

# SECTION A

## Identifying and Understanding the Target Audience

Needs Assessment

## Section A. Identifying and Understanding the Target Audience

### 1. NEEDS ASSESSMENT METHODOLOGY & FINDINGS

#### Needs Assessment Methodology

*Describe and justify your methodology for assessing the needs of Food Stamp program eligibles in California*

Since Food Stamp Nutrition Education (FSNE) began at the University of California (UC) in Federal Fiscal Year 1992 and expanded to the California Department of Public Health (CDPH) in FFY 1997, needs assessment methods have been continually upgraded to plan, run, and evaluate California's large and diverse Food Stamp Nutrition Education (FSNE) campaign. Initially, we built on available research and existing reporting systems. As targeting requirements became more specific, existing data sources were tailored for the United States Department of Agriculture's (USDA) new requirements, additional surveys were tapped to provide needed information, and special reporting systems were developed. All data presented below has been updated since the FFY08 FSNE state plan and are the most recent available.

FSNE efforts are concentrated in locations demonstrating the most economic need based on USDA specifications for the prevalence of FSP participation/eligibility, low-income census tracts, or schools with high numbers of Free and Reduced Price school meals. The direct service projects target the approximately 1,300 census tracts (of 7,049 in the State) where  $\geq 50$  percent of the residents have incomes below 185 percent of the federal poverty level; other proxy venues serving large numbers of low-income people; the 5,127 schools (of 9,600+ in the State) where  $\geq 50$  percent of the students qualify for Free and Reduced Price Meals (FRPM) (CDE, 2007-08 FRPM data file) (Attachment 5) and qualifying supermarkets and food stores. However, most FSNE-eligible Californians live outside FSNE-eligible census tracts, 58 percent of Food Stamp participants (2004 Medline) and 63 percent of persons with incomes  $<185$  percent FPL (2000 U.S. Census) and therefore are unlikely to receive FSNE directly. Expanded use of other high volume venues like media, supermarkets, low-wage worksites, faith organizations, and community settings is needed to reach these large numbers of the FSNE audience.

#### **Needs Assessment Data Sources**

This section incorporates a variety of existing data sources. To illustrate the demographic characteristics the needs assessment incorporates data from

- USDA's Characteristics of Food Stamp Households Fiscal Year 2006,
- California Department of Social Service's *Food Stamp Characteristics Survey FFY2002* and program information from calendar year 2007, and
- the U.S. Census 2000.

To characterize the nutrition-related behavioral and lifestyle characteristics of Food Stamp Program eligible children, adolescents, and adults in California the needs assessment incorporates data from

- As a general strategy, UC-FSNEP utilizes decentralized needs assessment data from existing data (secondary data collection) and results from previous FSNE program evaluations.
- University of California-FSNE Program's (UC-FSNEP) Food Behavior Checklist (FBC) is used to assess the diet, food-related skills, and behavior practices of all individuals enrolled in the program. The *FBC* is an instrument with 21 questions, 9 of them validated for fruit and vegetable consumption (Townsend, et al., *JNEB*, 35:69-82, 2003). Other questions assess food safety needs, food shopping needs, and other diet practices related indirectly to fruit and vegetable consumption (eating at fast food restaurants, drinking soda, high fat food consumption, drinking low-fat milk).
- UC-FSNEP's evaluations that have been published in U.C. Davis's *California (CA) Agriculture* publication.
- Youth FSNE staff conducts interviews with intermediaries conducting FSNE interventions, as well as other stakeholders, and local evaluations of specific activities are conducted. Results are used for county refinements tailored to meet county needs.
- UC FSNEP directly partners with local based advisory committees; representatives of local, regional and state agencies providing assistance to food stamp recipients/eligibles and school personnel to assess the needs of the target audience within respective counties. Coupled with internal evaluation of program delivery results, open dialogue with community based partners drives UC-FSNEP's identification of potential audiences and avenues for further improvement in nutrition education.
- *Network for a Healthy California (Network)* surveys that monitor the nutrition-related behavioral and lifestyle characteristics of FSNE-eligible persons, as compared with other Californians. *Network* conducts three specialized representative surveys with over-samples of the FSNE-eligible target population.
  - The California Dietary Practices Survey of Adults (18 years and older; CDPS) – Biennially, since 1989
  - The California Teen Eating, Exercise and Nutrition Survey (12-17 years old; CalTEENS) – Biennially, since 1998
  - The California Children's Healthy Eating and Exercise Practices Survey (9-11 years old; CalCHEEPS) – Biennially, since 1999
- Beginning in 2004, the *Network Communications Annual Tracking Survey* was initiated to evaluate *Network Campaign* media efforts (message recall) directed to the target audience (FSNE eligible women).
- In addition to these fully-funded *Network* surveys, *Network* also adds special questions (topics noted in parentheses) to larger representative surveys conducted by others.
  - The Behavioral Risk Factor Surveillance System (BRFSS) – (fruit and vegetable consumption, physical activity, and food security) - Annually, since 1984
  - The California Women's Health Survey - (fruit and vegetable consumption, physical activity, and food security) - Annually, since 2000

- *Network* also plays an active part in the CDPH California Health Interview Survey planning group. Staff has been instrumental in securing placement of several key question topics (noted in parentheses below) on the survey:
  - The California Health Interview Survey (CHIS) - (fruit and vegetable consumption, high-sugar foods, physical activity, and food security) - Biennially, since 2001
- In addition, data from two independent survey sources are utilized:
  - Physical Fitness Testing - *FITNESSGRAM* - body composition, fitness standards achieved for all 5th, 7th and 9th graders - Annually, since 1998
  - Pediatric Nutrition Surveillance System (PedNSS) monitors nutritional status of children (0-19 years old) who participate in publicly funded health programs (short stature, underweight, overweight and at-risk for overweight, anemia, low birth weight, and high birth weight) – Annually, since 1988
- Finally, a number of recently released studies and journal articles are also referenced in this section.

## **Needs Assessment Findings**

### **1. Demographic characteristics of Food Stamp Program eligibles in California.**

*If information is available, discuss geographic location, race/ethnicity, age, gender, family composition, education, and primary language.*

Applying Food Stamp Nutrition Education (FSNE) eligibility categories, California’s total state/federal FSNE efforts target approximately 10.1 million people (See Table 1). The people in these categories are very diverse and in many cases transitional because families struggling out of poverty typically have fluctuating incomes that make them intermittent participants in the Food Stamp Program (FSP). For community interventions, this income level harmonizes with eligibility levels of other means-tested programs such as WIC and free and reduced price school meals.

	<b>Category 1: Certified eligible (people receiving food stamps)<sup>1</sup></b>	<b>Category 2: Likely eligible (gross income &lt; 130% Federal Poverty Level (FPL) but not receiving food stamps<sup>2</sup></b>	<b>Category 3: Potentially eligible: (gross income &gt;130% and ≤185 Federal Poverty Level (FPL) <sup>3</sup></b>	<b>Total<sup>4</sup></b>
<b>Number</b>	2,083,579	4,572,826	3,472,226	10,128,631
<b>California Population<sup>5</sup></b>	6.3%	13.8%	10.5%	30.6%

1 Average monthly number of FSP participants in calendar year 2007. Source: DFA 256 - Food Stamp Program Participation and Benefit Issuance Report [http://www.dss.cahwnet.gov/research/DFA256-Foo\\_422.htm](http://www.dss.cahwnet.gov/research/DFA256-Foo_422.htm).

2 Category 2 is an estimate based on number of people with income < 130% FPL (US Census 2000) minus average monthly number of FSP participants in calendar year 2007.

3 Source US Census 2000.

4 Same figure as US Census 2000 estimate for number of people with incomes < 185%FPL.

5 Using US Census 2000 figure total population = 33,100,044

Category 1: Certified Eligible (e.g. Food Stamp Program participants)

During calendar year 2007, the average monthly FSP participation (federal FSs and California Food Assistance Program) was just over 2 million of California's total population (6.2%). According to USDA's most recent Characteristics of Food Stamp Households Report, FSP households in California tend to be even poorer than national figures with only 5.8 percent in California having incomes above the poverty level compared to 12.7 percent nationally (USDA's Characteristics of Food Stamp Households Fiscal Year 2006).

FSP recipients in California are also more likely to be identified as Hispanic and less likely to be identified as African American or White than national figures. See Table 2 for race/ethnicity by FSNE eligibility category. Attachment 1 provides the race/ethnic breakdown of Food Stamp households for all California counties where the data are available from the Department of Social Services (DSS).

According to USDA's most recent Characteristics of Food Stamp Households report, FSP recipients in California are also much more likely (64.6 percent) to be children (under 18 years) and less likely (2.0 percent) to be "elderly" (60 years or older) than national figures (nationally, 49.2 percent and 8.7 percent, respectively). See Table 2 for age breakdown by FSNE eligibility category. According to the state's most recent Food Stamp Household Characteristics Survey report (2002), 62 percent—or approximately 1.2 million—of California's FS recipients are under the age of 16. The average child's age was 8.3 years, and the average age of head of household was 36.6 years. Among the 683,000 FS households, about 27,000—or 4 percent—were headed by a person over the age of 60, and 80,000—about 12 percent—were headed by a disabled person.

CDSS's FSP Household Characteristic Survey (2002) also reported that half of households included other persons not receiving FSs. About half of households received cash assistance in addition to Food Stamps, and just under a third (32 percent) of households also reported working for salary or wages. In FY05, the average number of persons per household was 2.6.

As for education, 17 percent of the heads of FS households had completed the eighth grade or less, 26 percent had completed some high school and 55 percent completed high school or some college. Seventy-six percent of the heads of household were women; non-citizens made up nine percent of all recipients; and refugees made up two percent. Although there is no primary language information available specifically for Food Stamp participants, among low-income (<150 percent FPL) Californians 5 years and older, over 39 percent report Spanish and 23 percent report Asian or Pacific Island languages as their language spoken at home (U.S. Census, 2000).

Attachment 2 shows the number of FSP participants by county based on the 2007 12-month average. The five counties with the largest share of California's FSP participants are as follows: Los Angeles County (30.2 percent), San Bernardino (7.2 percent), Fresno (6.2 percent), Sacramento (5.8 percent), and San Diego (4.5 percent).

Category 2: Likely Eligible (income < 130 percent FPL but not participating in FSP):

According to the U.S. Census 2000, 6.7 million people in California, or 20.1 percent of the population, have incomes below 130 percent of the Federal Poverty Level (FPL). This number minus the FFY07 monthly average of FSP participants is 4.6 million or approximately 14 percent of the population. See Table 2 for race/ethnicity and age breakdown of people with incomes <130 percent.

Unfortunately, the U.S. Census does not provide educational attainment information at the 130 percent FPL cut-off. However, for those with gross incomes less than 125 percent FPL, 46.5 percent had not completed high school, 22.2 percent graduated from high school, and 31.3 percent had formal education beyond high school.

Attachment 3 shows the demographic profile of individuals below 130 percent including race/ethnicity, age, and family composition statewide and for each California County. Educational attainment is also provided for adults below 125 percent FPL. The five counties where the largest share of California's "likely eligibles" (<130 percent FPL but not participating in the FSP) are as follows: Los Angeles County (36.8 percent), San Diego County (8.7 percent), Orange County (7.5 percent), San Bernardino County (5.3 percent), and Riverside County (4.9 percent).

Category 3: FSNE Potentially Eligible (all persons with incomes greater than 130 percent FPL but less than 185 percent FPL):

According to the US Census 2000, 3.5 million people (10.5% of the total population) in California have incomes greater than 130 percent FPL but less than 185 percent FPL. (See Table 2 for race/ethnicity and age breakdown for this group.) For those with gross incomes more than 125 percent FPL but less than 185 percent, 43 percent completed less than high school, 24.2 percent graduated from high school, and 32.9 percent had formal education beyond high school.

	<i>Category 1: Certified eligible (people receiving food stamps)<sup>1</sup></i>	<i>Category 2: Likely eligible (gross income &lt; 130% Federal Poverty Level (FPL)<sup>2</sup></i>	<i>Category 3: Potentially eligible: (gross income &gt;130% and ≤185 FPL)</i>
<b>Race/Ethnicity</b>			
Hispanic or Latino	27.3%	51.6%	51.8%
White Alone – Non-Hispanic	36.2%	26%	29.4%
Black/ African American Alone (NH)	27.8%	8.9%	6.2%
American Indian/Alaskan Native (NH)	1.4%	.7%	1%
Asian, [Hawaiian] <sup>a</sup> or other Pacific Islanders (NH)	9.6%	10%	9%
Some Other Races or Two or More Races (NH)	1.5%	3.1%	3%
Unknown (NH) <sup>b</sup>	23.6%	-	-
<b>Age</b>			
0-17 Years	64.6%	36.6%	33.2%
18-64	33.4%	55.6%	55.9%
65 Years and Older	2%	7.8%	10.9%

1 Race/ethnic origin of food stamp recipients from CDSS's DFA358F Food Stamp Program Participants by Ethnic Group for July 2007 and age information from state level data presented in USDA's FSP Household Characteristics report Fiscal Year 06.

2 Category 2 also includes food stamp recipients (Category 1) since data to exclude them is not available.

a. "Hawaiian respondents were included in this grouping for Category 1 only.

b The percent "unknown" reflects when FSP household contact does not indicate their race and the worker is unable to determine. This percent with race unknown is much higher among Hispanic or Latino respondents or 71.4% for July 2007.

Attachment 3 shows the demographic profile of individuals below 185 percent including race/ethnicity, age, and family composition statewide and for each California county. The five counties where the largest share of California's "potentially eligible" (incomes > 130 percent FPL but <185 percent FPL) are as follows: Los Angeles County (32.9 percent), San Diego County (8.0 percent), Orange County (7.5 percent), San Bernardino County (5.7 percent), and Riverside County (5.1 percent).

**2. Nutrition-related behavioral and lifestyle characteristics of Food Stamp Program eligible children, adolescents, and adults in California.** *If information is available, discuss implications of dietary and food purchasing habits and where and how Food Stamp eligibles eat, redeem Food Stamp benefits, live, learn, work and play in your State.*

### CALIFORNIA CHILDREN - SUMMARY AND IMPLICATIONS

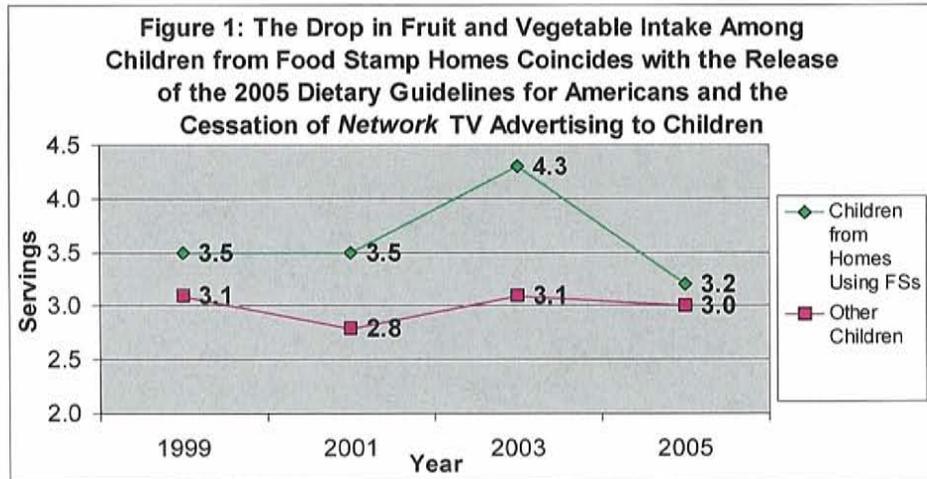
This profile of children is drawn from the statewide, representative 2005 *CalCHEEPS* (N=712), unless otherwise specified. Whenever the data allow, comparisons are made among four groups of 9- to 11-year-old children using Federal Poverty Level (FPL) and Food Stamp (FS) participation. The categories are very low income children with FSs (≤ 130 percent FPL), very low income children without FSs (≤ 130 percent FPL), low income children (>130-≤ 185 percent FPL), and average or higher income children (>185 percent FPL). Some comparisons are presented between children from FS homes vs. other children not receiving FSs. This occurs when only FS participation data are

currently available. Children from homes  $\leq$  185 percent FPL are eligible to receive FSNE. Only statistically significant differences are reported ( $p < .05$ ), unless indicated otherwise.

**Children’s Fruit and Vegetable Consumption Is Too Low:** Findings indicated that children who reside in very low income households receiving FSs averaged 3.2 servings of fruits and vegetables (FVs) on a typical school day. Although not significant, this compared to 3.1 servings among very low income children that did not receive FSs, 2.4 servings among low income children, and 3.0 servings among children from average and higher income households. Across subgroups, children fell 2 to 2½ servings below the 5 a Day recommendation. In addition, few children met the *Dietary Guidelines for Americans* (2005) that are based on gender, age, and activity level. Very low income children without FSs and low income children were less likely to meet the fruit recommendation compared to others. However, low, average, and higher income children were least likely to meet the vegetable guideline (See Table 3).

Table 3. Percent of Children Meeting Fruit and Vegetable Recommendations Based on the <i>Dietary Guidelines for Americans</i> (2005)		
	Cups of Fruit	Cups of Vegetables
Very low income with FSs	39	12
Very low income without FSs	21	19
Low income	19	7
Average and higher income	26	8

Over 5 years (1999-2003), as *Network* and UC-FSNEP interventions aimed at elementary school children have increased, the *CalCHEEPS* documented significant increases in FV consumption among children from FS homes, while FV intake among other children not receiving FSs remained the same (See Figure 1). At baseline in 1999 (N=814), the differences between the two groups were not statistically significant. However, between 2003 and 2005, FV consumption dropped back to baseline levels for FS homes and remained stable among other children. This coincided with the release of the *Dietary Guidelines for Americans* (2005) which significantly increased fruit and vegetable recommendations and the discontinuation of the *Network’s* paid advertisements on children’s television.



Notes: \* p<.05; 1999-2003\*; 2003-2005\*

Further investigation of the 2005 results and subsequent analysis of data from 2007 are needed to explore these findings across all four subgroups. The 2007 *CalCHEEPS* expanded the oversample of FSNE-eligible children used in previous years to help investigate these issues in more detail. Until 2003, the findings suggest that the combination of direct and indirect interventions was both properly targeted and effective.

**Low-Income Children Need Improved School Environments to Facilitate Healthy Lifestyles:** The average daily participation of California students in the national school lunch program is 2.9 million, of whom 74 percent receive free and reduced price meals (2007 *State of the States: A Profile of Food and Nutrition Programs Across the Nation*). State surveillance showed that most children from homes using FSs (88 percent) ate school lunch 3 or more times in the previous week, with three-quarters (74 percent) eating school lunch daily. In contrast, other children not receiving FSs reported 51 and 36 percent, respectively. Ten percent of children eligible for FRPM reported not eating them.

Participation in school meal programs demonstrated a consistent, positive relationship to FV consumption across survey years (See Table 4). Children participating in school breakfast averaged 0.6 to 1.3 more servings of fruits and vegetables while school lunch participants reported eating 0.3 to 0.6 more servings. Higher participation in the school meal programs may help increase FV intake among low-income children.

School Breakfast	1999	2001	2003	2005
Yes	4.3	3.6	4.0	3.5
No	3.0	2.7	3.0	2.9
<i>Difference</i>	<i>1.3</i>	<i>0.9</i>	<i>1.0</i>	<i>0.6</i>
School Lunch	1999	2001	2003	2005
Yes	3.4	3.0	3.3	3.0
No	2.8	2.7	3.0	3.1
<i>Difference</i>	<i>0.6</i>	<i>0.3</i>	<i>0.3</i>	<i>ns</i>

Notes: Within the table, "ns" indicates a non-significant difference.

While almost 90 percent of children from FS homes utilized a school meal program, considerably fewer reported getting nutrition lessons and lessons on exercise and health at school (See Table 5). Access to these school lessons was much more common among other children from non-FS households.

<b>Food Stamp Participation</b>	<b>Lessons on Food, Nutrition, and Health</b>	<b>Lessons on Exercise and Health</b>
Yes	39	57
No	52	69
<i>Difference</i>	<i>-13</i>	<i>-12</i>

Attending nutrition lessons showed a significant positive relationship to FV consumption in 1999, 2001, and 2005, and exercise lessons demonstrated a similar relationship to minutes of vigorous physical activity in 2001 and 2003 (See Table 5a). Increased access to nutrition, exercise, and health lessons at school, especially in conjunction with participation in nutrition assistance programs, appears likely to encourage and empower low-income children to make healthy lifestyle choices.

<b>Nutrition Lesson</b>	<b>1999</b>	<b>2001</b>	<b>2003</b>	<b>2005</b>
Yes	2.7	2.5	3.2	3.2
No	2.5	2.1	3.2	2.8
<i>Difference</i>	<i>0.2</i>	<i>0.4</i>	<i>ns</i>	<i>0.4</i>
<b>Exercise Lesson</b>	<b>1999</b>	<b>2001</b>	<b>2003</b>	<b>2005</b>
Yes	37	41	48	35
No	35	31	37	32
<i>Difference</i>	<i>ns</i>	<i>10</i>	<i>11</i>	<i>ns</i>

Notes: Within the table, "ns" indicates a non-significant difference.

**Children Need to Eat Fewer High Calorie, Low Nutrient Foods:** In 2005, about three-quarters of children who resided in very low income households receiving FSs reported consuming fast food at least once in the past week (73 percent). Not significantly different, this compared to 79 percent among very low income children not receiving FSs and 72 percent among children from low, average, and higher income households. Additional findings showed that very low income children with and without FSs and low income children drank 1.3 to 1.4 servings of soda and sweetened beverages on a typical school day, almost half a serving more than average and higher income children (1.0 servings).

This concern also exists for younger children, although the differences, given small sample sizes, were not significant. In California, 28 percent of 2- to <5-year-old children currently receiving FSs ate fast food on the previous day compared to 21 percent among those without FSs below 300 percent of the FPL and other higher income children (2005 CHIS). Children from FS homes were also twice as likely to report drinking two or more

glasses of soda or sweetened beverages yesterday (22 percent) when compared to those without FSs below 300 percent of the FPL (11 percent) and other higher income children (10 percent).

**Low-Income Children Need More Physical Activity:** Returning to 9- to 11-year-old children, in 2005 fewer than two out of five (39 percent) children who resided in very low income FS households reported meeting the recommendation to get 60 minutes or more of moderate and vigorous daily physical activity (PA). Although not significantly different, this compared to 45 percent among very low income children without FSs, 41 percent among low income children, and 47 percent among children from average and higher income households.

The three state surveys between 1999 and 2003 showed significant increases in reported PA among all children in the state with increases being greatest among children from FS homes. However between 2003 and 2005, the proportion of children from FS households who reported meeting the PA guideline and the average minutes of vigorous physical activity dropped to 1999 values, similar to that found with FV consumption. These decreases were also observed in the state sample as a whole.

**Children Need to Reduce Sedentary Activity:** The Institute of Medicine recommends that children spend less than two hours of recreational screen time a day (*Preventing Childhood Obesity: Health in the Balance*, 2005). Children who reside in households receiving FSs reported spending an average of 103 minutes per day watching television or playing video/computer games. Very low income children not receiving FSs and low income children reported 92 to 94 minutes, respectively, whereas children from average and higher income households spent only 74 minutes, a 29 minute difference between FS homes and the highest income group.

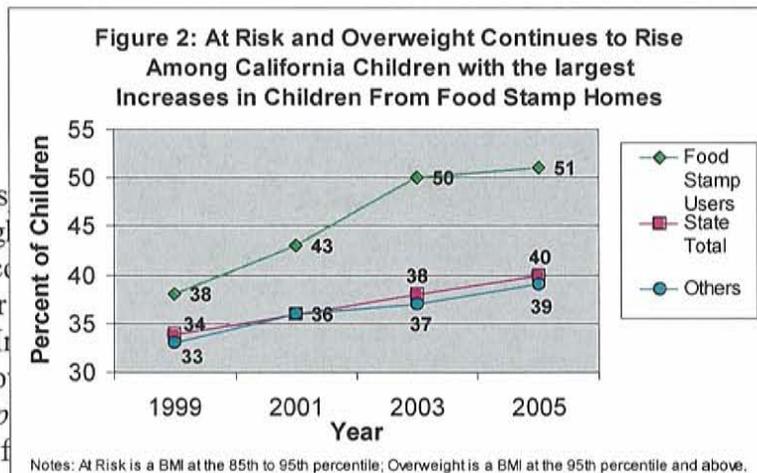
Younger children aged 2- to <5 years old from FS homes (39 percent) were also more likely to report watching 3 or more hours of television on weekdays compared to those without FSs below 300 percent of the FPL and other higher income children (both 27 percent). Over weekends this income disparity widened to 58 percent of children from FS homes and only 34 percent for those without FSs below 300 percent of the FPL and other higher income children (2005 CHIS). These findings did not reach significance due to the small sample sizes.

Studies have shown that children with televisions in their bedrooms have higher BMIs than children without (*Preventing Childhood Obesity: Health in the Balance*, 2005). Returning to 9- to 11-year-old children, the 2005 CalCHEEPS found a positive relationship between FPL and the prevalence of televisions in a child's bedroom. Almost three-quarters (73 percent) of children from FS homes reported having a television in their bedroom. This compared to 69 percent among very low income children not receiving FSs, 64 percent of low income children, and 45 percent among children from average and higher income households, a 28 percentage point difference between the lowest and highest income groups.

**Disparities in Rates of Healthy Weights in Low-Income Children Need to Be Eliminated:** In 2005 the rates of at-risk and overweight were 16 percentage points higher among children from FS homes when compared with children from average and higher income households. While 35 percent of children from average and higher income homes, 39 percent of low income children, and 54 percent of very low income children without FSs reported heights and weights placing them at-risk and overweight. A similar proportion (51 percent) of the children from FS homes were affected, with 16 percent being at-risk and 34 percent already overweight (See Table 6).

	Not At Risk	At-Risk	Overweight
Very low income with FSs	49	16	34
Very low income without FSs	46	24	30
Low income	61	12	26
Average and higher income	65	19	17

Since 1999 the rates of at-risk and overweight continued to rise (See Figure 2). The proportion of children from FS homes increased 13 percentage points from 1999 to 2005 (not significant due to the small sample size). The increase was less striking but significant among children from non-FS households (increased 6 percentage points).



These disparities in overweight and other CHIS). In among low 2006 Report percent) f

California, ing FSs is 17 percent of the FPL nple size; 2005 nce of overweight ition Surveillance tional average (15 pts higher than the

proportion of all U.S. children (14 percent) in a similar age group (2-5 years; *Ogden et al., JAMA, 2006*). Nationally, the prevalence of overweight in low-income 2- to <5-year-old children has increased steadily from 1997 to 2007 (*CDC Pediatric Nutrition Surveillance 2006 Report, 2007*).

**Low-Income Parents Need Support to Help Their Children Achieve a Healthy Lifestyle:** Returning to 9- to 11-year-old children, in 2005 children who resided in households receiving FSs were significantly less likely than other children from non-FS households to say that:

- In their home, fruit is always kept out in a place where they can get them (50 vs. 73 percent) and
- Their family exercises together by doing things like going to the park, playing sports, or riding bikes (54 vs. 75 percent).

These children were significantly more likely to say that:

- Their parents make them stay inside after school rather than letting them play outside (38 vs. 24 percent).

### **CALIFORNIA ADOLESCENTS - SUMMARY AND IMPLICATIONS**

The *California Teen Eating, Exercise and Nutrition Survey (CalTEENS)* (N=1204) was drawn to be representative of the 2.9 million (2000 *US Census*) 12- to 17-year-old teens likely to be in middle or high school in California. In 2000, 10 percent of all Californians below 185 percent FPL were 12- to 17-year-old adolescents. This includes over one million teens. Eighty-one percent of low-income adolescents were non-white (2000 *US Census*), demonstrating the disproportionate number of non-white teens who are poor in California. As with many other teen surveys, the 1998-2004 *CalTEENS* did not ask for family income. However, since minority youth are much more likely to be low-income than Caucasians ( $\leq$  185 percent FPL: 50 percent of African American and 54 percent of Latino teens vs. 19 percent of White teens; 2000 *US Census*), we use minority status as a proxy indicator for FSNE eligibility. Also, questions about hunger and household participation in food assistance programs are combined as a proxy for low-income status, termed "income-related food risk".<sup>1</sup> In this section results are drawn from the 2004 *CalTEENS* unless reported otherwise.

**California Teens Need to Increase Fruit and Vegetable Consumption:** Fruit and vegetable consumption reported by teens remained stable from 1998 to 2004<sup>2</sup>, going from 4.3 to 4.4 servings. There were no significant differences between ethnic groups or teen income-related food risk. Of the 4.4 total servings of fruits and vegetables consumed by California teens, only 1.2 servings were from vegetables or salads, one-third or less than the minimum amount recommended (5 servings for girls and 7 servings for boys) for this age group by the then current *Dietary Guidelines for Americans* (2000).

While there was little change in mean fruit and vegetable intake, the prevalence of teens who reported eating no fruits and vegetables increased significantly from 6 percent in 1998 to 10 percent in 2004. In 2004, teens that were at-risk for overweight or already overweight and those at income-related food risk were significantly more likely to report eating no fruits and vegetables than teens not at-risk (See Table 7). Conversely, the

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<sup>1</sup> Income-related food risk included teens who reported being hungry in the past 12 months or lived in a household that received food stamps or WIC food assistance.

<sup>2</sup> Only 100 percent fruit juices were included in the 2004 *CalTEENS* analysis.

proportion of teens meeting the minimum recommendation for fruit and vegetable consumption increased marginally from 30 to 33 percent between 1998 and 2004.

<b>Weight Status</b>	
At Risk or Overweight	14
Not At Risk	9
<b>Low-Income Status</b>	
At Income-Related Food Risk	14
Not At Income-Related Food Risk	9

**Hunger and Participation in Food Assistance was Highest Among Minorities:** In 2004, 8 percent of African American and 6 percent of Asian teens reported being hungry in the past year because “there was not enough food in the house,” far higher than the percent reported by Caucasian and Latino teens (2 and 4 percent, respectively). Among California teens, 16 percent reported receiving FSs and 12 percent reported using WIC food assistance. Minority teens and those at income related food risk were most likely to report using food assistance programs, as shown in Table 8.

	<b>Free/ Reduced Price School Breakfast</b>	<b>Free/ Reduced Price School Lunch</b>	<b>Food Stamps</b>	<b>WIC</b>
<b>Ethnicity</b>				
Caucasian	13	17	10	3
Latino	30	36	31	17
African American	35	48	18	19
Asian/Other	22	30	17	13
<b>Low-Income Status</b>				
At Income-Related Food Risk	44	60	n/a	n/a
Not at Income-Related Food Risk	17	24	n/a	n/a

**Teens Need to Eat Fewer High Calorie, Low Nutrient Foods<sup>3</sup>:** Although consumption of unhealthy foods remains high, it decreased significantly in recent years. Teens who reported eating two or more high calorie, low nutrient (HCLN) foods decreased from 73 percent in 2000 to 65 percent in 2004. Almost three quarters (73 percent) of the teens at income related food risk reported consuming two or more servings of HCLN foods, significantly higher than teens not at risk (64 percent).

Nearly two thirds (62 percent) of teens reported having one or more sodas on a typical day. African American teens were most likely to report drinking soda on the previous day compared to other ethnic groups. Teens at income-related food risk consumed more soda on average than teens not at risk (1.4 vs. 1.1 sodas, respectively). Two out of five (38 percent) African American teens reported eating at a fast food restaurant on the previous day compared to one out of four teens of other ethnicities (26 percent of Latinos, 24 percent of Caucasians, and 23 percent of Asian/Other teens).

<sup>3</sup> High calorie, low nutrient foods include pastries (such as doughnuts or muffins), deep-fried foods (such as onion rings or fried chicken), potato chips, sweet snacks (such as cake or cookies), candy, and soda.

**Teens Need More Physical Activity; Low Rates Remain Since 1998:** In 2004, only 40 percent of teens reported being physically active for an hour or more on the previous day, which dropped 1 percentage point since 1998; a non-significant change. The proportion of African American teens active for 1 or more hours on the previous day decreased from 44 percent in 1998 to 32 percent in 2004, the largest decrease among ethnic groups. In 2004, African Americans, Latinos, and teens at income-related food risk were least likely to reach this guideline (Table 9).

<b>Table 9. Meeting Physical Activity Recommendations from the 2000 Dietary Guidelines for Americans and Healthy People 2010, Percent of Adolescents, 2004</b>			
	<b>One Hour or More/Day of Any Physical Activity</b>	<b>Vigorously Active for 20 Minutes 3 or More Days/Week</b>	<b>Moderately Activity for 30 minutes 5 or More Days/Week</b>
<b>Ethnicity</b>			
White	47	79	31
African American	32	77	35
Latino	35	71	23
Asian/Other	41	72	38
<b>Low-Income Status</b>			
At Income-Related Food Risk	29	69	30
Not at Income-Related Food Risk	45	76	29

Healthy People 2010 recommends that adolescents engage in 30 minutes of moderate physical activity 5 days a week and 20 minutes of vigorous physical activity 3 days a week. The 2010 goals are:

- 35 percent of the adolescent population meeting the moderate physical activity recommendation and
- 85 percent meeting the vigorous activity recommendation.

In 2004, only 29 percent of California teens met the guideline for moderate activity and 75 percent reached the vigorous activity recommendation. Latino teens were less likely to meet the Healthy People 2010 physical activity guidelines compared to other ethnic groups. Teens at income-related food risk were significantly less likely to meet the vigorous activity recommendation than teens not at risk.

The FITNESSGRAM, conducted by the California Department of Education (CDE) in all California public schools for 5<sup>th</sup>, 7<sup>th</sup>, and 9<sup>th</sup> graders, measures adolescent fitness performance.<sup>4</sup> In 2006-2007, it reported that 31 percent of 7<sup>th</sup> and 30 percent of 9<sup>th</sup> graders achieved 6 of 6 fitness standards tested. Again, Latino teens scored the lowest with only 24 percent of 7<sup>th</sup> graders and 23 percent of 9<sup>th</sup> graders meeting all 6 fitness standards, compared to 39 and 38 percent among White 7<sup>th</sup> and 9<sup>th</sup> graders.

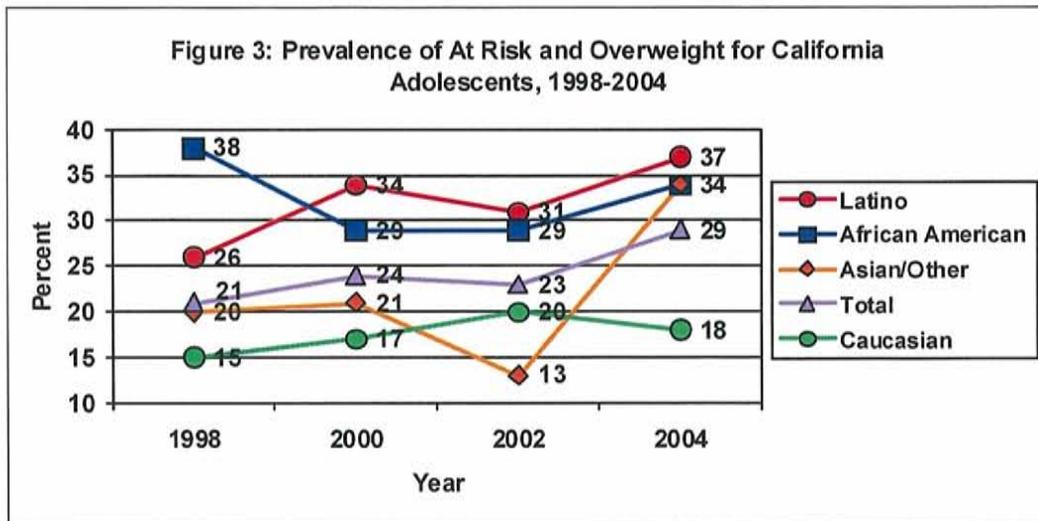
<sup>4</sup> Performance indicators, termed “in the healthy fitness zone” or “needs improvement”, are set to measure whether the adolescents’ level of fitness offers some degree of protection against diseases that result from sedentary living. Body composition is measured through BMI or skin-fold testing as one of the standards for youth to meet the “healthy fitness zone” and is reported independently of the other standards. Standards for the six measures can be found at <http://dq.cde.ca.gov/dataquest/PhysFitness/appendix1.htm>

**Teens Need to Reduce Sedentary Activities:** On average, teens reported just over two hours (129 minutes) of television viewing and computer use for fun in 2004. Sedentary activity has remained stable since 1998. African Americans, Asian/Other teens, and those at income-related food risk reported about 40 minutes more than their counterparts (Table 10). Healthy People 2010 recommends that adolescents spend 2 or fewer hours a day watching television. In 2004, two thirds of teens met this guideline. Just over half of African American teens and Asian/Other teens reported watching two or fewer hours of television, compared to more than two thirds of Latino teens and almost three quarters of Caucasian teens.

<b>Ethnicity</b>	<b>Mean Minutes</b>
Caucasian	114
Latino	165
African American	125
Asian/Other	164
<b>Low-Income Status</b>	
At Income-Related Food Risk	159
Not at Income-Related Food Risk	119

**Reduce Rates of Overweight Among Teens:** In 2004, 29 percent of teens were at-risk or already overweight<sup>5</sup>, a significant increase of 8 percentage points since 1998. In 2004, over one-third of Latino, African American, and Asian/Other teens were at-risk for overweight or already overweight, compared to 18 percent of Caucasian teens. The prevalence of at-risk and overweight among Latino and Asian/Other teens increased significantly from 1998 to 2004 (Figure 3). Teens at income-related food risk were more likely to report being at-risk or overweight compared to teens not at risk (35 percent vs. 27 percent, respectively). Between 2002 and 2004 the prevalence of at-risk for or overweight in teens at income-related food risk increased significantly from 26 to 35 percent, respectively. This increase was not seen among other teens.

<sup>5</sup> At-risk is defined as a BMI  $\geq$  85<sup>th</sup> percentile but  $<$  95<sup>th</sup> percentile and overweight is a BMI  $\geq$  95<sup>th</sup> percentile.



Source: CalTEENS 1998-2004

The 2006-2007 FITNESSGRAM found that 32 percent of 7<sup>th</sup> and 31 percent 9<sup>th</sup> graders scored below the healthy fitness zone (HFZ) for body composition. Again, African American and Latino teens showed the highest percentage not in the HFZ (Latinos with 40 percent among 7<sup>th</sup> graders and 38 percent of 9<sup>th</sup> graders, African American teens with 34 percent of 7<sup>th</sup> graders and 35 percent of 9<sup>th</sup> graders).

**Improve the School Environment to Support Healthy Eating and Exercise:** In 2004, 30 percent of teens reported fast food served at their school, 59 percent reported an open campus at lunch time, 70 percent reported access to a soda vending machine, and 38 percent reported access to vending machine serving HCLN foods at school. Asian/Other teens were most likely to report fast food served at school, soda vending machines, and HCLN vending machines available at school compared to other ethnic groups. Older teens were more likely than younger teens to have fast food served at school, student stores that sell HCLN foods, soda vending machines, and HCLN vending machines available at school.

Access to unhealthy foods at school has a significant impact on diet. Although the presence of an open campus at lunch did not increase the likelihood of teens eating fast food, teens who reported that the school served fast food on campus were significantly more likely to have eaten fast food. Teens that had soda vending machines at school ate significantly less fruits, juices, and vegetables; however, having soda vending at school was not significantly related to consumption of soda. This may indicate that schools with soda vending machines have an overall poor food environment, with low availability of fruits, vegetables and juices.

Almost one-third (32 percent) of teens reported eating school breakfast on the previous day. Of those that ate school breakfast, more than three-quarters (76 percent) reported that fruits, vegetables, or juices were served at the meal, and most of the teens (88 percent) reported eating these foods. Twice as many teens (63 percent) reported eating school lunch yesterday. Out of the teens that ate school lunch, 81 percent reported fruits,

vegetables, or juices served at lunch and most (77 percent) reported eating them. Latino and Asian/Other teens were more likely to report eating school breakfast compared to African American and Caucasian teens (40 and 35 percent vs. 26 and 24 percent, respectively). Almost half (48 percent) of low-income teens ate school breakfast compared to more than a quarter (28 percent) of higher income teens, a statistically significant difference. Teens that ate school lunch were more likely to report consuming 5 or more servings of fruits and vegetables, compared to teens that reported getting their lunch elsewhere. This finding was also seen for school breakfast participation.

Three-quarters (76 percent) of teens reported taking physical education (PE) at school in 2004. Of those taking PE, teens reported class, on average, four days per week. Half (52 percent) of teens met the *Healthy People 2010* recommendation of participating in daily PE. Teens that reported taking PE participated in significantly more physical activity than those not taking it. Teens at income-related food risk participated in significantly fewer days and minutes than teens not at risk. Forty-four percent of teens reported being involved in organized sports at school, almost half (49 percent) reported using the school gym after school or on weekends, and two thirds (66 percent) reported that their school offered afterschool activities other than sports. Teens at income-related food risk were significantly less likely than those not at risk to report being involved in an organized sport (38 percent compared to 46 percent respectively).

**School-Based and Youth-Led Nutrition and Physical Activity Programs Need Expansion in Middle and High Schools:** School-based nutrition programs with youth involvement show significant positive results among those involved in promotional activity (Hamdan, Story, French, Fulkerson, Nelson, *Journal of Amer. Dietetic Assoc.*, Feb 2005). Similarly, teens who reported having a class on the health benefits of physical activity (73 percent) reported being active for 16 minutes more daily than those who did not have the class (68 vs. 52 minutes, respectively). The 2002 results showed a positive relationship between class participation and days of physical activity per week. In 2004, three out of five (61 percent) California teens reported having a class on healthy eating. Those students who reported having a class on healthy eating reported eating a whole serving more of fruits and vegetables than those who did not (4.8 vs. 3.8 servings). This finding has been consistent since 1998.

#### **CALIFORNIA ADULTS - SUMMARY AND IMPLICATIONS**

The data provided in this section come from the *2005 California Dietary Practices Survey (CDPS)* or the *2003 CDPS* data for comparisons. When more recent data are unavailable, the *2007 Network Communications Annual Tracking Survey (Tracking Survey)*, and the *2005 California Health Interview Survey (CHIS)*.

The *CDPS* over-samples low-income Latinos, African Americans, and other adults to provide greater sensitivity for analyzing data on these typically underrepresented population segments. This allowed the data to be analyzed by ethnicity, income, and by four educational categories, consistent with those used by the national *Behavioral Risk Factor Surveillance Survey* coordinated through the CDC. Beginning with the 2003 *CDPS*, data analysis also included the assessment of results by two new subpopulations

of FSNE-eligible adults, Food Stamp (FS) participants and non-FS participants with household incomes below 130 percent of the federal poverty level (FPL). The FSNE-eligible subpopulation of non-FS participants with household above 130 percent FPL was not included in the 2003 and 2005 *CDPS* data analysis but will be for future analyses. The *Tracking Survey* provides data on three subpopulations of FSNE-eligible women between the ages of 18-54 (FS recipients, low-income mothers with household income below 130 percent of FPL, and low-income mothers with household incomes between 185 to 130 percent of FPL). The *CHIS* survey provided data on food security among low-income California adults (household income below 200 percent FPL).

**Many Low-Income Adults Are Food Insecure and Higher Food Prices are Exacerbating the Situation:** According to the 2005 *California Health Interview Survey (CHIS)*, 2.5 million low-income adults (< 200 percent FPL) in California could not always afford to put food on their table. Thirty percent of low-income adults were food insecure with 9.3 percent of classified as very low food-security (defined as “disruption in eating patterns and reduced food intake in the previous year”). For California households overall (all income brackets), USDA estimates food insecurity at 11.7 percent (average 2003-05) compared to the national rate of 11.4 percent (2003-05; Nord et al., 2006).

In the California Women's Health Study, 71 percent of FS recipients reported some level of food insecurity, which presents a substantial barrier to increasing intake of fruit and vegetables (Kaiser, et al., *PHN*, 2007; 10(6) 574-581). One of the strongest factors associated with food insecurity in this population is not being able to make their FS last 30 days. Running out of food before the end of the month may lead to overeating when food supplies are restored and may partly explain higher rates of obesity among food insecure women in California (Kaiser, et al., *AJCN*, 2004; 80:1372-13780).

The problem of food insecurity appears to be increasing in California, as it is worldwide. In May 2009, the California legislature held a hearing entitled “The Food Crisis” to examine the impact on low-income Californians of rapidly rising food costs in the context of the current economic downturn. A variety of experts gave testimony on the affects of increased hunger and hardship in the state. For example, food bank representatives described the increased pressure they faced to provide services to an increasing number of seniors, adults and children.

**Fruit and Vegetable Intake Among Low-Income Adults Is Too Low:** Many published studies by faculty at the University of California have shown that fruit and vegetable consumption practices of low-income FS families are below the national recommendations (Joy, *CA Agriculture*, 58:206-208, 2004; Joy, et al., *CA Agriculture*, 53:24-28, 1999; Lamp, et al., *JNE*, 31:941-98, 1999; Joy & Doisy, *JNE*, 28: 123-126, 1996; Townsend, et al., *JNEB*, 35: 69-82, 2003; West, et al., *CA Agriculture*, 53:29-32, 1999; Heneman, et al., *JADA*, 2005). Dietary behavior practices have been measured over the last 10 years in 1,447 FS clients enrolled in the University's nutrition education program. Published results, even before the higher 2005 *Dietary Guidelines for Americans* were issued, demonstrate that increased fruit and vegetable consumption was needed by over 70 percent of FS clients

(Joy, *CA Agriculture*, 2004). In addition, a number of other dietary factors that are also indicate need for nutrition education include: consumption of a high fat diet by more than 70 percent of clients; consumption of a diet high in sugar and low in calcium, and a high consumption of soda beverages (instead of water or milk) among adults and youth (Joy, *CA Agriculture*, 2004). A diet rich in folate foods (which include fruits and vegetables) is also needed (Clifford, et al., *JN*, 124: 137-143, 2005).

The 2005 CDPS of 1,408 adults revealed that California adults consumed, on average, 4.4 servings of fruits and vegetables daily. Very low-income adults<sup>6</sup> consumed, on average, only 3.9 servings of fruits and vegetables daily, compared to 4.9 servings for adults with the highest incomes<sup>7</sup>, the group reporting the most servings. Similar differences among income levels occurred for the percent of adults who reported eating 5 or more servings of fruits and vegetables daily. Only one-third of the very low-income adults reported eating 5 a day, while over half of adults in the highest income group did so.

In California, as is also true nationally, there is an association between income and race/ethnicity (US Census, 2000) that permeates fruit and vegetable consumption patterns (See Table 10). Non-Hispanic Whites consumed almost a serving more fruits and vegetables than African Americans (2005 CDPS). Hispanics' fruit and vegetable consumption was similar to their Non-Hispanic White counterparts. Asian and Pacific Islanders reported eating more servings than the other race/ethnic groups.

	<b>Percent Eating 5 or More Fruits and Vegetables</b>	<b>Mean Servings of Fruits and Vegetables</b>
<b>Total</b>	<b>42</b>	<b>4.4</b>
<b>Income</b>		
Less than \$15,000	34	3.9
\$50,000+	51	4.9
<b>Ethnicity</b>		
White	42	4.5
Hispanic	38	4.3
Black	31	3.6
Asian/ Pacific Islander	60	5.2
<b>FSNE eligible status</b>		
FS participants	44	4.6
Non-FS participants	31	4.0
<130% FPL		

Data Source: California Dietary Practices Survey, 2005

Data on the FSNE-eligible subpopulations revealed that Non-FS participants with household income below 130 percent of FPL consumed fewer fruits and vegetables compared to FS participants. FS participant's fruit and vegetable consumption was slightly higher than the state average. Also, a greater proportion of FS participants

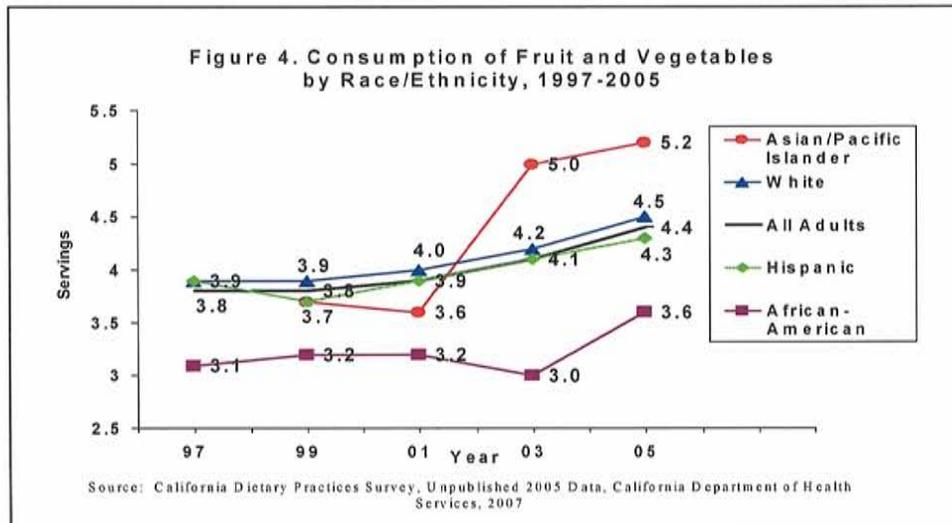
<sup>6</sup> Very low-income adults included those having an annual household income of less than \$15,000.

<sup>7</sup> The highest income adults included those having an annual household income of greater than \$50,000. These income categories are consistent with the CDC's BRFSS.

reported eating 5 a day than non-FS participants below 130 percent FPL as well as the state average (2005 CDPS).

There are indications that trends in fruit and vegetable consumption are shifting upward in California. Comparing CDPS data from our 1997 *Network* baseline to the most recent CDPS data (2005) revealed a 9 point increase in the state average (from 33 to 42 percent, respectively). Similarly, there was a 10 percentage point increase (from 24 to 34 percent, respectively) among very low-income adults who ate 5 or more servings. However, adults in the highest income category (\$50,000+) who ate 5 or more servings increased by 18 percentage points. Over this same period, very low-income adults' daily fruit and vegetable consumption increased 0.8 of a serving—from 3.1 servings in 1997 to 3.9 servings in 2005. Daily fruit and vegetable consumption increased by 0.6 servings in the statewide population and 1 serving in adults in the highest income category.

The proportion of African American and Non-Hispanic White adults who reported eating 5 or more fruits and vegetables increased by 9 percentage points between 1997-2005 (22 to 31 percent, respectively) and (33 to 42 percent, respectively). There was a 3 percentage point increase among Hispanic adults who reported eating 5 or more. From the addition of the race/ethnic category Asian/ Pacific Islander in 1999 to 2005, there was a 15 point increase in the percent of those who reported eating 5 or more servings. There were significant increases in the servings of fruits and vegetables consumed by Non-Hispanic White and Hispanic adults (0.6 and 0.4 servings, respectively, 1997-2005; See Figure 4). African American adults had the lowest reported servings of fruits and vegetables during this time period but saw a 0.5 serving increase in fruit and vegetable consumption (not statistically significant). Asian/Pacific Islander adults increased their fruit and vegetable consumption by 1.5 servings from 1999 to 2005.



From 2003 to 2005, there were some improvements in the fruit and vegetable consumption among FSNE-eligible adults (See Table 11). There was a 1.0 serving increase in reported fruit and vegetable consumption among FS participants, while the

state average only increased by 0.3 servings. Little change was seen in servings of fruits and vegetables eaten by non-FS participants with household incomes below 130 percent FPL. The proportion of FS participants who reported eating 5 a day increased by 14 percentage points between these years (2003-2005 *CDPS*). A smaller change was seen in the state average and the proportion of non-FS participants with household incomes below 130 percent FPL slightly decreased (2003-2005 *CDPS*).

	Percent Eating 5 a Day		Mean Servings of Fruits and Vegetables	
	2003	2005	2003	2005
<b>Total</b>	<b>38</b>	<b>42</b>	<b>4.1</b>	<b>4.4</b>
<b>FSNE Eligibility Status</b>				
FS participants	30	44	3.6	4.6
Non-FS participants <130% FPL	35	31	3.9	4.0
Non-FS participants 130-185% FPL	NA	NA	NA	NA

Data Source: California Dietary Practices Survey, 2003-2005

**Spreading Awareness of Healthy Eating Messages Among Low-Income Adults:** Data from the 2005 *CDPS* have shown a positive association between having heard the recommendations for fruit and vegetable consumption and the amount of fruits and vegetables actually consumed ( $p < .001$ ). There has been increased awareness about the daily recommended amount of fruits and vegetables needed for good health among low-income Californians. More than half of low-income adults (53 percent) reported hearing that 5 or more servings of fruits and vegetables should be eaten daily for good health. This compares with 66 percent of adults in the highest income group who were aware of the fruit and vegetable recommendations.

On average 60 percent of California adults heard that 5 or more servings of fruits and vegetables should be eaten for good health. Similarly, 56 percent of FS participants reported hearing that 5 or more servings, which was slightly more than the 48 percent of non-FS participants with household incomes below 130 percent FPL.

The 2007 *Tracking Survey*, which evaluates awareness of *Network* messaging, assessed knowledge of the potential benefits of fruits and vegetables among mothers who used FSs. Knowledge about the recommended daily intake of fruits and vegetables was low: less than half of our audience (ranging from 38 to 42 percent) answered accurately. Even in the general population audience, only 49 percent answered accurately. There were no significant differences between the four study populations. This new message used cups of fruits and vegetables, so there are no trend data to report. Awareness of the link between diet and disease was also low. Seventy percent of FS mothers were aware of the link, and 63 percent of other low-income mothers were aware of it. However, awareness has increased for FS mothers and decreased for low-income mothers, indicating that additional targeted messaging is important. The great majority of FS mothers agreed that eating fruits and vegetables would help reduce their risk of being overweight (99

percent), help their body (97 percent), and felt they would develop health problems without eating fruits and vegetables (87 percent).

**Nutrition Education Is a Good Investment:** The UC-FSNEP conducted a cost-benefit study for nutrition education in California. For every dollar spent on UC-FSNEP nutrition education in California, between \$3.67 and \$8.34 is saved in health care costs (*CA Agriculture*, Oct. 2006). This analysis demonstrated that nutrition education programs are a good investment, and funding them is sound public policy. In 2004, the amount of money saved on food purchases was evaluated in 460 FS eligible persons enrolled in the UC-FSNEP program. In this assessment significant improvements were demonstrated both in money saving practices and in dietary quality (*CA Agriculture*, Oct. 2004).

**Low-Income Adults Need Increased Availability of Fruits and Vegetables, and Cost Is a Significant Barrier:** The 2005 *CDPS* identified significant barriers to eating more fruits and vegetables. More than half of very low-income adults agreed that fruits and vegetables were hard to buy in fast food places (67 percent) and hard to get at work (62 percent). Forty-five percent of very low-income adults agreed that fruits and vegetables were too expensive, much higher than the 17 percent of adults in the highest income group.

Similarly, a large percentage of FSNE eligible adults experienced barriers to fruit and vegetable consumption. Almost half of FS participants and non-FS participants with household income below 130 percent FPL agreed that finding fruits and vegetables at restaurants was a barrier to eating them (48 and 49 percent, respectively). FS participants were more likely to agree that it was hard to buy fruits and vegetables in fast food places than non-FS participants with household incomes below 130 percent FPL (74 vs. 63 percent, respectively). Also, 44 percent of FS participants and 41 non-FS participants with household incomes below 130 percent FPL saw cost of fruits and vegetables as a barrier, compared to the state average of 31 percent (2005 *CDPS*). While the cost of food in the general Consumer Price Index rose by 5.1 percent from April 2007 to April 2008, the cost of the Thrifty Food Plan (the mix of food items on which low-income people rely) rose even faster. Over the same time period, the cost of the Thrifty Food Plan rose by 7.2 percent. (Rising Food Costs Bearing Down Even Harder on Low-Income Shoppers, *FRAC*, May 2008)

Results from the 2007 *Tracking Survey* were similar. The cost of fruits and vegetables was not much more of a barrier for FS mothers (54 and 44 percent, respectively) as compared to low income non-FS recipient moms (51 and 43 percent, respectively; 130-185% FPL), but were different compared to those with higher incomes (40 and 32 percent, respectively; >185% FPL). The ability to find good, fresh fruits and vegetables was a barrier reported by nearly a quarter (23 percent) of FS mothers.

**Low-Income Adults Need Better Retail Access to Fruits and Vegetables:** In 2003, the great majority of Californians (84 percent) reported getting most of their fresh fruits and vegetables from supermarkets or grocery stores, while 8 percent reported using farmers'

markets, and 8 percent cited effected other venues (2003 *CDPS*). Low-income shoppers (<\$15,000) and FS recipients most frequently identified a specific large supermarket chain (e.g.,  $\geq 10$  stores) as the principal source of their fresh fruits and vegetables.

Convenient access to good quality and affordable fruits and vegetables is an issue for many low-income Californians. A report by the Urban and Environmental Policy Institute at Occidental College in Los Angeles found that middle and upper-income neighborhoods had 2.3 times as many supermarkets as low-income neighborhoods. Similarly, a study in three California counties found only 52 percent of residents in low-income areas lived within one-half of a mile (walking distance) of a supermarket (Transportation for Healthy Communities Collaborative, 2002). Even when available, the quality and selection of the fruits and vegetables may not be adequate to meet low-income consumers' preferences and needs. Recent data collected from 138 stores in 31 low-income census tracts ( $\geq 50$  percent 185 percent FPL) show that 40 percent of stores have limited-to-no fruits ( $\leq 3$  types) and 29 percent limited-to-no vegetables (CX<sup>3</sup> store survey, 2007). Of stores selling produce, 31 percent of stores had vegetables with either poor quality or more poor than good, and 25 percent of stores had fruits that were all poor or more poor than good (CX<sup>3</sup> store survey, 2007). Of the 1,297 FSNE-eligible census tracts, ( $\geq 50$  percent 185 percent FPL), 676 (52 percent) do not include a supermarket, farmers' market, or produce stand. These realities help explain the findings of USDA studies (Ohls, et. al, 1999) that most FS participants tend to use their benefits in areas other than those in which they live. To sustain nutrition education and retail promotion efforts an increase in the types of fruits and vegetables available and especially improved quality are needed. Education and empowerment of residents to request more and better quality fruits and vegetables is critical to increase demand and consumption.

In California, FS participants may redeem their FS benefits at over 17,000 FS-certified retail establishments, including convenience stores, drug stores, and health food stores (Attachment 6). However, the great majority of FS dollars (84 percent) are redeemed at retailers classified as supermarkets. Certified supermarkets are less common in low-income than higher-income areas. For example, supermarkets represent almost a quarter (23 percent) of the FS certified retailers, but in FSNE-eligible census tracts ( $\geq 50$  percent 185 percent FPL) only 12 percent of the certified retailers are classified as supermarkets, suggesting that many FS participants must patronize supermarkets outside FSNE-qualified census tracts. Of the 751 certified retailers classified as "major redeemers" (\$50,000 or more in average monthly FS redemptions) in 2005, 71 percent (530 stores) were located outside of FSNE-eligible census tracts. Within qualifying census tracts, 78 percent (n=138) of stores sampled from low-income neighborhoods ( $\geq 50$  percent 185 percent FPL) were FS vendors, with 80 percent of FS vendors being small markets or convenience stores (CX<sup>3</sup> store survey, 2007). Seventy-two percent of FS vendors from the CX<sup>3</sup> store sample sold produce, but 40 percent sold limited-to-no fruits ( $\leq 3$  types) and 29 percent sold limited-to-no vegetables (CX<sup>3</sup> store survey, 2007). The quality of fruits among close to one-third of FS vendors was all-poor or more-poor-than good (30 percent) and, similarly, among one-quarter of the stores vegetables were either all-poor or more-poor-than-good (24 percent) (CX<sup>3</sup> store survey, 2007).

**Fast Food Intake by Low-Income Adults Is Associated with Low Fruit and Vegetable Intake:** Americans are consuming more food away from home than ever before. The increase in food eaten away from home, fast food in particular, is concurrent with the increase in obesity over the last two decades (Ma, Y., et al., *Am J Epidemiol* 2003; 158:85-92). Fast food tends to be higher in total calories, fat, cholesterol, and refined carbohydrates, which has been shown to be associated with greater weight and weight change over time (Brownell, K.D., *Pediatrics* 2004;113:132.2-4; Bowman, S.A., et al., *J Am Coll Nutr* 2004;23:163-8; Duffey, K.J., *Am J Clin Nutr* 2007;85(1):201-208).

Like other adults, those with low incomes eat many meals away from home. Among the 3,664 participants who completed the FBC, over 80 percent reported that they ate at a fast food restaurant 3 or more times a week. (Joy, UC-FSNEP Final Report, December, 2003)

The 2005 *CDPS* found that, on a typical day, only 30 percent of very low-income adults ate a meal or snack outside of the home, compared to almost half (45 percent) of those in the highest income category. However, very low-income adults who ate meals outside of the home were over twice as likely to have eaten at fast food establishments (75 vs. 34 percent, respectively). This finding poses a serious public health concern because data show that the average consumption of fruits and vegetables is significantly lower in those who eat any meals from fast food establishments, compared to those who do not (3.5 vs. 4.6 servings, respectively,  $p < 0.001$ ; 2005 *CDPS*).

**Low-Income Adults Want and Need Help Improving Food Preparation and Shopping:** A study of the food preparation practices of 97 low-income clients reported that most low-income families would benefit from nutrition education. Cooking skills are needed to prepare low-cost, nutritious meals that meet current dietary guidelines (West, Lamp, Joy, Murphy, et al., *California Agriculture* 53:29-32, 1999). Focus groups conducted before the study indicated that low-income families were greatly interested in learning new ways to prepare foods, especially fruits and vegetables and low-fat recipes.

**Physical Activity Levels Among Low-Income Adults Are Too Low:** The 2005 *CDPS* showed that very low-income respondents were significantly more likely to be sedentary, when compared to those in the highest income category (39 vs. 13 percent, respectively,  $p < .001$ ). When looking at participation in sedentary activities, such as watching television, very low-income watched significantly more television than adults in the highest income category ( $p < .001$ ). Only 38 percent of very low-income adults engaged in moderate or vigorous physical activity for at least 30 minutes, at least 5 days a week outside of their regular job, compared to 62 percent of those in the highest income category. However, very low-income adults were more likely to report that their jobs consisted of mostly heavy labor, when compared to adults in the highest income category (10 vs. 6 percent, respectively).

Similarly, differences in physical activity levels were seen between FSNE-eligible adults and the statewide average. FS participants and non-FS participants with household incomes below 130 percent FPL were more likely to be sedentary, when compared to the state average (40 and 43 vs. 26 percent, respectively). Thirty-nine percent of FS

participants and 35 percent of non-FS participants in households with incomes below 130 percent FPL were moderately active for at least 30 min, at least 5 days a week, compared to 50 percent of the state average.

**Low-Income Adults Encounter Barriers to Physical Activity:** Using a make-time-for-activity scale in the 2007 *Tracking Survey*, 53% of FS mothers reported high self-efficacy for physical activity, yet only 46 percent this group reported five days a week for 30 minutes. Finding a place (14 percent) was a bigger barrier to being physically active for FS mothers compared to other women with higher incomes (<185% FPL, 10%, respectively).

**Disparities in Overweight/Obesity Among Low-Income Adults Must Be Eliminated:** The Healthy People 2010 goal for obesity is 15 percent, 4 percentage points lower than the state average. Low-income Californians, as well as certain ethnic groups, have much higher rates of overweight and obesity. The 2005 *CDPS* found that 30 percent of very low income adults were obese, compared to the 11 percent of adults in the highest income category (See Table 12). African Americans and Hispanics had a higher rate of obesity than their White and Asian counterparts. Education level was also significantly associated with weight status: Adults with less than a high school education had rates of obesity more than twice that of college graduates ( $p < .01$ ). FSNE-eligible adults were more likely to be obese compared to the state average.

Table 12. Percent of Adults Overweight or Obese, 2005		
	Overweight	Obese
<b>Total</b>	<b>36</b>	<b>19</b>
<b>Income</b>		
Less than \$15,000	35	30
\$50,000+	40	11
<b>Ethnicity</b>		
White	36	14
Hispanic	40	27
Black	37	29
Asian/ Pacific Islander	39	3
<b>Education</b>		
Less than high school	36	30
High school graduate	38	20
Some college	36	16
College graduate	36	13
<b>FSNE eligible status</b>		
FS participants	32	33
Non-FS participants		
<130% FPL	36	29

**The Link Between Local Food Environments and Obesity and Diabetes:** A recent study of the link between local food environments and obesity and diabetes in California underscores the importance of making healthy foods more readily available especially for low-income communities (California Center for Public Health Advocacy, Policy Link and UCLA Center for Health Policy Research, April 2008). The study, titled “Designed for Disease”, provided evidence that people who live near an abundance of fast-food restaurants and convenience stores compared to grocery stores and fresh produce vendors

have a significantly higher prevalence of obesity and diabetes. Lower-income communities had relatively worse food environments than higher-income communities and a higher prevalence of obesity and diabetes. However, the rates of obesity and diabetes were the highest among adults who live in lower-income communities with relatively poorer food environments.

**Public Awareness and Use of the Food Stamp Program Needs to Increase:** According to the most recent USDA participation rates, overall only half of the people who are eligible for FSPs in California receive them and just 34 percent of the eligible working poor do so (*Castner, et. al, 2007*). Research has shown that income-eligible persons often do not participate in the FSP because they are unaware of the program or they do not believe they are eligible. The amount of FSP promotion that FSNE is allowed by USDA to provide is very limited.

### **3. Other nutrition-related programs serving low-income persons in California.**

*Discuss the availability of other nutrition-related programs, services, and social marketing campaigns (i.e., EFNEP, Child Nutrition Services, etc).*

USDA's 2009 FSNE Guidance asked for a complete summary of each state's nutrition education activities. California's State agencies administer federal categorical programs that may include nutrition education, principally through USDA, the Health Resources and Services Administration, and the Centers for Disease Control and Prevention. Some State funded categorical programs allow local contractors to include nutrition education as an option through "local assistance" funding to units of local government and through competitive grants to public and non-profit organizations. Over the past decade as concern about obesity has risen, so too has the allocation by county, school district, and other local governments of local and State funds for nutrition education. By far, most of these funds appear to be targeting lower-income groups and communities. In spite of the increasing number of federal and state laws on nutrition policies, obesity prevention and school wellness, there are as yet no federal or state funds earmarked for nutrition education in schools.

The list of other nutrition-related programs serving low-income persons in California is available below. Brief summaries of current program activities are provided in Attachment 7. Attachment 7 also includes an overview of the Intra- and Inter-Governmental Infrastructure to Coordinate Efforts among Programs.

- California Obesity Prevention Plan
- CDC Nutrition, Physical Activity, and Obesity Program Cooperative Agreement Funding Opportunity
- Establishment of the California Department of Public Health and Department of Health Care Services
- California Legislation

CATEGORICAL PROGRAMS OPERATED BY CALIFORNIA STATE GOVERNMENT

- Department of Social Services
  - Food Stamp Program
  - Emergency Food Assistance Program
  - California Food Assistance Program
- Department of Public Health and Department of Health Care Services
  - Women, Infants and Children (WIC) Program - <http://www.cdph.ca.gov/programs/wicworks/>
  - The Maternal, Child and Adolescent Health (MCAH) - <http://www.cdph.ca.gov/programs/MCAH>
  - The Office of Family Planning (OFP) Branch - <http://www.cdph.ca.gov/programs/OFP/>
  - The Children’s Medical Services (EPSDT) - <http://www.dhcs.ca.gov/services/Pages/cms.aspx>
  - California Project LEAN (Leaders Encouraging Activity and Nutrition) (CPL) - [www.CaliforniaProjectLEAN.org](http://www.CaliforniaProjectLEAN.org)
  - The California Center for Physical Activity (Center) - [www.caphysicalactivity.org](http://www.caphysicalactivity.org).
  - School Health Connections - [www.dhs.ca.gov/schoolhealth](http://www.dhs.ca.gov/schoolhealth)
  - Coordinating Office for Obesity Prevention (CO-OP) - <http://www.cdph.ca.gov/programs/Pages/CO-OP.aspx>
- University of California
  - Center on Weight & Health, UC Berkeley – [www.cnr.berkeley.edu/cwh](http://www.cnr.berkeley.edu/cwh)
  - Center for Social Marketing and Nutrition, UC Davis – <http://socialmarketing-nutrition.ucdavis.edu/somark.htm>
- California Department of Education – [www.cde.ca.gov](http://www.cde.ca.gov)
- California Department of Food and Agriculture – [www.cdffa.ca.gov](http://www.cdffa.ca.gov)
  - The Dairy Council of California - [www.dairycouncilofca.org](http://www.dairycouncilofca.org)
  - The California School Garden *Network* (CSGN) - <http://www.csgn.org/>
- The California Children and Families Commission - <http://www.cccfc.ca.gov/>

#### **4. Areas of California where Food Stamp Program eligibles are underserved or have not had access to FSNE previously**

All 58 counties receive Food Stamp nutrition education support through the 11 *Regional Networks* of the *Network for a Healthy California* (see map). The Regions provide technical assistance, coordination, media and public relations, educational materials, specific *Network Campaign* interventions, including programs with qualifying retail food stores and low-wage worksites, and some staff support for public/private Regional Collaboratives that focus on regional priorities. Low-resource schools/districts may also receive specific technical assistance from the three Nutrition Education Consultants, two of whom are out-stationed, and provide direct consultation to school districts. All these activities focus on better serving FSNE-eligible populations.

# Attachment 8: California FSNE Infrastructure FY 2009 Planned Sites

County	CPNS Sites <sup>1</sup>	UCD Sites <sup>2</sup>
Alameda	431	90
Alpine	*	
Amador	*	14
Butte	113	107
Calaveras	*	20
Colusa	*	
Contra Costa	94	79
Del Norte	47	
El Dorado	*	
Fresno	67	154
Glenn	11	13
Humboldt	68	
Imperial	16	32
Inyo	*	
Kern	96	
Kings	*	29
Lake	*	
Lassen	*	
Los Angeles	1,157	100
Madera	55	
Marin	66	
Mariposa	*	
Mendocino	41	
Merced	72	86
Modoc	6	
Mono	*	
Monterey	54	35
Napa	16	
Nevada	*	4



— Continued —

County	CPNS Sites	UCD Sites
Orange	1,057	
Placer	*	18
Plumas	*	
Riverside	212	27
Sacramento	88	9
San Benito	*	
San Bernardino	138	
San Diego	43	178
San Francisco	190	87
San Joaquin	42	162
San Luis Obispo	*	20
San Mateo	119	32
Santa Barbara	52	21
Santa Clara	101	43
Santa Cruz	5	1
Shasta	471	79
Sierra	*	
Siskiyou	22	
Solano	21	70
Sonoma	12	
Stanislaus	109	174
Sutter	*	
Tehama	23	44
Trinity	*	19
Tulare	265	86
Tuolumne	*	
Ventura	70	
Yolo	48	95
Yuba	6	
Statewide <sup>3</sup>	936	
<b>Total</b>	<b>6,440</b>	<b>1,928</b>

<sup>1</sup> FFY 2009 Network Project Summary reports (from 6/27/08) for LIA, NIA and continuing LFNE contractors (n=96) but not the planned sites for the Regional Networks for a Healthy California, Network for a Healthy California Campaigns, Faith Based projects or 10 new LFNE contractors planned for FY09.

<sup>2</sup> Includes planned sites from 6/4/08.

<sup>3</sup> Sites by two statewide NIA contractors - CA Association of Food Banks and Central Valley Health Network.

\* County covered by the Regional Network.

The California map shows where the *Network* projects and UC FSNEP intervention sites are serving FSNE eligible families. Planned for FFY09, UC-FSNEP projects will provide nutrition education at 1,928 sites in 31 counties. *Network* projects (includes LIAs, NIAs and special projects reporting as of 6/27/08) but not *Regional Networks*, *Network Campaign* and faith-based projects) plan to provide nutrition education at 6,440 sites in 38 counties of which 1,970 are in low-resource schools. All but 13 counties have at least one direct service FSNE project site. Projects may be administered through the County Extension, a public agency with a Local Incentive Award or a local organization receiving a special project competitively awarded contract from the *Network*.

FSNE efforts are concentrated in locations demonstrating the most economic need based on USDA specifications for the prevalence of FSP participation/eligibility, low-income census tracts, or schools with high numbers of Free and Reduced Price school meals. The direct service projects target the approximately 1,300 census tracts (of 7,049 in the State) where  $\geq 50$  percent of the residents have incomes below 185 percent of the federal poverty level; other proxy venues serving large numbers of low-income people; the 5,127 schools (of 9,600+ in the State) where  $\geq 50$  percent of the students qualify for Free and Reduced Price Meals (FRPM) (CDE, 2006-07 FRPM data file) (Attachment 5) and qualifying supermarkets and food stores. However, most FSNE-eligible Californians live outside FSNE-eligible census tracts, 58 percent of Food Stamp participants (2004 Medline) and 63 percent of persons with incomes  $<185$  percent FPL (2000 U.S. Census) and therefore are unlikely to receive FSNE directly. Expanded use of other high volume venues like media, supermarkets, low-wage worksites, faith organizations, and community settings is needed to reach these large numbers of the FSNE audience.

The counties covered only by the *Regional Networks* are Alpine, Colusa, El Dorado, Inyo, Lake, Lassen, Mariposa, Mono, Plumas, San Benito, Sierra, Sutter and Tuolumne. Based on 2007 monthly averages, those thirteen counties have 28,919 FSP participants, or 1.4 percent of the State's total FSP participants. From a *FSNE Guidance* perspective, a barrier to providing FSNE in these counties is the low number of qualifying census tracts and school districts in these rural areas. For those 13 counties combined, there are only 8 qualifying census tracts, with 10 counties having none. There are only 171 qualifying low-resource schools, more than half of which are located in Colusa, Lake, Lassen, Sutter, and Tuolumne counties; they tend to be small districts unlikely to have the infrastructure needed to administer FSNE.

In counties and project sites the *Network* and UC FSNEP are both serving, services are coordinated in a variety of ways. For example, the *Power Play! Campaign's School Idea & Resource Kits* are on the approved materials list for the UC FSNEP Programs. Many of UC FSNEP's counties promote the *School Kit* to fourth and fifth grade teachers, while promoting Reading Across MyPyramid to the lower elementary grades. Where appropriate, the *Power Play! Campaign* Regional Coordinators also promote Reading Across MyPyramid to interested Kindergarten through third grade teachers. Most *Power Play!* Regional Coordinators work closely with EFNEP and FSNEP staff to cross-promote the programs and coordinate services. State-level *Power Play! Campaign* staff will continue to encourage these relationships and help to facilitate them as necessary. In

addition, state-level *Power Play! Campaign* and Community Development team staff will conduct periodic meetings with UC FSNEP staff to coordinate efforts.

The *Power Play! Campaign* and UC FSNEP have procedures in place to avoid double counting of duplicate school sites in which these programs serve. There is standard language in LIA scopes of work which states that LIAs will coordinate and collaborate with UC FSNEP agencies in their communities in delivering nutrition education. The state-level UC FSNEP and *Power Play! Campaign* staff have agreed to identify a model region in which the two organizations successfully work together to promote nutrition education opportunities to educators. The processes used by the model region will then be shared with the organizations' regional and county level staff across the state.

## **5. Implications of Your Needs Assessment and How These Findings Were Applied To This Current Year's FSNE Plan**

Income-related disparities in fruit and vegetable consumption, physical and sedentary activity, overweight, and the access to food in low-income communities were closely considered in the refinement of CA FSNE interventions proposed for FFY 2009. The *Network* prioritizes funding based in part on the geography and population demographics outlined in the needs assessment. Media buys are also based on the composition of FSP recipients throughout the state highlighted in the needs assessment. In addition, these findings drive regionalized FVPA campaigns and programs adapted to priority populations and the diverse environments where people live, work, play, shop, attend school, and worship across the state. The results will also help increase coordination and communication between funded projects in FFY 2009 to maximize CA FSNE effectiveness in reaching the targeted populations, including continued efforts to strengthen coordination between the *Network* and UC-FSNEP.

Both the scale and the public health significance of the issues described in this needs assessment require coordinated action. At the state level, leadership is provided through a number of mechanisms: the Nutrition Steering Committee (NSC), its Executive Committee, Operations Subcommittee, and action teams; the State Nutrition Action Plan (see Section B, Appendix); a new collaboration with WIC to coordinate introduction of the WIC Food Package; the Inter Agency Food Assistance Committee hosted by CDSS; and the Food Assistance, Nutrition and Outreach (FANOut) committee which includes local partners and stakeholders.

With the inception of the *Regional Networks*, CPNS has successfully brought this expertise to the local level to assist FSNE-funded projects with coordination of events and activities and to benefit from the infusion of state-level leadership principles. Recognizing the results of the needs assessment, the 2008 *Regional Network* Request for Applications was redesigned to further build on these developing synergies. Campaign and program activities were fully integrated with technical assistance and training opportunities provided to local contracts and partners serving the target audience through the Regions. The Retail Program was enhanced by including expanding strategies for retail partnerships and coordinating efforts with WIC in its new food

package roll-out. The Worksite Program will be focused in seven of the 11 regions where there is the highest population to worksite density. As a part of their program planning, each region will develop, and annually update, a comprehensive regional strategic plan addressing program delivery that emphasizes integration of the FVPA campaigns and programs, and communications and media outreach to the Food Stamp-Eligible population. The Regions will work to best identify priority communities, areas of need, and gaps in partnerships and services as they implement social marketing strategies that will achieve greatest results for the region.

A key element of *Network* activities is targeted social marketing strategies that include culturally relevant interventions and public education media campaigns. Through its three population-targeted campaigns for low-income African Americans, Latinos, and 9- to 11-year-old children, the *Network* provides culturally appropriate nutrition education and physical activity promotion materials. The *Network's* Campaigns are tailored to the major groups of FS participants as described in the needs assessment, including Latinos (54%), African Americans (18%), and children (65%). Fruit and vegetable consumption and physical activity levels are low across all of these groups. *Network* interventions address fruit and vegetable consumption as the primary focus and most incorporate PA promotion events. CA FSNE also addresses food insecurity through FS promotion.

The African American Campaign provides services through 6 regional *Networks* and 10 faith-based community projects, supplying services to the nearly 40 percent of African Americans in California who are low-income. The *Campaign* utilizes Body and Soul<sup>®</sup>, an evidence-based health program developed to encourage fruit and vegetable consumption in African American churches; the Latino Campaign will be exploring use of this approach with churches in the Latino community starting late in FFY 2008.

The *Latino Campaign* currently operates in 39 counties located in 9 regions, providing bilingual and Spanish-language materials, training, and technical assistance to qualified organizations and facilitating communication and collaboration among these organizations. The *Latino Campaign* and *African American Campaign* will continue to work to address the health disparities affecting these populations, including higher rates of obesity and certain chronic diseases and, among African Americans, lower rates of fruit and vegetable consumption.

The *Children's Power Play! Campaign* encourages California's low-income 9- to 11-year-old children to eat 3 to 5 cups of fruits and vegetables and get 60 minutes of physical activity every day. Its target audience includes over a half million low-income children, of which nearly 75 percent are Latino or African American. The *Campaign's* materials are available in English and Spanish and have been proven to be effective with an ethnically diverse, low-income audience.

The majority of CA FSNE contractors work with children. This closely reflects the FS recipient population, 65 percent of which are children. Among children, the *Children's Power Play! Campaign* and Harvest of the Month tool kit are designed to increase the number of children exposed to nutrition, physical activity, and health lessons in school

and to promote participation in school meals (as allowable). The FFY 2009 plan will include increased efforts in the areas of physical activity promotion, reduction of sedentary activity, and encouraging parental support through promotions and partnerships.

The *Retail Program* will continue to address the need to increase retail access to fruits and vegetables and provide adults with assistance in food preparation and shopping. Both at the state and local levels, Retail Program staff and partners will actively collaborate with the WIC Program to support implementation of the new WIC food package, especially the addition of fruits and vegetables, which will take place in California at the end of FFY 2009. The *Network's* Worksite Program will seek to improve the availability of fruits and vegetables and opportunities for physical activity at the worksite for the 31.3 percent of California's FS households that have earned income. The Worksite Program carries new healthy eating and physical activity interventions to nearly 160 lower-wage worksites throughout the state.

The *Network's* FFY 2009 plan includes greater reference to empowerment as a nutrition education strategy for addressing these needs assessment findings and more effectively achieving FSNE's goals. While the term "empowerment" has many definitions and connotations, its use here refers to enhancing low-income families' capacity to take action for healthy change at home, at school or work, and in the community. At the individual level, efforts focus on fostering the momentum and self-confidence for healthy behavior change through relevant information, skills development, personalization/ reflection and other proven education strategies. At the community level, efforts require organizing. At both levels, an empowerment process must be highly participatory, build critical awareness, foster engagement and ownership and acknowledge issues of control (Minkler, 2004).

Examples of empowerment approaches in this year's plan include the following:

- The *Network's* statewide advertising campaign, entitled Ownership, is based on formative research indicating that women in the target audience agree that childhood obesity represents a serious health risk, but they 1) lack knowledge of ways to prevent obesity and 2) lack confidence that they can create a healthier environment in their households and in their communities. The campaign features real moms who fit the *Network's* profile of "Champions for Change:" low-income women who have made healthy changes in their households by increasing consumption of fruits, vegetables and physical activity, and who are passionate about creating change in their communities. *Network* Champion Moms lead by example, empowering other moms just like them with the message "if I can do it, so can you," thus speaking directly to the strategy of increasing self-efficacy. By the end of FFY08, the Ownership campaign will have run for two years, creating the need to refresh advertising for FFY09. Formative research conducted in FFY08 indicates that Ownership is on strategy with low-income women, validating plans to carry forward the same strategic approach for the next phase of advertisements.

- The African American Campaign's lead agencies host annual community forums to encourage more residents in FSNE-eligible areas to be involved in creating communities that encourage healthy eating and physical activity. The community dialogue and interaction with local policy makers made possible through these forums has resulted in a variety of collaborative community projects such as gardens, farmers' markets, and safe bike or walking paths that support *Network* goals.
- In the school channel, the Youth Empowerment Initiative (YEI) is a pilot program in its third year. Diverse student teams, together with an adult ally, undertake a multi-step inquiry process for creating meaningful nutrition programs in 11 low-resource sites.

The *Network* also strives to incorporate, to the degree possible within funding guidelines, the successful strategies of other public health initiatives charged with addressing health disparities such as the Centers for Disease Control and Prevention's (CDC) initiative, Racial and Ethnic Approaches to Community Health Across the U.S. (REACH U.S.). Some of the REACH U.S. lessons include 1) using local data to identify problems and report measurable results, 2) provide cultural competency training for providers, and 3) developing community-based culturally appropriate public education. These lessons underscore a common challenge for large scale initiatives such as FSNE. The desire to further standardize efforts for evaluation purposes must be balanced with the need to adapt interventions to local cultures and to allow for meaningful community input (Institute of Medicine's Progress in Preventing Childhood Obesity, 2007).

Training in FFY 2009 will be geared toward making local projects aware of the target audience data in the *Network* needs assessment so that they will be able to utilize this information in their interventions. Focus will also be placed on *Network* and FSNE tools, interventions, and resources which have been developed to meet the needs identified in the *Network* needs assessment and promoted across the *Network* channels. Training will also continue to focus on increasing the quality of program and fiscal/administrative delivery.

The *Network* partnership infrastructure, including the NSC, Action Teams, FANOut, and the new NSC Operations Subcommittee, underpin a crosscutting integrated approach to enhance FSNE. Effective partnerships help the *Network* to widen the reach and effectiveness of FSNE programs in California, helping to fill gaps; implement nutrition education activities for FS eligible families in underserved areas of the state; and leverage limited resources to expand FSNE services.

In addition to implications to California's FSNE state plan, findings of the needs assessment have implications to FSNE policy.

- **Disparaging Foods:** The adult, teen and child surveys each demonstrated income-related differences in consumption of fast food and/or high fat or high sugar snacks and beverages, with prevalence higher among lower income groups. While *Network* messaging emphasizes the positive benefits of a healthy diet and

lifestyle, FSNE's prohibition against nutrition education that conveys negative messages about specific foods, beverages or commodities restricts the range of messaging that can be considered. This prohibition potentially undermines achievement of FSNE's intended behavioral outcomes, especially energy balance. Encouragement to eat additional healthy foods such as fruits and vegetables must be offset by increased calorie expenditure and/or reduced caloric intake from other, ideally less nutritious and higher calorie, foods.

- **Children's Television:** Analysis of *CalCHEEPS* during FFY 08 confirmed the remarkable drop between 2003 and 2005 in fruit and vegetable consumption reported by children from homes participating in the FSP. In 2004, the *Network* stopped using television and other children's media because there were no outlets where half or more of the audience has household incomes below 185 percent of the FPL. Given the proven effectiveness of television advertising targeting children (VERB, 2008), this USDA policy warrants reconsideration.
- **Environment:** The importance of environmental influences that reduce access to healthy eating and physical activity opportunities is increasingly well appreciated. Multiple needs assessment sources corroborate the relative lack of affordable, good quality fruits and vegetables in many low-income areas. However, FSNE funding may not be used for efforts that aim to directly improve environments. *Network* education efforts do strive to indirectly improve environments by increasing consumer demand for healthy food(s), especially fruits and vegetables.
- **Promoting other Federal Nutrition Programs:** The needs assessment underscores the importance of full participation in the array of reinforcing federal nutrition assistance programs. Participation in school lunch and school breakfast demonstrated a consistent, positive relationship to fruit and vegetable consumption. However, FSNE funding may not be used to promote participation in school breakfast programs or any other federal nutrition assistance other than the FSP.
- **Systems, Policy, and Environmental Change:** Systems, policy, and environmental change are major components of many of the most effective public health social marketing efforts. Prior to FFY05, the *Network* had been supported in its efforts to effect policy, system, and environmental change. However, new direction in FSNE *Guidance* after that time point began to severely restrict our efforts. For example, our many school-based contractors had become engaged in implementation of nutrition-related modules of the School Health Index, a standardized prevention including a self-assessment and planning guide developed by the Centers for Disease Control. The process of completing the Index helps a school identify those areas of highest priority for improving youth health risk behavior in areas like nutrition and physical activity. The *Network* had even developed a fruit and vegetable-specific School Health Index module, directly addressing those aspects of the school environment that synergistically intersect with more individually-directed nutrition education to enhance its effect. The continued prohibition against active engagement in systems, policy, and environmental change work is counter-intuitive when working with a population that faces so many barriers associated with poverty, accessibility, targeted marketing, and distribution of resources.

- **The Food, Conservation, and Energy Act of 2008 (H.R. 2419):** The Nutrition Title of the Food, Conservation, and Energy Act of 2008 (otherwise known as the Farm Bill) was enacted into law on May 22, 2008. The final bill makes numerous improvements in domestic food assistance programs to help low-income Americans put food on the table in the face of rising food and fuel prices. The Nutrition Title provides more than \$10 billion over ten years in increases in these programs — including \$7.8 billion for the Food Stamp Program, \$1.26 billion for the Emergency Food Assistance Program, and \$1 billion for the free fresh fruits and vegetable snack program, which is targeted to schools with high shares of low-income families. The bill would also provide a stronger statutory framework for Food Stamp Nutrition Education. The Manager’s Report, which accompanies the final legislation, recognizes that dietary and physical activity behavior change is more likely to result from the combined application of public health approaches and education than from education alone, and provides direction to USDA from Congress on the types of approaches that should be supported and encouraged within nutrition education under the Food and Nutrition Act, including those that are consistent with recommendations and actions of expert bodies to promote healthy eating and physical activity behavior change.