




The California Plate Project: Increasing Fruit and Vegetable Consumption with Low-Income Families





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California Plate Project



The overall aim of this project was to enhance the likelihood of increasing fruit and vegetable consumption among low-income families in California.



A diet high in fruits and vegetables is associated with decreased risk for certain cancers and other chronic diseases.


Fruit and Vegetable Consumption in the US.

- Current Dietary Guidelines recommend having 5-13 servings of fruits and vegetables a day.
- Most adults in the US consume a total of two to three servings of fruits and vegetables a day.

EFNEP: Expanded Food and Nutrition Education Program

- Nutrition Education Program for low-income families funded by USDA.
- The goal is to teach low-families to eat healthy, increase physical activity, prepare foods safely, save money when buying food.

California EFNEP's Nutrition Education Curriculum



The information is designed to help adults increase their consumption of healthy foods that are associated with chronic disease prevention and maintenance of a healthy weight.

Key Messages of the Curriculum

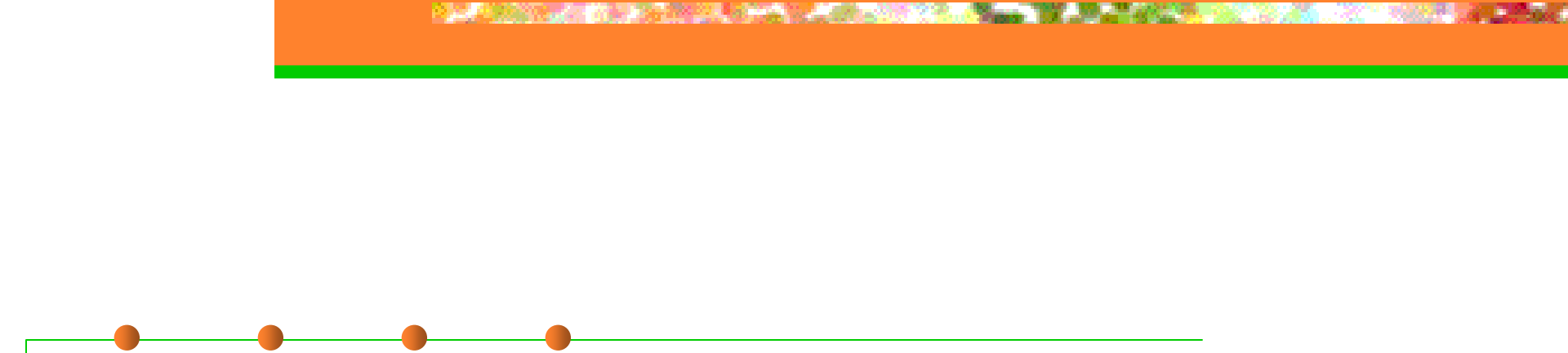
- Vary your Veggies, and Focus on Fruits
- Make Half Your Grain Whole
- Build Strong Bones
- Go Lean with Protein

Key Messages of the Curriculum (con't)

- Make a Change (eat less sugar, fat, and sodium)
- Get Moving (increase physical activity).
- Plan, Shop and Save (saving money)

Serving Size: The Most Difficult Concept In Nutrition Education

- Serving sizes are very difficult to explain to participants.
- Difficult for participants in nutrition education classes to measure serving sizes.



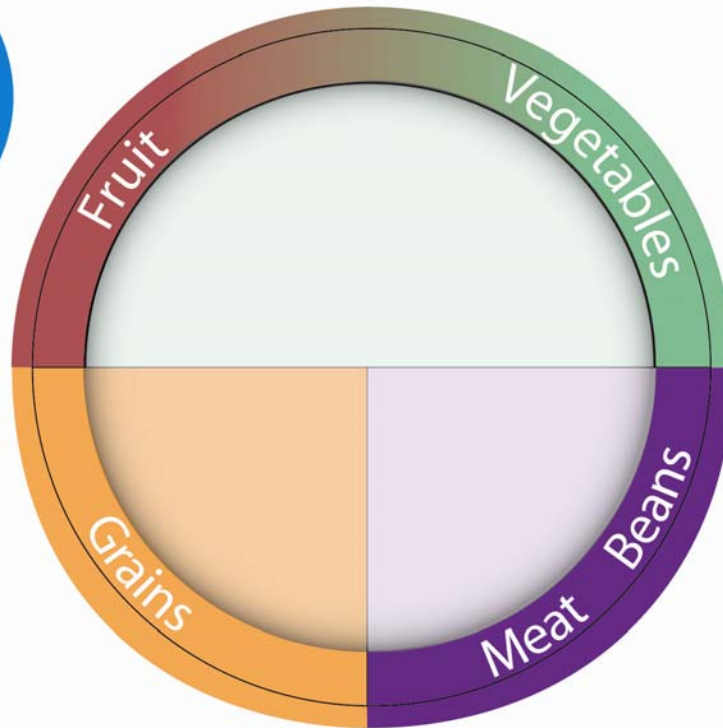
How do you address the problem of how much of what type of food to put on one's plate?

Design a visual aid that clearly communicates the proportions of food one needs to eat to meet the Dietary Guidelines.

The California Healthy Plate Visual



My
Healthy
Plate



California Plate project goals:

- Develop the My Healthy Plate graphic.
- Develop activities using My Healthy Plate and integrate into the curriculum.
- Test the graphics and activities in group classes in English and Spanish.
- Pilot test the addition of My Healthy Plate materials into the standard nutrition curriculum.

Methods

- Two educational approaches were evaluated.
 - Standard curriculum as the control.
 - Same curriculum with the California Plate materials and activities added.

Method's con't

- Participants were recruited through federally funded nutrition education programs from 11 counties in California.
- Nutrition Educators from the 11 participating counties were randomized to either use the standard curriculum (control) or the curriculum with the California Plate materials (intervention).

Design and Protocol

- Intervention classes received the Plate visuals and activities added to the standard curriculum.
- Data was collected at using the pre- and post-test model.

Data Collection

- Data collected included demographic information, Visually Enhanced Food Behavior Checklist and 24-hour dietary recall.
- Data collected at the first class and the last class.

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Food Behavior Checklist

These questions are about the ways you plan and fix food.
Think about how you usually do things.

Name _____ Date _____ ID# _____ Entry Exit

Choose one answer for each question.

1.



Do you eat fruits or vegetables as snacks?

- no
 yes, sometimes
 yes, often
 yes, everyday

2.



Do you drink fruit drinks, sport drinks or punch?


- no
 yes, sometimes
 yes, often
 yes, everyday

3.



Did you have citrus fruit or citrus juice during the past week?

- yes
 no

4.  Do you drink regular soda?

no
 yes, sometimes
 yes, often
 yes, everyday

5.  Did you drink milk or use milk on cereal during the past week?

yes
 no

6. Vegetables: How much do you eat each day?






none
 1/2 cup
 1 cup
 1 1/2 cups
 2 cups
 2 1/2 cups
 3 cups or more

7. Fruit: How much do you eat each day?






none
 1/2 cup
 1 cup
 1 1/2 cups
 2 cups
 2 1/2 cups
 3 cups or more

8.  Do you eat more than one kind of **fruit** each day?
- no yes, sometimes yes, often yes, always

9.  Do you eat more than one kind of **vegetable** each day?
- no yes, sometimes yes, often yes, always

10.  Do you drink milk?
- no yes, sometimes yes, often yes, everyday

11.  Do you take the skin off chicken?
- no yes, sometimes yes, often yes, always

12.  Did you have fish during the past week?
- yes no

13.



Do you eat 2 or more vegetables at your main meal?

- no
 yes, sometimes
 yes, often
 yes, everyday

14.



Do you use this label when food shopping?

- no
 yes, sometimes
 yes, often
 yes, always

15.



Do you run out of food before the end of the month?

- no
 yes, sometimes
 yes, often
 yes, always

16.

How would you rate your eating habits?

- ① poor
 ②
 ③
 ④ fair
 ⑤
 ⑥
 ⑦ good
 ⑧
 ⑨
 ⑩ excellent

* Use the accompanying instruction guide when administering this tool.
 * Research and development for this illustrated diet quality checklist were a joint effort of University of California (UC) Cooperative Extension, the California Nutrition Network, UC Davis Design Program and UC Davis Nutrition Department. Authors: Kathryn Sylva, Marilyn Townsend, Anna Martin, Diane Metz.
 * The research for this diet quality instrument is available:
 Townsend ML, Kester LL, Allen LH, Joy AJ, Marthy SP. Selecting items for a food behavior checklist for a limited resource audience. *Journal of Nutrition Education and Behavior*. 2003;33:69-82.
 Marthy SP, Kaiser LL, Townsend ML, Allen LH. Evaluation of Validity of Items in a Food Behavior Checklist. *Journal of the American Dietetic Association*. 2001;101:751-756, 761.
 Townsend ML, Sylva KJ, Martin A, Metz D, Wooten-Sheraton E, Falletti J, Keen M, Supeman E. Visually Enhanced Evaluation for Low-income Clients. *J Nutr Educ Behav*. 2005; 37 (3):249.
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Food Behavior Checklist

These questions are about the ways you plan and fix food. Think about how you usually do things.

Name _____ Date _____ ID# _____ Entry Exit

Choose one answer for each question.



17.

How many servings of vegetables do you eat each day?

18.



Do you eat more than one kind of vegetable each day? This time do not count French fries.


- no
- yes, sometimes
- yes, often
- yes, always

19.



Do you eat 2 or more vegetables at your main meal? This time do not count French fries.


- no
- yes, sometimes
- yes, often
- yes, everyday

20.  How many servings of vegetables do you eat each day? This time do not count French fries.

21. Vegetables: How much do you eat each day? This time do not count French fries.



none 1/2 cup 1 cup 1 1/2 cups 2 cups 2 1/2 cups 3 cups or more

22.  How many servings of fruit do you eat each day?

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Sample

- Complete data received from 219 participants.
- N=107 in English and N= 112 Spanish
- Difference in sample size between English and Spanish was not significantly significant.

Demographics

| Variables | Control | Intervention |
|----------------------------|---------|--------------|
| Average Age | 33.4 | 33.1 |
| Gender-Female | 92.7 | 82.9 |
| Race-Hispanic | 81.2 | 69.8 |
| Education 12 grade or > | 58.1 | 40.2 |
| Average Income | \$1448 | \$1105 |

Analysis of Fruits and Vegetables

- 4 categories of food were evaluated: fruit, vegetables, fruit juice and vegetable juice.
- Variables included: amount of fruit/veg. consumed, # of times each was consumed.
- # of types that were consumed.

Results

24-Hour Food Recall

- 24-hour food recall showed both groups increased fruit consumption.
- Spanish language participants reported a higher number of times fruits were consumed than those completing the form in English. Did not matter what group, control or intervention.

Results

Visually Enhanced FBC

- Both the control and intervention curriculum increased fruit and vegetable consumption.
- The two behaviors improved more with the intervention curriculum.
- Participants in the intervention classes rated their diets as healthier and reported larger increases in reading nutrition labels than control classes

Fatal Flaw

- All nutrition lessons are reinforced with a food demonstration. In the study more of the recipes contained fruit than vegetables.
- Next time more vegetable recipes will be demonstrated including combining fruits and vegetables in one recipe.