

# PREVENTING CHILDHOOD OBESITY – part 6

## Eating More Fruits and Vegetables

### Training Curriculum: Survey Question 6

#### OBJECTIVES

1. Staff will understand the importance of eating at least 5 fruits and vegetables each day.
2. Staff will discuss common barriers to eating fruits and vegetables and ways to resolve these barriers.

#### MATERIALS

Nutrition Education Plan Survey  
Nutrition Education Module for question 6  
Staff Reference Sheet  
Food Frequency for Women  
“Hey Mom, Give Me Five!” Handout  
“Color Your Plate to Health” Handout

#### BACKGROUND INFORMATION

Discuss the following:

The Food Guide Pyramid recommends eating at least 3 vegetables and 2 fruits daily or a total of 5 A Day.

*Divide into groups and have them compete to see which group can identify the most reasons why 5 A Day is important for good health. Write down their responses on a flip chart, making sure the following points are included in the discussion:*

- Great source of vitamins and minerals found less abundantly in other foods.  
Vitamins: A, C, Folate, E.  
Minerals: Potassium, magnesium, copper.
- New research suggests fruits and vegetables contain a variety of antioxidants, flavonoids and other phytonutrients that help protect against cancer, heart disease, hypertension, infections and various chronic diseases.
- Low fat, low calorie resulting in better weight control.
- Contain fiber to help with digestion and prevent constipation.
- Add color, texture and eye appeal to meals.
- Taste good.

Surveys show that many Americans eat less than 5 A Day. Fruits and vegetables are being displaced by high calorie, high fat snack foods which contribute to the problem of obesity and increase the risk of chronic diseases.

*Pass out the Food Frequency and have staff complete the fruits and vegetables section, counting the number of servings they usually eat each day.*

After frequencies are completed, ask:

How many actually eat 5 or more?

What are your barriers to eating 5 A Day? *Write responses on flip chart or overhead.* Make sure the following reasons are included in the discussion:

- Too expensive.
- Too time consuming.
- Kids/family don't like them.
- Take up too much room in the refrigerator.
- Don't know how to fix them.

Almost every child's food frequency will be inadequate in fruits and vegetables. The typical nutrition counseling response is to tell the mother how many fruits and vegetables her child 'should' be eating and then review the Food Guide Pyramid with her. Many participants already know that their children should eat more fruits and vegetables. However, they do not want to buy and serve food that doesn't get eaten! They need practical tips for working fruits and vegetables into their every day diets, not information on the correct number of servings!

Our participants face some of the same barriers to eating enough fruits and vegetables that we do. It is crucial to identify what a caregiver or parent's main barriers are, and to explore ways to resolve them. The participant handouts contain practical ideas for increasing fruit and vegetable intake. The job of the counselor is to learn from the participant what her barrier(s) are, and help her find a solution.

## **REVIEW OF THE NUTRITION EDUCATION MODULE AND HANDOUTS**

Hand out the module for question 6 and the flyers.

This module is designed to encourage families to eat more fruits and vegetables by dealing with the barriers.

**Based on your experience working with families, how do you think participants are likely to answer the first two questions in bold on the module?**

The participant may answer this question honestly or she may tell you what she wants you to hear. There is no way that you can be certain. Keep in mind that the assessment is only as good as the information that the participant provides. However, because the information on fruits and vegetables is so important, it will be of value to continue on with the module and see what else might come up in the conversation.

You will need to use your judgment when interacting with the participant regarding the next question. Some may be interested in hearing about the latest research and the health benefits of fruits and vegetables. However, you may see the eyes of some 'glaze over!' If the participant appears interested in discussing the benefits, interact with her. If not, move onto the next point quickly.

The hardest part of the contact will be to get the woman to discuss the problems associated with making more fruits and vegetables available to her family. If she is reluctant to talk, try suggesting a few barriers to see if this opens any opportunities for discussion. Respond to her stated concerns by pointing out specific tips on the flyer that might pertain to her concerns.

**Besides the barriers/tips on the flyer, what other barriers might the participant mention? What tips might you suggest?**

After providing some tips, conclude the contact by asking the mother which idea she will try. Document what she says on the NER and follow-up at the next visit!

### **PRACTICE SESSION – USING THE NUTRITION EDUCATION MODULE**

Role play the module in front of the group. Ask for volunteers to play the part of a typical caregiver while you play the more difficult part of the counselor. (You may want to ask for some volunteers prior to the training session.)

For each role play, the caregiver should have a different problem or situation. Some suggestions include:

“My children won’t eat anything green.”

“My husband makes faces when I serve vegetables.”

Be prepared to make some mistakes so staff realize that role playing is a learning experience, not a ‘command performance.’ After each role play, get feedback from staff by asking the following questions:

“What part of the contact was effective?”

“What could be done to improve the contact?”

After doing several role plays, divide the group into threes and have them do some role plays on their own. Have one person be the client, another person the educator, and the third person an observer. Once the session is completed, have the observer provide feedback on the use of reflective listening, open-ended questions, and other counseling techniques you have learned.

If staff are reluctant to do individual role plays, do a ‘group role play’ by dividing the group in half. Assign each ‘half’ to play the role of the nutritionist or the parents. Keep the discussion between the teams going by asking questions such as:

“You are the nutritionist who is about to discuss fruits and vegetables. How would you get started?” (Tell them to refer to the module if they have difficulty.)

Then ask the participant group, “What might a participant say in return?”

Go back to the nutritionist group and have them give responses to what the ‘participant’ group said.

Continue working the two groups until they are satisfied that the participant group can come away from the session with concrete suggestions that can be applied at home.

# Hey Mom, Give Me Five!



Offering your children five fruits and vegetables each day is a choice you can feel good about. It will help keep them healthy and teach them good eating habits. Children (and adults!) can learn to enjoy fruits and vegetables. However, you may run into some problems along the way. Here are some tips to help you get started.

## But my children don't like vegetables!

-  Stir fry vegetables in oil with herbs or spices.
-  Let your children help choose and fix them.
-  Hide vegetables in casseroles, meat loaf or spaghetti sauce.
-  Serve raw vegetables and dips.
-  Top them with WIC cheese.

## But they cost too much!

-  Buy them in season.
-  Canned and frozen varieties often cost less.
-  Buy fruits and vegetables instead of expensive snack foods like chips and sodas.
-  Grow them in a home garden and let the kids help.

## But I don't know how to use them!

-  Eat raw vegetables at lunch.
-  Add lettuce and tomato to a sandwich.
-  Freeze WIC juice for healthy popsicles.
-  Add fruit to cereal or yogurt.
-  Add raw broccoli or cauliflower to a salad.
-  Top pancakes, waffles, ice cream or cake with fruit.
-  Shred carrots, zucchini or cabbage and mix in with your favorite meatball recipe.
-  Bake quick breads with added fruits or vegetables in them.

## But they take too long to prepare!

-  Wash and store them ahead of time in resealable containers.
-  Frozen and canned vegetables can be prepared quickly.
-  Snack on fresh or dried fruits.
-  Have a salad at a fast food restaurant.
-  Add frozen or canned vegetables to canned soup for lunch.

## But others in the house won't eat them. They just go to waste!

-  The best way to teach your children healthy eating habits is for YOU to set the example. Get ideas or recipes from the WIC staff, your friends and family to help you add more fruits and vegetables to your family's diet!

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# Color Your Plate to Health!



Have you seen the slogan “5 A Day for Better Health” in the produce section of your grocery store? It is a reminder to eat at least 5 servings of fruits and vegetables a day. Eating 7 – 9 servings is even better for you and your family!

Unfortunately, many Americans eat little or no fruit, and the most popular vegetable is french fries at their favorite fast food restaurant! We have a long way to go! Adding more color to your plate is a good way to get more fruits and vegetables. Not only will meals look prettier, you’ll be getting health benefits that can last a lifetime!

Eating one serving from the seven color groups below may help prevent cancer and other chronic diseases. You can eat fresh, canned or frozen fruits, vegetables, and juices. Remember, the serving size for juice is usually 6 oz. or half of a mug, and one serving of fresh fruit is about the size of a tennis ball, or ½cup. For 2-3 year old children one serving for juice is 4 oz., and you should offer 1-2 tablespoons of fruit or vegetable to start, and let your child ask for more.



## A Rainbow Of Good Eating

### Red:

Pink grapefruit (or juice)  
Pasta sauce  
Tomatoes (or juice)  
Tomato sauce/puree  
Tomato soup  
Watermelon

### Red/Purple:

Red apple  
Red bell pepper  
Blackberries  
Blueberries  
Red cabbage  
Cherries  
Cranberries (or juice)  
Eggplant  
Red or purple grapes (or juice)  
Red pear  
Plums  
Prunes  
Strawberries  
Red wine

### Orange:

Apricots (or nectar)  
Cantaloupe  
Carrots (or juice)  
Mango  
Pumpkin

Acorn or winter squash  
Sweet potato.

### Orange/Yellow:

Yellow grapefruit (or juice)  
Nectarine  
Orange (or juice)  
Papaya  
Peach (or nectar)  
Pineapple (or juice)  
Tangerine (or juice)

### Green:

Bok Choy  
Broccoli  
Brussels sprouts  
Cabbage  
Cauliflower  
Kale  
Swiss chard  
Watercress

### Yellow/Green:

Avocado  
Green or yellow bell pepper  
Collard greens  
Corn  
Cucumber  
Green beans  
Honeydew melon

Kiwifruit  
Mustard greens  
Green peas  
Romaine lettuce  
Spinach  
Turnip greens  
Zucchini with skin.

### White/Green:

Artichoke  
Asparagus  
Celery  
Chives  
Endive  
Garlic  
Green grapes  
Leeks  
Mushrooms  
Onions  
Green pears  
White wine

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Secretary of Health



## Increasing Fruits and Vegetables: Survey Question 6

You mentioned on the survey that children should eat vegetables about \_\_\_\_\_ times a week/day.

**What kind of vegetables does your child like? How about fruits?  
How many servings does your child eat?**

*Assess quantity and preferences.*

The Food Guide Pyramid recommends that children eat at least 3 servings of vegetables and 2 servings of fruit each day. Keep in mind that one serving size for a 4-6 year old is about the size of a tennis ball (medium piece of fruit or  $\frac{1}{2}$  cup vegetables), or a 6 oz serving of juice. For a 2-3 year old, the portion sizes should be reduced by about a third. A good guideline is to provide about one to two tablespoons of any food to a toddler, and let them ask for more. That way they can learn to stop eating when they feel full, without overeating. Overeating is a learned behavior that occurs when a child is given too large of a portion size and then asked to clean their plate!

**Why do you think it's important to eat fruits and vegetables?**

*Depending on her answer, discuss some of the health benefits. Again, we're dealing with a situation where the health benefits may not be immediate, with the exception of decreased constipation because of the additional fiber. Some clients are not interested in the health benefits related to chronic disease prevention.*

You may want to focus your discussion on reinforcing the parent's role in feeding. Life is a series of choices, and the parent's role at this time is to offer the right food choices for their children. Habits learned now will stay with the child throughout their life, whether they are bad or good.

**What are the biggest obstacles you face in getting your child to eat more fruits and vegetables?**

*Encourage client to talk about her barriers. If she is reluctant to talk, suggest a few barriers such as: too expensive, they go to waste, kids don't like them, etc. Based on her responses, review the tips in the participant flyer.*

**Which ideas will you try?**

# Eating More Fruits and Vegetables

## Staff Reference Sheet

Which would you prefer – crunchy chips or crisp vegetables with dip? As WIC staff, you know you *should* say the latter! But, in practice, it is so easy to reach for a bag of chips. Participants face the same temptation. Most know that fruits and vegetables are good for their family. But, they also know that chips, not vegetables, make their children smile. And they also hate to see good food go to waste, so they buy what their kids like rather than what is good for them.

For ideas on teaching children good eating habits, refer to the staff reference sheet ‘Teaching Children Positive Attitudes Toward Food.’ These tips will not be addressed again here. This reference sheet will address some of the benefits associated with eating more fruits and vegetables and ways to overcome some typical barriers to increasing fruits and vegetables in the diet.

### Benefits

- Great source of vitamins and minerals found less abundantly in other foods.  
Vitamins: A, C, Folate, E.  
Minerals: Potassium, magnesium, and copper.
- New research suggests fruits and vegetables contain a variety of antioxidants, flavonoids, and other phytonutrients that help protect against cancer, heart disease, hypertension, infections, and various chronic diseases.
- Low fat, low calorie resulting in better weight control.
- Contain fiber to help with digestion and prevent constipation.
- Add color, texture and eye appeal to meals.
- Taste good.

### Barriers and ways to overcome them

The tips below are also included in the participant flyer ‘Hey Mom, Give Me Five!’

### But my children don’t like vegetables!

- 🍌 Stir fry vegetables in oil and spices. They will taste and crunch better.
- 🍌 Let your children help choose and prepare them.
- 🍌 Hide vegetables in casseroles, meat loaf or spaghetti sauce.
- 🍌 Use raw vegetables and dips. Kids often prefer them raw.
- 🍌 Cover them with WIC cheese or a sauce.

### But they cost too much!

- 🍌 Buy them in season.
- 🍌 Canned and frozen varieties often cost less.

-  Buy them instead of chips, sodas, and other expensive snack foods.
-  Grow them in a home garden and let the kids help.

### **But I don't know how to use them!**

-  Eat raw vegetables at lunch .
-  Add lettuce and tomato to a sandwich.
-  Freeze WIC juice for healthy popsicles.
-  Add fruit to cereal or yogurt.
-  Add raw broccoli or cauliflower to a salad.
-  Top pancakes, waffles, ice cream or cake with fruit.
-  Shred carrots, zucchini or cabbage and mix in with your favorite meatball recipe.
-  Bake quick breads with added fruits or vegetables in them.

### **But they take too long to prepare!**

-  Wash and store them ahead of time in resealable containers.
-  Frozen and canned vegetables can be prepared quickly.
-  Snack on fresh or dried fruits.
-  Have a salad at a fast food restaurant.
-  Add frozen or canned vegetables to canned soup for lunch.

### **But others in the house won't eat them. They just go to waste!**

-  The best way to teach your children healthy eating habits is for YOU to set the example. Get ideas or recipes from the WIC staff, your friends and family to help you add more fruits and vegetables to your family's diet!

## **Phytonutrients: Some Helpful Information For You**

*Phytonutrients* is a fairly new term that defines a class of bioactive components in fruits and vegetables that may have important roles in the body. Many of these substances are still being identified, so there is a lot to be learned about them. One thing we do know is that the color in fruits and vegetables is largely provided by these food components. You may also hear them referred to as *phytochemicals*, but the preferred term is phytonutrients.

Phytonutrients themselves are not vitamins or enzymes, but work with other nutrients and dietary fiber to protect the body against diseases such as cancer and heart disease. Many of you may be familiar with the antioxidant effects of phytonutrients, but you may not have heard about the anti-inflammatory effects, membrane effects, and effects on the way neurons talk to one another in the brain. To learn more about these substances, the following resources may be helpful:

- *What Color Is Your Diet* by David Heber, MD, PhD and Susan Bowerman, MS, RD, published by Regan Books
- *The Color Code* by James Joseph, PhD, Dan Nadeau, MD and Anne Underwood, set for publication by Hyperion Books in spring 2002.
- [www.aboutproduce.com](http://www.aboutproduce.com) A website that has good information about phytonutrients.
- [www.glycoscience.com](http://www.glycoscience.com) An excellent site that has more technical information on phytonutrients as well as other dietary supplements.

Here are some general terms you should know about phytonutrients, and a small list of some of the known phytonutrients, grouped by color: Try and see how many you can pronounce! Just sound each syllable out. There are no formal guides for pronunciation, and you won't find most of these words in the dictionary, but if you break them down into syllables, you shouldn't have a problem!

*Antioxidants:* (an-ti-OX-i-dants) Substances which help reduce cellular damage caused by harmful free radicals, which are formed as a result of environmental toxins, radiation, pollution and aging. Antioxidants act either *directly* or *indirectly*. Direct antioxidants bind to potentially cancer-causing "free radicals" and indirect antioxidants turn on a variety of enzymes which protect cells against cancer. Examples of vitamins that have antioxidative properties are Vitamin C and Vitamin E. Many phytonutrients are believed to be powerful antioxidants.

*Carotenoids:* (ka-RA-ten-oids) Precursors to vitamin A that have strong antioxidant properties. They are believed to help improve communication between cells, which helps fight the spread of cancer. Studies have shown a protective effect against lung cancer. Other studies have explored the role of carotenoids in breast cancer and improved glucose tolerance. There must be adequate fat and protein in the diet for effective carotenoid absorption.

*Flavonoids:* (FLAY-vuh-noids) Potent antioxidants and free radical scavengers. Those substances in this family that have activity in humans are more commonly called *bioflavonoids*. Bioflavonoids were first recognized for their ability to protect capillaries, but have also been shown to have anti-inflammatory, antiviral, and antitumor activity as well. There is also evidence supporting claims that bioflavonoids protect against the development of coronary heart disease, and prevent cancer.

## Red:

*Lycopene:* (LY-ko-peen) A carotenoid that is found in highest concentrations in tomato products. It is believed to play a role in reducing the risk of macular degenerative disease in the eyes, and cancers of the lung, bladder, cervix and skin. Also being studied, is the role of lycopene in preventing cancers of the digestive tract, breast and prostate.

*Food Sources:* Pink grapefruit (or juice), pasta sauce, tomatoes (or juice), tomato sauce/puree, tomato soup, watermelon.

## Red/Purple:

*Anthocyanins:* (an-tho-CY-a-nins) Cyan is a shade of blue, so most of these are found in fruits or vegetables that are red/purple. Anthocyanins are believed to be strong antioxidants that can prevent the binding of carcinogens to DNA in your cells, and have been shown to have protective effects against gastrointestinal cancers.

*Food Sources:* Red apple, red bell pepper, blackberries, blueberries, red cabbage, cherries, cranberries (or juice), eggplant, red or purple grapes (or juice), red pear, plums, prunes, strawberries, red wine.

## Orange:

*Alpha & Beta Carotene:* Widely distributed carotenoids that both have vitamin A activity. Beta carotene is an essential nutrient for fatty acid metabolism in humans and has the highest vitamin A activity. Both have antioxidant properties and may play a role in improved glucose tolerance. Carotenoids may also have a role in enhancing immune function, which in turn decreases the risk of infection that may lead to the development of certain cancers. Beta carotene appears to protect cells during the promotion phase of carcinogenesis by stabilizing cells already affected by cancer-causing agents.

*Food Sources:* Apricots (or nectar), cantaloupe, carrots (or juice), mango, pumpkin, acorn or winter squash, sweet potato.

## Orange/Yellow:

*Beta-cryptoxanthin:* (BAY-ta-kryp-toe-ZAN-thin) A type of carotenoid that is believed to inhibit cholesterol synthesis which is necessary to activate cancer cell growth. There is also research that indicates protection against coronary heart disease as well. This substance possesses vitamin A activity.

*Limonoids:* (LIH-mo-noids) A phytonutrient found in citrus fruits that actually is responsible for the bitter taste that sometimes occurs when citrus fruit are subjected to freezing temperatures. Several studies have shown evidence of the inhibition of tumor formation in the presence of limonoids.

*Food Sources:* Yellow grapefruit (or juice), nectarine, orange (or juice), papaya, peach (or nectar), pineapple (or juice), tangerine (or juice).

## Green:

*Indoles:* (IN-dols) Stimulate the release of enzymes that break down cancer-causing chemicals in the liver. They may inhibit early tumor growth. Found primarily in cruciferous vegetables (cabbage family, cauliflower, dark greens, etc.).

*Isothiocyanates:* (eye-so-thy-o-CY-a-nates) A class of nutrients found only in cruciferous vegetables that has been found to be protective against lung cancer.

*Sulphorophane:* (sul-FO-ro-fane) An indirect antioxidant found in cauliflower and broccoli that stimulates the release of enzymes that break down cancer-causing chemicals.

*Food Sources:* Bok Choy, broccoli, Brussels sprouts, cabbage, cauliflower, kale, Swiss chard, watercress.

## Yellow/Green:

*Lutein:* (LOO-teen) One of the most widely spread carotenoids, typically found in large amounts in yellow/green fruits and vegetables that has strong antioxidant properties, and is a major component of Macular Pigment in the human eye, a substance that protects the retina from damage. Lutein does not possess vitamin A activity.

*Zeaxanthin:* (ZE-uh-zan-thin) A type of carotenoid that is also a major component of Macular Pigment in the human eye (see Lutein). It is also believed to have potential for slowing the progression of atherosclerosis, based on its strong antioxidant properties.

*Food Sources:* Avocado, green or yellow bell pepper, collard greens, corn, cucumber, green beans, honeydew melon, kiwifruit, mustard greens, green peas, Romaine lettuce, spinach, turnip greens, zucchini with skin.

## White/Green:

*Allicin:* (AL-li-cin) A phytonutrient found in vegetables such as garlic, chives, leeks and asparagus that is believed to stimulate enzymes that may protect cells against carcinogens.

*Quercetin:* (KER-si-tin) A bioflavonoid that functions as part of the structure of many other flavonoids. It is one of the most active bioflavonoids, and has anti-inflammatory, anti-allergic, anticarcinogenic, antioxidant, and antiviral properties. It also plays a special role in protecting vitamin C.

*Food Sources:* Artichoke, asparagus, celery, chives, endive, garlic, green grapes, leeks, mushrooms, onions, green pears, white wine.

As a final reminder, there are many benefits to including more servings of fruits and vegetables in our diets besides the fact that they contain these phytonutrients. Fruits and vegetables can play a major role in combating obesity, simply because they are lower in calories and higher in fiber. Encourage your clients to set goals for experimenting with new tastes, and adding new colors to their food choices!