

BUSD Network for Healthy California 2007-2008 Evaluation Executive Summary

October 2008

The Berkeley Unified School District (BUSD) Network for a Healthy California (*Network*) Program provides cooking and gardening classes in all public schools in Berkeley that qualify for their services by having 50% of more students eligible for free or reduced lunch. The University of California at Berkeley's Dr. Robert C. & Veronica Atkins Center for Weight and Health (CWH) was contracted to evaluate the effects of these cooking and gardening classes on food behavior, specifically on consumption of fruits and vegetables during lunch time.

CWH gathered information from 5th graders in two *Network*-funded schools, including: preferences for fruits and vegetables, using a Network for a Healthy California questionnaire adapted to include specific fruits and vegetables covered in the 2007-8 school year through the Harvest of the Month curriculum; types of fruits and vegetables available for lunch (from school or home), assessed by digital photographs taken before students ate; and amounts and types of fruits and vegetables consumed at lunch, assessed by digital photography.

In addition to *Network* sponsored cooking and gardening activities, the BUSD also has changed the school food system for the entire district to introduce healthy and fresh food, including salad bars, as part of the Berkeley School Lunch Initiative (SLI). CWH is also conducting an evaluation of SLI. Support from the Chez Panisse Foundation through the SLI evaluation and from UC Berkeley allowed for these same data to be gathered from 5th graders at 2 non-*Network* funded schools in Berkeley. In addition, consumption data from 3-day food diaries collected as part of the SLI evaluation from students at the same 4 schools was analyzed. (More information on the SLI evaluation and methods are available from CWH.)

Findings

Consumption of fruits and vegetables: Examining Photographs of Students' Lunches

- Analysis of the photography data comparing school lunches with lunches brought from home found significant differences in vegetables available and vegetables consumed in this context, with all schools offering healthier school lunches, cooking and gardening classes being offered at *Network* schools, and other elements of the School Lunch Initiative. **Among schools participating in the School Lunch Initiative, students who ate school lunch consumed over 3 times as many vegetables as children who brought lunch from home.**
- **NOTE:** Because more students at *Network* schools ate school lunch than students at non-*Network* schools (69% at *Network* schools versus 29% at non-*Network* schools), statistical analysis could not distinguish between the impact of *Network* activities alone and the impact of eating school lunch alone without also receiving *Network* activities, given the small sample size. Further research using larger and weighted samples would allow this issue to be explored further.

- Students at *Network* schools had more vegetables on their plates than those at non-*Network* schools before they began eating, a statistically significant difference.
- Students at *Network* schools consumed more vegetables (nearly 1 cup at *Network* schools versus roughly $\frac{3}{4}$ cup at non-*Network* schools), although this difference was not statistically significant.
- There was no difference found in fruit consumption during lunch between students at *Network* and non-*Network* schools. The average amount on the plates before eating was virtually identical at over 0.8 cups, and students ate nearly all of the fruit on their plates.

Data from 3-day food diaries comparing intake of students over 2 years confirm higher consumption of fruits and vegetables among students at *Network* schools

- Data from the 3-day food diaries show a strong and statistically significant pattern over time. **Most strikingly, while consumption of fruit and vegetables *declined* by about $\frac{1}{4}$ cup among students at the non-*Network* schools between 2007 and 2008, consumption *increased* among students at *Network* schools by about $\frac{3}{4}$ cup, a statistically significant difference.**
- Students from *Network* schools reported eating more fruit both in and out of school, and more vegetables during school, and students from *Network* schools also reported eating more seasonal fruits and vegetables.

Overall, differences found in vegetable consumption during lunch, and changes in consumption over time from food diaries indicate continuing differences in consumption between students at *Network* schools and students at non-*Network* schools, possibly indicating the impact of *Network* supported activities. It should also be noted that positive changes in the consumption of fresh fruits and vegetables seen at the *Network* schools may have a greater impact on the nutritional status of BUSD students given that proportionately more low income children, who tend to have lower intakes of fresh fruits and vegetables, are enrolled at the *Network* schools.

Funded by the USDA's Food Stamp Program, through the Network for a Healthy California. This institution is an equal opportunity provider and employer. The Food Stamp Program provides nutrition assistance to people with low income. It can help you buy nutritious food for a better diet. For more information on the Food Stamp Program, call 1-888-328-3483. Additional support was received through the SLI Evaluation, with funds provided by The Chez Panisse Foundation through the generous support of the Rodale Inc. and the Rosalinde and Arthur Gilbert Foundation.