

## **Heart Healthy Children of Today: Promoting Heart Health Behaviors in Elementary School Children through Balanced Snack Education**

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**Goal:** This nutrition program will promote children, in the grades third through fifth grade, to make heart healthy choices, through good nutrition and regular physical activity. The students will have the opportunity to increase their nutritional knowledge through an interactive nutrition session on heart healthy snacks. The main goal of this program is to make a significant positive impact on third through fifth graders in order to promote heart healthy behaviors.

**Objectives:** The following are the objectives for this community outreach project:

1. 75% of students will be able to name 3 fruits and vegetables by the end of each lesson.
2. 60% of students will be able to put together a balanced snack.
3. 75% of students will have learned of one new food.

**Trustworthy Source of Information in Nutrition Education:** Taylor et al. researched the effects of using a trustworthy source to teach knowledge, skills, and behavior in order to promote healthy eating habits and safe food preparation. The population studied was a group of low income, Hispanic mothers with a preschool aged child and a group of elderly Hispanic women know as Abuelas. The Abuelas were considered the trustworthy source by the mothers, and were trained to teach classes on healthy lifestyle choices. During the research two assessments occurred; one assessment was for the Abuela's retention of information taught, and the other was the mother's retention of information learned. Each mother participated in a series of five classes taught by an Abuela. Tests were administered before the series, directly after the series, and six months after finishing the series. The results found that information which was found important to the participant was retained longer than information which was found not relevant. The Abuelas relearned the information quicker the second time, after participating in a

refresher course. Two things must be present for a person to choose to change their behavior. The teacher must be someone that the participant sees as a trustworthy source. And the participant must find the information relevant in order to retain the information for longer periods of time.

**School vs. Home Impact:** Prelip et al created a research program to see the effects of school based nutrition programs on behaviors related to fruit and vegetable consumption. There were a total of 1528 low income, mainly minority, third through fifth grade students. Schools were randomly chosen and had to have 50% or more students who were eligible for free or reduced price meals. For the pre-assessment there were four sections which consisted of: fruit and vegetable consumption questionnaire, attitudes toward fruit and vegetable consumption, influential people in their fruit and vegetable consumption, and demographic characteristics. The first section used a 23 item Day in the Life questionnaire, where students described what they ate and drank the previous day. Then the students were given a survey with yes or no questions about their attitudes toward fruits and vegetables. The third section, each child was given a questionnaire asking about the influence that teachers, parents, and peers had on their fruit and vegetable consumption. Once the pre-tests were distributed teachers were then allowed to implement a creative tailored nutrition class from the outlines that the district had created. After the nutrition education, posttest of the same four categories were given out. The results found that students had a positive attitude toward fruits at baseline. While the children had a negative attitude toward vegetables at baseline. Yet these positive attitudes did not translate into increased consumption of fruit. While teachers were found to be influential nutrition messengers, the home had the largest impact on fruit and vegetable consumption. Implicating that in order to have a greater impact on children's fruit and vegetable consumption the teacher must involve the parents in the child's education.

**What do the Children actually Want?:** Louise F. Wilson, RN, MS, NCSN created a study that focused on middle school student's perspective on obesity, and what is wanted out of an obesity prevention

program. The goal was to identify successful strategies for teaching students how to maintain a healthy weight through a healthier lifestyle. During this program Wilson looked at a couple aspects on student's perspective on obesity. These aspects were as follows: to see what attitudes students had regarding obesity, see if students saw obesity as a problem, what components of prevention program students found important, and what some effective program strategies. While healthy lifestyle behaviors decline in adolescents, Wilson found in the survey that 88% of students were interested in adopting healthy eating and exercise behaviors, and that in order to overcome obesity the adolescent must have a willingness to adopt healthy behaviors. Wilson also found that in order to be successful at obesity prevention programs the teacher must create a nurturing environment, provide education on healthful eating, and create a fun environment for physical activity. Along with the teacher's involvement in obesity prevention it is also important to involve the family. Wilson found that 78% of students found it easier to live a healthy lifestyle with the support of the family, but having the family highly involved in the prevention program was unnecessary; students wanted to show their independence with the support of their families.

**Exposure vs. Rewards:** Horne et al compared the effectiveness of fruit and vegetable consumption when just exposure versus rewards and exposure are present. There were two elementary schools evaluated, one was the control group and one was an experimental group. The experimental group had a 12 day baseline phase, followed by 16 day intervention phase and a 4 month maintenance phase. Each day students could select a portion of cooked vegetables and a whole fruit. If more than half of the portion was eaten the child either got a green stamp for vegetables, or a red stamp for fruits. Then during class the teacher would announce whether it was a fruit or vegetable day. On vegetable days children who had vegetable stamps received a collectable sticker and vice versa. Also during the intervention phase the teacher read a Food Dude letter to the class two out of three days a week. The Food Dude letter was a story about children battling against evil junk food. The story was read

immediately prior to snacktime for 5-7 year olds and prior to lunchtime for older children. While unlike the experimental group, the control school only offered fruits or vegetables with no rewards or letters. The letters and rewards were found to have a positive effect on fruit and vegetable consumption. The experimental group's fruit and vegetable consumption increased significantly, while the control groups fruit and vegetable consumption declined slightly. This research found results showing that exposure is not enough; rewards and positive role modeling are necessary for behavior change.

**Significance:** Research has shown that childhood obesity is an increasing problem. During childhood there are many factors that affect eating and physical activity behaviors. Students are interested in choosing healthier behaviors, but showing students that living a healthy lifestyle is both easy and fun can be difficult. In order for students to improve their lifestyle the teacher must involve parents, and peers. Also students must be exposed to, allowed to taste, and have a positive award associated with fruit and vegetable consumption, in order for a positive change to occur. To involve all parties a teacher might try an interactive class with the children's peers, along with sending a worksheet home for both the children and family to do together. When approaching families or guardians it is important to find a source that is considered trustworthy in their specific culture. If these parameters do not occur the message will not have the intended impact. Having a positive effect on student's behaviors is a multi-faceted challenge, which takes many approaches and rewards to create.

## **Part 2: Methods & Design**

### **Target Audience:**

The target audience for this program is third, fourth, and fifth graders from an elementary school with a lower income population. Inclusion criteria include being a student in the classes, being a student who chooses to participate in the activities, and families of the students participating. Exclusion criteria include students who are not in the classes, or those who have chosen not to participate.

### **Implementation Details:**

The goal of each session is to have hands on activities, where the students can learn through participation. The basic outline of each session can be seen on Table 1 on the following pages. Each class will begin with introductions about who the educator is and what the session is all about. After the introduction the students will have the opportunity to participate in a question and answer activity. This activity will be a set of five questions, which will be used to assess the knowledge gained during each session. This activity will occur at the beginning and end to see the changes that occurred. The format of the question will be, three of these questions will focus on the objectives of this course. While the other two will be to assess the children's general knowledge. There will be a 2, 3, or 4 different answers to choose from, with each answer having a different designated location. Students will line up, then once the question is asked students will direct themselves to the correct answer. The number of students that got the answer correct and incorrect answer will be written down for later analysis. After the students have answered all five questions, there will be a quick explanation of the balanced plate. This explanation is to make sure that all students have the information needed to prepare a balanced meal. Along with the balanced plate, a basic knowledge of what a balanced snack is composed of will be discussed. The focus of a balanced snack will be on the different food groups of the balanced food plate so as to make a cohesive lesson. Once there is a common baseline of knowledge established, the children will be given either a word bank of different foods, or pictures of different foods. With these

foods each child will be in charge of putting together one healthy snack. Then the children will have the option to share the balanced snack they put together with the class. After sharing some of the snacks they put together, the question and answer activity will occur once again. The same questions and answers will be available for the students. This is in order to assess how much knowledge was actually gained in this short period of time. And each student that answered the questions correct or incorrect will be noted to compare with earlier data. On the way out of the classroom each child will be given a handout to share with their family. This handout will be comprised of low cost healthy recipe, and fun activities for the family and child.

**Evaluation:**

To determine if the program has reached the objectives set there will be five questions that will be asked at the beginning and end of each session. These questions will be used to calculate the percentage of students who answered them correctly. Also it will be noted how many students are capable of creating a balanced snack. The number of students who were able to prepare a balanced snack will go toward the percentage of children capable of understanding how to balance a snack. With these questions and the balanced snack activity the objectives can be measured and analyzed to determine if the goal and objectives were attained.

**Facilities and Personnel Required:**

For each nutrition session, there will be a few materials that will be needed. A nutrition educator and the classroom teacher will be needed, for optimum education and control. Five questions that are unbiased, and can assess the student's knowledge accurately. Question markers for the students to direct themselves toward during the question and answer activity. A poster of the my plate model for the students use for the activities will need to be acquired. If a my plate poster is not possible the educator can draw the food pyramid, or balanced plate on a poster or the white board. Pictures of food or a list of foods will be necessary for creating a balanced meal in the balance meal activity. Lastly, a

handout for the students and their parents will need to be crafted. All of these materials are necessary for the program to have the maximum outcome.

**Budget:**

The budget for this project depends on the materials and resources used, which is dependent on the number of students that are reached. See Table 2: Budget Estimations for more specific information on the following pages. This budget is a rough estimate mostly because it is hard to say how many copies will be needed. The number of children that will be attending each session is still unknown. But the projected budget is around twenty five dollars. This is a small price to pay for positively influencing children in hopes that they will make more heart healthy choices in the future.

**Policy Implications:**

This program will not have a direct effect on policy change. But indirectly it could have a small effect on heart healthy lifestyles in the future. For example if a children in each session learns more about nutrition and in turn start to make healthier choices. This child might lead a healthier life and in turn fight for healthy initiative policies. These children might impact their local environment by voting for these nutrition policies. This will in turn increase the healthy initiative policies being passed through the government, which could change the way American's live their lives. Indirectly this project does not change policy but with every affected child there is a small change toward a better rounded community.

**References:**

- American Heart Association. (2011). *Jump Rope for Heart*. Retrieved September 25, 2011, from Educator: [http://www.heart.org/HEARTORG/Educator/FortheClassroom/For-the-Classroom\\_UCM\\_001115\\_SubHomePage.jsp](http://www.heart.org/HEARTORG/Educator/FortheClassroom/For-the-Classroom_UCM_001115_SubHomePage.jsp)
- United States Department of Agriculture . (2011, September 30). *My Plate*. Retrieved October 12, 2011, from Choose My Plate: <http://www.choosemyplate.gov/>

**Tables:**

Table 1: Activities and Times

<b>Activity</b>	<b>Time</b>
Introduction	5 minutes
Beginning Knowledge Activity	5 minutes
Pyramid and Balanced Diet/Snacks Activity	10 minutes
End Knowledge Activity	5 minutes
<b>Total</b>	30 minutes

Table 2: Budget Estimations

<b>Resource</b>	<b>Cost Per Unit</b>	<b>Total Cost</b>
List of Foods	\$0.03/pg	\$3.00
or		
Pictures of Foods	\$0.09/pg	\$4.50
Question Markers	\$0.03/pg	\$0.30
Mypyramid Poster	\$14.99/poster	\$14.99
Parent Handouts	\$0.03/pg	\$3.00
<b>Total</b>		\$18.29-\$25.79