Network for a Healthy California

Impact/Outcome Evaluation Project

(Statewide Aggregated Data)

FFY 2012

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Section B: State Nutrition Education Final Report Summary FFY 12

Section B. Final Report Summary for Evaluations.

Provide the information requested below for any significant evaluation efforts (costing greater than $400,000) that were completed during the previous year.

In FFY 2004, and pre-dating the current federal requirements, the *Network* asked contractors receiving over $500,000 in Federal Share to conduct outcome or impact evaluation to proactively demonstrate fiscal responsibility. The term "outcome" refers to evaluation conducted to assess change among individuals exposed to an intervention. The term "impact" refers to evaluation conducted to assess change in a group exposed to an intervention and a group not exposed to the intervention or an alternative intervention. Twelve contractors participated in the first year and in FFY 05 the *Network* lowered the participation threshold to $350,000 in Federal Share which resulted in a peak participation of 48 in FFY 07 and most recently to 40 in FFY 12. The 40 contractors in FFY 12 represented nearly $50 million in Federal funds. The total cost of the evaluations conducted by these 40 contractors was approximately $566,301 with a maximum of $82,467 for any single contractor, well below the USDA's reporting requirement for impact evaluation. In FFY 2008 USDA guidance specified "If any proposed SNAP-Ed evaluation activity exceeds $400,000 in a State in any year, it is highly recommended that the State agency include an impact assessment that meets the criteria described in the FNS Principles of Sound Impact Evaluation found at: www.fns.usda.gov/oane/menu/Published/NutritionEducation/Files/EvaluationPrinciples.pdf

1. Name of Project or Social Marketing Campaign

If multiple projects or campaigns were part of a single impact evaluation, please list them all.

ABC USD	School/District
Alameda County Health Care Services Agency	Local Health Department
Alameda County Office of Education (Coalition)	County Office of Education
Alhambra USD	School/District
Alisal Union School District	School/District
Berkeley USD	School/District
California State University, Chico Research Foundation -SCNAC	College/University
Compton USD	School/District
Contra Costa County Health Services	Local Health Department
Del Norte USD	School/District
East Los Angeles College	College/University
El Monte City School District	School/District

Fresno County Office of Education	County Office of Education
Hawthorne School District	School/District
Health Education Council	Local Food and Nutrition Education Project (non-profit)
Humboldt County Office of Education	County Office of Education
Huntington Beach Union High School District	School/District
Long Beach Unified School District	School/District
Long Beach, City of, Department of Public Health	Local Health Department
Los Angeles County Office of Education	County Office of Education
Los Angeles Trade-Technical College	College/University
Los Angeles Unified School District	School/District
Merced Office of Education	County Office of Education
Monrovia Unified School District	School/District
Monterey County Health Department	Local Health Department
Montebello Unified School District	School/District
Newport-Mesa Unified School District	School/District
Orange County Health Care Agency	Local Health Department
Orange County Superintendent of Schools - Coalition	County Office of Education
Pasadena Unified School District	School/District
Riverside, County of, Health Care Services Agency	First 5 Children and Families Commission
San Bernardino County Superintendent of Schools	County Office of Education
San Francisco Unified School District	School/District
Santa Ana Unified School District	School/District
Shasta County Health and Human Services Agency, Public Health Branch	Local Health Department
Shasta County Office of Education	County Office of Education
Tulare County Office of Education	County Office of Education
Ukiah Unified School District	School/District
University of California, Cooperative Extension of Alameda County	University of California Cooperative Extension
Ventura Unified School District	School/District

2. Key Evaluation Impact(s)

Identify each impact being assessed by the evaluations. For example are SNAP-Ed participants more likely than non-participants to report they intend to increase their fruit and vegetable intake? Or do a greater proportion of SNAP-Ed participants choose low-fat (1% or skim) milk in the school cafeteria compared to non-participants?

The primary outcome for the impact/outcome evaluation project was fruit and vegetable consumption. The secondary outcomes were factors that influence it including those listed in Table 1.

Table 1: Impacts Assessed by the Evaluation and Number of Contractors Measuring Each	
Fruit and vegetable consumption (40)	Access to fruit and vegetables (30)
Other food/beverage consumption (38)	Physical Activity (30)
Other dietary habits (38)	Food Security (8)
Perceived parental consumption (30)	Self-rating of dietary habits (8)

3. Evaluation participants.
Describe the population being evaluated and its size. For example, all (1200) kindergarten students at public schools in one school district.

Forty contractors in seven channels collected data from a total of 12,064 individuals (Table 2). Most of the contractors provided nutrition education in schools whether or not they were in the school channel (Table 3). Overwhelmingly, both adult and youth contractors worked in schools, with most of this work occurring during the school day. Among all age groups, 90% of interventions were conducted at school sites, either during the school day, after school, or a combination of both. Of these interventions in school sites, 78% were conducted exclusively during the school day. In addition to school sites, contractors providing nutrition education to adults also worked in shelters, elderly service centers, public housing, and Head Start sites.

Table 2: Number of Matched Surveys, Intervention and Control, for All Contractors			
Channel of Impact/Outcome Evaluation Contractor	Number of Matched Surveys-Intervention	Number of Matched Surveys-Control	Total
School/District (19)	5,475	452	5,927
College/University (3)	379	0	379
County Office of Education (9)	1,964	528	2,492
Local Health Department (6)	2,308	35	2,343
First 5 Children and Families Commission (1)	100	62	162
University of California Cooperative Extension (1)	82	0	82
Local Food and Nutrition Education Projects (1)	679	0	679
Total (40)	10,987	1,077	12,064

Table 3: Number Youth and Adult Intervention/Control Sites				
	Youth Intervention Sites	Youth Control Sites	Adult Intervention Sites	Adult Control Sites
At School - School Day	171	29	29	1
At School - After School	19	0	11	0
At School - School Day & After School	1	0	24	0
Shelters	0	0	7	4
Elderly Service Sites	0	0	5	0
Public Housing	0	0	3	0
Head Start	0	0	1	0
Other	0	0	12	0

4. Assignment to intervention and control or comparison conditions

a. **Describe the unit of assignment to intervention and control groups.**
For example, an intervention focused on kindergarten students may assign school districts, individual schools, classrooms, or individual student to intervention and control groups.

Most frequently, the site (e.g. the particular school setting) was the unit of assignment. Impact was assessed by measuring change in individuals that had a pre-test and a post-test.

b. Describe how assignment to intervention and control groups was carried out.
Be explicit about whether or not assignment was random. For example, ten kindergarten classrooms were randomly assigned to intervention and control groups.

Three contractors **randomly sampled** participants, and the remaining thirty-seven contractors recruited participants using **convenience sampling** methods.

c. Describe how many units and individuals were in the intervention and control groups at the start of the intervention.

A total of 12,064 individuals participated in the 40 evaluations. Of these, 10,987 received the contractor-specific intervention and 1,077 were in a control group selected by the contractor. Table 4 shows the individuals by age group.

- Intervention: 10,987 (91%)
- Control: 1,077 (9%)

Table 4: Individuals By Age And Condition Of Assignment

Age Category	Intervention Group Participants	Control Group Participants	Total
Youth, 8-13 years	9,302	887	10,189
High School, 14-17 years	884	118	1,002
Adult 18+ years	801	72	873
Total	10,987	1,077	12,064

5. Impact Measure(s)

For each evaluation impact, describe the measure(s) used. Descriptions should indicate if the focus is on knowledge, skills, attitudes, intention to act, behavior or something else. Each measure should also be characterized in terms of its nutritional focus, e.g. low fat food preparation, number of whole grain servings consumed, ability to accurately read food labels. Finally indicate if impact data were collected through observation, self-report, or another method.

Table 5 shows the tools used to measure the change in fruit and vegetable consumption, the number of contractors that used the tool and the number that showed a statistically significant difference.

Table 5. Measures of Fruit and Vegetable Consumption and Physical Activity for Adults, Teens, and Youth

Measures of Fruit and Vegetable Consumption for Adults[*] (author)	**Number of Contractors Using the Tool (Number with Significant Results for Fruits & Vegetables Combined)**
• *Food Behavior Checklist* (*FBC*)[1,2,3] and *Fruit and Vegetable Checklist* (*FVC*)[4]	10(7)
Measures of Fruit and Vegetable Consumption for Youth	
• *Network High School Survey* (i.e.*Youth Risk Behavior Survey* (*YRBS*)[6,7,8,9,10]	2(2)
• *Network Youth Survey* (i.e. *SPAN*, but coded differently)[5,6,7,8,9]	30(14)

a. Describe the points at which data were collected from intervention and control group participants.

For example, these points may include pre-test or baseline, midway through the intervention, post-test as intervention ends or follow-up some weeks or months after the intervention ends.

For most contractors, the pre-test took place before the beginning of intervention and post-tests took place after the last intervention session. The span of time between pre-test and post-test varied widely between contractors. For some it was just five weeks and for others, mostly schools, it was a full 9 months.

[*] The number of contractors in Table 4 adds up to 42 because one contractor's (Health Education Council) results were not aggregated due to use of a different survey and thus, are not reflected here; Del Norte USD, Alameda County Health Care Services Agency, and Monrovia USD conducted impact/outcome evaluation with 2 age groups each.

6. Results

Compare intervention and control groups at each measurement point, by individual measure. Report the number of intervention and the number of control group participants measured at each point. Describe any tests of statistical significance and the results.

Fruit and Vegetable Consumption-Adults

The *Food Behavior Checklist* (*FBC*) and *Fruit and Vegetable Checklist* (*FVC*) were used to measure adult consumption of fruit and vegetables of 10 contractors. Both the FBC and the FVC use identical questions to measure fruit and vegetable-related behaviors. These surveys were validated with low-income populations in California making them a fitting measure of consumption for this evaluation. In FFY 12, contractors only used the *FBC* and *FVC* measuring consumption in cups. Contractors provided data using the *FBC* and *FVC* from 873 total individuals from intervention and control groups. Results showed that 801 individuals receiving an intervention reported an increase of 0.68 cups of total fruits and vegetables as compared to a decrease of 0.28 cups in 72 control subjects (Table 6). The increase in each fruit and vegetables alone, and total consumption of fruits and vegetables combined were statistically significant for the intervention group ($p<0.001$). The intervention group also showed significant improvement in eating fruits and vegetables as a snack, eating more than one kind of fruit a day, eating more than one kind of vegetable a day, eating two or more vegetables at their main meal, and eating or drinking citrus fruits or juices ($p<0.001$). Because contractors were asked to focus on increasing intervention sample sizes in FFY 11 and FFY 12, control samples have decreased, thus making the control an ineffective comparison group.

Table 6. *FBC* and *FVC* Combined Fruit and Vegetable Results, Intervention and Control

	N	Pre-test	Post-test	Difference	p-value
Intervention					
Total Consumption (cups)	804	2.54	3.22	0.68	<0.001
Fruit	807	1.22	1.59	0.37	<0.001
Vegetable	808	1.32	1.63	0.31	<0.001
Control					
Total Consumption (cups)	72	2.55	2.27	-0.28	0.032
Fruit	72	1.28	1.06	-0.22	0.008
Vegetable	79	1.26	1.21	-0.05	0.472
Intervention					
Eat FV as Snacks	820	2.75	3.08	0.33	<0.001
Eat >1 Kind of Fruit Each Day	795	2.56	2.91	0.35	<0.001
Eat >1 Kind of Veg Each Day	786	2.67	3.02	0.35	<0.001
Eat 2+ Veg at Main Meal	788	2.53	2.88	0.35	<0.001
Eat/Drink Citrus Fruit or Juice	813	0.80	0.84	0.04	<0.001
Control					

Eat FV as Snacks	79	2.90	2.67	-0.23	0.012
Eat >1 Kind of Fruit Each Day	71	2.45	2.41	-0.04	0.665
Eat >1 Kind of Veg Each Day	70	2.39	2.30	-0.09	0.334
Eat 2+ Veg at Main Meal	69	2.26	2.12	-0.14	0.086
Eat/Drink Citrus Fruit or Juice	79	0.82	0.85	0.03	0.596

Fruit and Vegetable Consumption-Youth

A total of 30 contractors collected fruit and vegetable consumption data from 10,189 youth using the *Network Youth Survey*. Two contractors collected fruit and vegetable consumption data from 1,002 teens using the *Network High School Survey*. The *Network Youth Survey* utilizes fruit and vegetable questions from the *School Physical Activity and Nutrition Project* (*SPAN*). In FFY 12, it was noted that 18 of the 32 contractors using the *Network Youth Survey* or *Network High School Survey* showed decreases in juice consumption. While this may be due to *Network ReThink Your Drink Efforts*, it was decided that juice should not be combined with fruits and vegetables to produce a combined measure of fruit, vegetables, and juice, given different contractors may be communicating different messages. This will be discussed further in the summary section of this report. Results from the *Network Youth Survey* show that youth receiving an intervention had a 0.38 increase in times per day they ate fruits and vegetables ($p<0.001$) (Table 7). Increases in fruit alone and vegetables alone were also significant ($p<0.001$). Juice consumption was down 0.06 times per day, which was a significant decrease ($p=0.004$) (not shown). Results for youth in the control group showed a non-significant decrease in total fruits and vegetables and fruits and vegetables alone ($p=0.069$, $p=0.189$, $p=0.153$). Juice consumption for this group decreased by 0.41 times per day ($p=0.012$).

Table 7. *Network Youth Survey* Combined Fruit and Vegetables Results, Intervention and Control

	N	Pre-test	Post-test	Difference	p-value
Intervention					
Total Consumption (times)	8,658	3.57	3.95	0.38	<0.001
Fruit	8,674	1.89	2.12	0.23	<0.001
Vegetable	8,666	1.68	1.83	0.15	<0.001
Control					
Total Consumption (times)	889	3.26	3.42	0.16	0.069
Fruit	893	1.71	1.78	0.07	0.189
Vegetable	891	1.56	1.64	0.08	0.153

Fruit and Vegetable Consumption-High School

*T*he *Network High School Survey* utilizes six fruit and vegetable consumption questions from the *Youth Risk Behavior Survey* (*YRBS*). Data from high school students receiving the intervention (n=884) show that fruit and vegetable consumption measures alone and combined were significantly impacted (p=.002, p=0.001, and p<0.001) (Table 8). Similar to results from the *Network Youth Survey*, juice consumption among teens also declined (0.05 times/day), though not significantly (not shown). Among the control group (n=118), no significant changes were observed. In fact, for the combined fruit and vegetable measure, students reported eating the same at post-test as pre-test (Table 8).

Table 8. Network High School Survey Combined Fruit and Vegetable Results, Intervention and Control

	N	Pre-test	Post-test	Difference	p-value
Intervention					
Total Consumption (times)	884	5.78	6.28	0.50	<0.001
Fruit	885	2.08	2.26	0.18	0.002
Vegetable	885	3.70	4.02	0.32	0.001
Control					
Total Consumption (times)	118	5.55	5.55	0.00	1.000
Fruit	118	2.19	2.12	-0.07	0.623
Vegetable	118	3.36	3.43	0.07	0.735

One contractor, Health Education Council, used the *School Physical Activity and Nutrition Project* (*SPAN*) questionnaire with a different set of response choices than were used on the *Network Youth Survey*. Because they were the only contractor to use this instrument in FFY 12, their results cannot be combined with other contractors. Their sample of 679 intervention participants showed a total fruit and vegetable increase of 0.09 times/yesterday, however this was not significant (p=0.524).

Social, Environmental, and Behavioral Factors

Some contractors measured changes in cognitive, social and environmental factors using different modular surveys offered in the *Network* Compendium of Surveys. The *Network Youth Survey*, *Network High School Survey* and the *Food Behavior Checklist* offered questions about food and beverage consumption, other than fruits and vegetables, and food preparation practices. Contractors could pick and choose the sets of questions that matched their interventions and administer a survey with those questions. In FFY 12, all contractors utilized one of four surveys: *Network Youth Survey*, *Network High School Survey*, *Food Behavior Checklist* and *Fruit and Vegetable Checklist*. Due to this standardization, fewer contractors opted to utilize optional modules measuring these factors, and as a result, data for knowledge, self-efficacy, outcome expectations, norms, and socialization-encouragement could not be aggregated.

Social Factors

In FFY 12, the only social factor contractors consistently measured was perceived parent consumption (Table 9). Thirty contractors used the 2-item parent consumption factors that were part of the *Network Youth Survey* and *Network High School Survey*. For youth, results showed significant increases in perceived parent fruit and vegetable consumption for the intervention group, and only in perceived parent consumption of vegetables for the control group. No significant changes were observed for the high school students.

Table 9. Changes Observed in Parent Consumption- Youth

	N	Pre-test	Post-test	Difference	p-value
Intervention					
How often do your parents eat fruit?	5,926	2.23	2.26	0.03	0.007
How often do your parents eat vegetables?	6,033	2.27	2.32	0.05	<0.001
Control					
How often do your parents eat fruit?	661	2.16	2.16	0.00	0.905
How often do your parents eat vegetables?	624	2.26	2.33	0.07	0.048

Table 10. Changes Observed in Parent Consumption- High School

	N	Pre-test	Post-test	Difference	p-value
Intervention					
How often do your parents eat fruit?	678	2.13	2.14	0.01	0.778
How often do your parents eat vegetables?	708	2.24	2.26	0.02	0.318
Control					
How often do your parents eat fruit?	96	2.03	2.17	0.14	0.129
How often do your parents eat vegetables?	95	2.04	2.14	0.10	0.251

Access to Fruit and Vegetables

A total of 9,116 youth and 992 high school intervention students answered questions about access to fruit, and 8,692 youth and 972 high school students answered questions about access to vegetables. The questions were: At your *home* do you have fruits / vegetables to eat? The four response categories ranged from *never* to *always*, with an '*I don't know*' option, with scores ranging from 0-2. For youth in the intervention group, access to both fruits and vegetables increased significantly ($p<0.001$) (Table 11). Youth in the control group saw a 0.06 increase for access to vegetables, and this change was also significant ($p=.002$). For high school students, no significant changes were observed in the control or intervention groups for access to fruits or vegetables (Table 12).

Table 11. Changes Observed in Access to Fruits and Vegetables- Youth					
	N	**Pre-test**	**Post-test**	**Difference**	**p-value**
Intervention					
At your home, do you have fruit to eat?	8,235	1.72	1.75	0.03	<0.001
At your home, do you have vegetables to eat?	7,887	1.63	1.69	0.06	<0.001
Control					
At your home, do you have fruit to eat?	881	1.70	1.70	0.00	0.776
At your home, do you have vegetables to eat?	805	1.65	1.71	0.06	0.002

Table 12. Changes Observed in Access to Fruits and Vegetables-High School					
	N	**Pre-test**	**Post-test**	**Difference**	**p-value**
Intervention					
At your home, do you have fruit to eat?	876	1.73	1.73	0.00	0.781
At your home, do you have vegetables to eat?	860	1.68	1.70	0.02	0.148
Control					
At your home, do you have fruit to eat?	116	1.78	1.81	0.03	0.551
At your home, do you have vegetables to eat?	112	1.71	1.71	0.00	0.843

Physical Activity

The 2-item physical activity survey from the *Network Youth Survey* and *Network High School Survey* asked: 'Check the days you exercised or took part in physical activity that made your heart beat fast and made you breathe hard for at least 60 minutes' and 'Check the days you play outdoors for at least 30 minutes'. Response categories ranged from 0-7. At pre-test, youth respondents receiving interventions reported being physically active for 60 minutes 3.47 days this past week, and 3.99 days at post-test ($p<0.001$) (Table 13). The same youth reported a 0.54 day increase in playing outdoors at post-test ($p<0.001$). Though youth in the control group saw slight increases in days spent physically active, changes were not significant. High school students receiving an intervention saw a 0.30 and 0.19 day increase, respectively, in the two physical activity variables ($p<0.001$ and $p=0.032$) (Table 14). Students in the control group did not show a significant change in physical activity.

Table 13. Changes Reported in Days with Physical Activity- Youth					
	N	**Pre-test**	**Post-test**	**Difference**	**p-value**
Intervention					
Physical Activity ≥60 Minutes	8,554	3.47	3.99	0.52	<0.001
Play Outdoors ≥30 Minutes	8,526	3.31	3.85	0.54	<0.001
Control					
Physical Activity ≥60 Minutes	902	3.04	3.18	0.14	0.092
Play Outdoors ≥30 Minutes	871	2.84	3.00	0.16	0.051

Table 14. Changes Reported in Days with Physical Activity- High School					
	N	Pre-test	Post-test	Difference	p-value
Intervention					
Physical Activity ≥60 Minutes	851	3.51	3.81	0.30	<0.001
Play Outdoors ≥30 Minutes	848	3.06	3.25	0.19	0.032
Control					
Physical Activity ≥60 Minutes	115	2.74	2.85	0.11	0.485
Play Outdoors ≥30 Minutes	114	2.54	2.46	-0.08	0.678

Consumption of Other Foods, Food Security, and Eating Habits- Adults

The *FBC* measures dietary practices other than consumption of fruits and vegetables, and adults receiving intervention showed improvement in many of these areas. At post-test, adults reported drinking significantly more milk and significantly less soda and fruit drinks, sports drinks, and punch ($p=0.001$, $p<0.001$, and $p<0.001$) (Table 15). Results showed more adults were using milk on their cereal, eating fish, and using food labels at post-test ($p=0.007$, $p=0.002$, and $p<0.001$). Intervention participants also rated their overall eating habits 0.79 of a point higher on a 1-10 scale at post-test ($p<0.001$). At post-test, adults reported they ran out of food by the end of the month less often ($p=0.028$). No significant changes were observed among adults in the control group.

Table 15. Changes Observed in Other FBC Measures- Adults					
	N	Pre-test	Post-test	Difference	p-value
Intervention					
Drink Fruit Drinks, Sports Drinks, Punch	510	2.01	1.82	-0.19	<0.001
Drink Soda	503	1.80	1.64	-0.16	<0.001
Drink Milk	496	2.72	2.85	0.13	0.001
Drink or Use Milk on Cereal Past Week	507	0.79	0.83	0.04	0.007
Take Skin off Chicken	518	2.93	2.99	0.06	0.223
Eat Fish Past Week	493	0.58	0.65	0.07	0.002
Use Food Labels	488	2.40	2.84	0.44	<0.001
Run Out of Food by End of Month	485	1.91	1.83	-0.08	0.028
Rate Eating Habits	477	5.72	6.51	0.79	<0.001
Control					
Drink Fruit Drinks, Sports Drinks, Punch	35	2.11	2.17	0.06	0.571
Drink Soda	34	1.97	2.03	0.06	0.661
Drink Milk	34	2.41	2.35	-0.06	0.661
Drink or Use Milk on Cereal Past Week	34	0.82	0.91	0.09	0.083
Take Skin off Chicken	35	2.17	2.26	0.09	0.556
Eat Fish Past Week	35	0.4	0.43	0.03	0.800
Use Food Labels	34	2.15	2.18	0.03	0.768
Run Out of Food by End of Month	34	1.71	1.59	-0.12	0.353
Rate Eating Habits	34	6.29	6.26	-0.03	0.935

Consumption of Other Foods & Trying New Fruits and Vegetables- Youth and High School
The *Network Youth Survey* and the *Network High School Survey* also surveyed consumption of foods other than fruits and vegetables, as well preference for trying new fruits and vegetables. Both youth and high school students in intervention groups reported eating more yogurt, yogurt drinks, and, cottage cheese (p=.020 and p<.001) (Table 16 and 17). Youth and high school students also reported less punch, sports drinks, and fruit-flavored drink and sweets consumption at post-test (p<0.001 and p<0.001). Intervention youth ate more cheese, drank more water, and ate fewer French fries at post-test (p<0.001, p<0.001, and p=.023). High school intervention participants reported consuming significantly more milk and less soda at post-test (p=0.005 and p<0.001). Youth and high school students exposed to an intervention reported an increase in liking to try new fruits, and high school students reported an increase in liking to try new vegetables (p<0.001 and p=0.027). The youth control group reported a significant increase in yogurt, yogurt drink, and cottage cheese consumption and a decrease in consumption of sweets (p=0.001 and p<0.001). The high school control group reported an increase in hot and cold cereal consumption (p=0.005).

Table 16. Changes Observed in Consumption of Other Foods and Trying New Fruits and Vegetables- Youth

	N	Pre-test	Post-test	Difference	p-value
Intervention					
Cheese	8,167	0.83	0.94	0.11	<0.001
Milk	8,663	1.45	1.47	0.02	0.083
Yogurt, Yogurt Drink, Cottage Cheese	8,163	0.40	0.42	0.02	0.020
Hot or Cold Cereal	8,665	0.75	0.76	0.01	0.076
French Fries or Chips	8,670	0.75	0.73	-0.02	0.023
Water	8,522	3.50	3.58	0.08	<0.001
Punch, Sports Drinks, Fruit-Flavored Drinks	8,594	0.9	0.84	-0.06	<0.001
Soda	8,628	0.58	0.57	-0.01	0.225
Sweets	8,639	0.81	0.70	-0.11	<0.001
Eat Breakfast	8,548	0.85	0.86	0.01	0.394
Like to Try New Fruits	8,121	1.36	1.39	0.03	<0.001
Like to Try New Vegetables	8,078	1.08	1.08	0.00	0.744
Control					
Cheese	652	0.73	0.83	0.10	0.024
Milk	890	1.43	1.40	-0.03	0.396
Yogurt, Yogurt Drink, Cottage Cheese	652	0.31	0.41	0.10	0.001
Hot or Cold Cereal	894	0.62	0.66	0.04	0.164
French Fries or Chips	891	0.81	0.78	-0.03	0.418
Water	824	3.37	3.43	0.06	0.281
Punch, Sports Drinks, Fruit-Flavored Drinks	887	0.92	0.92	0.00	0.952
Soda	886	0.68	0.75	0.07	0.052
Sweets	886	0.85	0.70	-0.15	<0.001
Eat Breakfast	876	0.85	0.86	0.01	0.678
Like to Try New Fruits	640	1.35	1.36	0.01	0.567

Like to Try New Vegetables	636	1.01	1.01	0.00	0.905

Table 17. Changes Observed in Consumption of Other Foods and Trying New Fruits and Vegetables - High School

	N	Pre-test	Post-test	Difference	p-value
Intervention					
Cheese	892	0.85	0.88	0.03	0.417
Milk	885	1.19	1.28	0.09	0.005
Yogurt, Yogurt Drink, Cottage Cheese	885	0.18	0.27	0.09	<0.001
Hot or Cold Cereal	884	0.47	0.45	-0.02	0.402
French Fries or Chips	893	0.67	0.61	-0.06	0.057
Water	893	3.47	3.40	-0.07	0.175
Punch, Sports Drinks, Fruit-Flavored Drinks	882	0.92	0.74	-0.18	<0.001
Soda	885	0.73	0.60	-0.13	<0.001
Sweets	882	0.68	0.57	-0.11	<0.001
Eat Breakfast	893	0.69	0.70	0.01	0.546
Like to Try New Fruits	893	1.34	1.42	0.08	<0.001
Like to Try New Vegetables	893	1.03	1.07	0.05	0.027
Control					
Cheese	118	1.07	0.84	-0.23	0.023
Milk	118	1.10	1.03	-0.07	0.331
Yogurt, Yogurt Drink, Cottage Cheese	118	0.19	0.22	0.03	0.529
Hot or Cold Cereal	118	0.29	0.48	0.19	0.005
French Fries or Chips	118	0.64	0.64	0.00	1.000
Water	118	3.22	3.14	-0.08	0.567
Punch, Sports Drinks, Fruit-Flavored Drinks	117	0.84	0.76	-0.08	0.337
Soda	116	0.47	0.54	0.07	0.319
Sweets	116	0.66	0.52	-0.14	0.106
Eat Breakfast	118	0.71	0.70	-0.01	0.863
Like to Try New Fruits	118	1.19	1.26	0.07	0.140
Like to Try New Vegetables	118	0.85	0.80	-0.05	0.222

Summary

In sum, data were collected from 12,064 individuals by 40 contractors in seven intervention channels. Contractors working with adults measured fruit and vegetable and other food and beverage consumption, food security, and self-rating of eating habits. Contractors working with youth and teens measured fruit and vegetable consumption and other food and beverage consumption, physical activity, perceived parent consumption, and access to fruits and vegetables.

The results show that contractors increased fruit and vegetable consumption significantly in the youth and adult populations, and for the first time since adopting the *Network High School Survey,* there were significant improvements among teens.

Combined results from the *FBC* and *FVC* showed adults increased fruit and vegetable consumption by over two-thirds of a cup per day. The *Network Youth Survey* showed an increase of 0.38 times yesterday, a 0.11 time per day improvement from FFY 11 results. Most remarkably, results from the *Network High School Survey* show that fruit and vegetable consumption increased by 0.50 times per day, and nearly two-thirds of that was due to increased vegetable consumption. Past data has indicated it is more difficult to create change that improves vegetable consumption. In FFY 12, we saw control group sizes decline, and this was most notable in the adult population. This is due in part to *Network* encouragement of contractors to increase intervention sample sizes. It is anticipated that contractors are more comfortable with collecting larger sample sizes in FFY 13, and as a result, *Network* staff will encourage contractors to increase control sample sizes once again.

The interventions implemented could reasonably be expected to change only some of the factors that were measured. For the youth population, the results showed statistically significant change for access to fruits and vegetables, parent consumption of fruits and vegetables, physical activity, consumption of yogurt, cheese, sweets, sugar-sweetened beverages, water, and trying new fruits. Among high school students, there were significant findings for yogurt, milk, sugar-sweetened beverage, and sweets consumption, and trying new fruits, availability of fruits and vegetables, parent consumption of fruits and vegetables, and physical activity. Adults significantly improved on each fruit and vegetable measure asked, along with consumption of sugar-sweetened beverages, milk, and fish, use of food labels, food security, and self-rating of eating habits.

Just over half of contractors said they specifically emphasized a reduction in sugar-sweetened beverages through *ReThink Your Drink* materials and nine said they used Dairy Council resources. As reducing sugar-sweetened beverage intake becomes a priority area for the *Network*, data show juice consumption is decreasing among youth and teens, indicating *ReThink Your Drink Messages* may also effectively decrease juice consumption. For this reason, and because the American Academy of Pediatrics recommends children consume only 8-12 ounces of juice a day, the *Network* feels it is no longer appropriate to combine pre-post measures of fruits and vegetables with juice. FFY 12 data showed decreased consumption of fruit drinks, sports drinks, punch, and soda, and increases in milk among adults. Among youth, water consumption increased and punch, sports drinks, and fruit-flavored drinks decreased. Among teens, consumption of punch, sports drinks, fruit-flavored drinks, and soda decreased.

While very positive, these results do not capture the full impact of *Network*-funded nutrition education. The changes reported here resulted from varied interventions implemented in settings where contractors have little control over conditions that influence fruit and vegetable consumption. Advertising, availability of high quality fruit and vegetables in schools and homes, and policies that favor the consumption of calorie dense foods are among those that limit the impact of the nutrition education delivered

by *Network*-funded contractors. In FFY 13 when changes in the school meal program help reinforce nutrition education, we anticipate seeing yet more positive change.

7. Reference

Provide a contact for additional details and a reference to any other report of the evaluation.

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