS programming was to eliminate chocolate milk. The reduction we saw is consistent with other research that showed a reduction in milk when chocolate milk was removed.⁵ In other studies, that reduction did not compromise the intake of key milk-related nutrients and was shown to achieve a significant decrease in the consumption of added sugars.⁵

This study also found that a significant portion of the food on students' trays was not consumed for both WITS and control students. There have been calls to reduce food waste in schools⁶ and guides have been created to determine what was wasted and more importantly, why students were not eating those foods.⁷ Such measures could help reduce food waste and lead to students eating more of the nourishing foods served at school lunch.

More Research is Needed

This study demonstrated that WITS programming made significant changes to the consumption of school lunch and highlights the importance of alternative menus in increasing fruit and vegetable consumption in schools. To increase consumption of alternative menu entrees, WITS programming that heavily focused on increasing fruits and vegetables may need to be adapted to focus more on all meal components, which has been shown in other studies to be effective at increasing the consumption of novel entrées.⁸ More research is needed to understand how different menus impact what students have on their trays and what they eat. More research is also needed on how to combine evidence-based nutrition education⁹ with changes in school meals, in order to increase the nourishing foods that students eat at lunch and to decrease food waste.

The students on the WITS menu ate more fruits and vegetables. This shows menus influence what students eat. More research to determine how combination of less process foods on school lunch menus, combined with robust food and nutrition education, influence students' consumption of all meal components.

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