



Arkansas WIC Program Child Nutrition Module Level II

**Arkansas WIC Program
Arkansas Department of Health**

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Performance Objectives

After completing Child Nutrition Module - Level II you should be able to:

1. Identify reasons it is important to develop positive food patterns in children.
2. Identify at least seven tips that can help parents and caregivers foster the development of healthy eating habits in their children.
3. Give strategies for the following common eating behavior issues of the young child: introducing new foods, disliking foods, refusing to eat, dawdling or playing with food, “food jags.”
4. Explain the rationale for smaller serving sizes for young children and the importance of offering small amounts of a variety of foods at each meal.
5. Recognize the following components of the food guidance system, *MyPyramid for Preschoolers* as it applies to children, ages two through five years:
 - Foods contained within each group
 - Some favorite foods of young children within each group
 - Nutrients provided by each food group
 - Amounts needed daily for the young child to meet their nutritional needs.
6. Identify foods that pose a choking hazard for young children.
7. Explain the importance of snacks in the diets of young children.
8. Identify strategies to prevent and/or treat selected common nutritional disorders of young children: overweight, iron deficiency anemia, and dental caries.
9. Give counseling tips to WIC parents or caregivers for selected child nutrition assessment risk factors.

Part 1: Eating Behavior

Goals of Good Nutrition for the Young Child

“A healthy feeding relationship between parent and child increases the child’s chances of being well-nourished in the long term, and of having healthy attitudes about eating, about himself or herself, and about the world.”

***Ellyn Satter, RD, MS, MSSW
Child of Mine. 1991***

This module will discuss the nutrition needs of children ages one through five – the ages of children served by WIC.

During these years, young children go through many changes, which influence the amount of food they eat, the way the food is eaten, and their food preferences.

The diets of young children are influenced by their growth rate, their physical maturity and development, and their personality development. During these early years, many lifelong food habits, likes, and dislikes are established. Parents, caregivers, other family members, and the child’s eating environment help to shape the child’s attitude and behavior toward food.

Check with your Regional Nutrition Coordinator for the following resources on feeding young children:

- ***How to Get Your Kid to Eat...But Not Too Much by Ellyn Satter***
- ***Child of Mine: Feeding With Love and Good Sense by Ellyn Satter***
- ***Bright Futures in Practice: Nutrition by Mary Story, Katrina Holt, Denise Sofka and Eileen Clark***

The goals of good nutrition for the young child are based not only on his/her physical development, but also on all aspects of their development. The following list represents the goals of adequate food and nutrition for the developing child.

The nutrients in food and the eating process should help the child to:

- *Attain optimal physical and mental growth*
- *Resist infection and disease*
- *Form good eating habits*
- *Develop motor skills*
- *Grow intellectually and mature psychologically*
- *Learn to socialize with others*

Developmental Snapshot of the Young Child

Bright Futures in Practice: Nutrition authored by Mary Story, Katrina Holt, Denise Sofka and Eileen Clark, provides the following summary of the abilities of the preschooler as he/she grows.

You can view this document at <http://www.brightfutures.org/nutrition/index.html>.

1 to 1½ Years

- The child will grasp and release foods with his fingers.
- He will be able to hold a spoon but won't be able to use it very well.
- He will be able to turn a spoon in his mouth.
- He will be able to use a cup but will have difficulty letting go of it.
- He will want food that others are eating.

1½ to 2 Years

- The child will eat less.
- She will like to eat with her hands.
- She will like trying foods of various textures.
- She will like routine.
- She will have favorite foods.
- She will get distracted easily.

2 to 3 Years

- The child will be able to hold a glass.
- He will be able to place a spoon straight into his mouth.
- He will spill a lot.
- He will be able to chew more foods.
- He will have definite likes and dislikes.
- He will insist on doing things himself.
- He will like routine.
- He will dawdle during meals.
- He will have food jags (when he wants to eat only a particular food).
- He will demand foods in certain shapes.
- He will like to help in the kitchen.

3 to 4 Years

- The child will be able to hold a cup by its handle.
- She will be able to pour liquids from a small pitcher.
- She will be able to use a fork.
- She will be able to chew most foods.
- She will have increased appetite and interest in foods.
- She will request favorite foods.
- She will like foods in various shapes and colors.
- She will choose which foods to eat.
- She will be influenced by television.
- She will like to imitate the cook.

4 to 5 Years

- The child will be able to use a knife and fork.
- He will be able to use a cup well.
- He will have increased ability to feed himself.
- He will be more interested in talking than in eating.
- He will continue to have food jags.
- He can be motivated to eat (for example, by being told “You’ll grow up to be tall like your father”).
- He will like to help prepare food.
- He will be interested in where food comes from.
- Peers will increasingly influence him.

Development of Food Habits

Food habits are learned. Learning to develop positive food patterns from early on is an important goal since these early food habits and attitudes can affect food choices later on in life and, therefore, one's nutritional status throughout a lifetime. For this reason, it is important for WIC staff to convey to caregivers the benefits of establishing healthy eating habits for young children.

“Children use the table as a stage for showing their independence. Sometimes, food isn’t the issue at all. The eating process is just one more way children learn about the world.”

“Well-meaning parents, grand-parents, and caregivers often think the worst of a child who skips a meal or won’t eat any vegetables. Keep the big picture in mind. Offer healthful, nourishing meals on a daily basis. Over time, children will get everything they need to grow and develop normally. Plenty of variety and a relaxed, happy atmosphere at mealtime are the ingredients for a well-fed child.”
Excerpts from the American Dietetic Association pamphlet, *Feeding Kids Right Isn’t Always Easy*, Revised 1996

After a child reaches one year of age, changes in his/her food intake occur. At this time the child's growth rate slows down. The child's total energy requirements (per pound) are less than during the first year, and his/her appetite decreases. WIC staff can reassure caregivers that this change in appetite is normal.

As children develop and mature, they may go through stages when they refuse certain foods, or request a limited variety of foods. If these situations are not handled appropriately, serious eating problems can develop.

It is in the family environment that children learn cultural food patterns, what foods are desirable, how these foods are to be eaten, and the rules of conduct while eating. Mealtime is a time for socialization with the family. Children observe family members and imitate their attitudes toward food.

Parents, as well as caregivers, should be encouraged to prepare a wide variety of foods to provide children with an opportunity to learn to like them. When introducing new foods, offer them one at a time and serve them with another well-liked food. Furthermore, Leann Birch, child psychologist, found that children had to be exposed to new foods at least eight to 10 times before they would eat them. For children to develop the tastes to eat a variety of foods repeated tastes should be offered.

Caregivers can teach children healthy eating behaviors by:

- Being a positive role model—practicing healthy eating behaviors themselves.
- Eating meals together as a family.
- Understanding that children will like or dislike certain foods.

- Allowing their child decide whether to eat and how much.
- Offering a variety of healthy foods, and encouraging their child to try different ones.
- Letting their child participate in food shopping and preparation.
- Teaching their child where foods come from and how foods are grown (for example, plant a garden or visit a farm, orchard, or farmers' market).
- Not using food to reward, bribe, or punish their child.

We can help parents see that talking about something other than eating at mealtimes can help make eating a positive experience.

The eating environment must be comfortable and relaxed in order for children to develop healthy eating habits. Mealtime can be uncomfortable if the young child is not seated properly and securely, the utensils are inappropriate, or the surroundings are unpleasant.

Creating a Positive Eating Environment

The following considerations will provide a positive environment for the child to enjoy meals and begin forming lifelong healthy food patterns:

- Use the child's favorite plate, bowl, cup, and eating utensils.
 - Plates and bowls: Sturdy and durable; "child-sized," with a lip that the child can use to push food against.
 - Spoons and forks: Small handles that fit easily in the child's hand; small blunt tips on spoons and forks; increase the size of utensils as the child develops.
 - Cups and glasses: Small enough to be easily grasped by the child yet sturdy enough to sit firmly on the table; unbreakable. Use cups with regular rims rather than "sippy" cups and straws that do not teach the child to form their mouth on the rim of a cup or glass.
 - Chair: One that won't tip and is positioned so that food can be easily reached.
- Serve meals and snacks on a predictable but flexible schedule.
- Let the child decide whether to eat and how much.
- Be patient and understanding if the child makes a mess while she learns to feed herself.
- Give the child the opportunity to share the events of the day.
- Praise the child for trying new foods and for practicing appropriate behavior at the table.

- Create a relaxed setting for meals. Put stresses of the day aside.
- Do not insist that the child eat all the foods on her plate before dessert. Consider serving dessert with the meal.

Common Question

“How can you get a child to eat a healthy diet when the parents don’t have good eating habits?”

Answer

It can be difficult to address feeding issues when parents themselves have poor eating habits. It is hard for parents to teach when they do not practice. Actions do speak louder than words.

The situation may be an opportunity to improve the dietary habits of the entire family. Use the child’s health as a motivator. Some parents may make small changes in their own diet if they think it will help their child to be healthier. They may agree to eat one vegetable at dinner if it will encourage their child to do the same. Suggest to a pregnant mom that she learn to eat a variety of foods if she later wants her child to eat a variety of foods. Pregnancy is a time when many women are highly motivated to change eating habits for the sake of their baby’s health.

If parents are unwilling to make any dietary changes then the situation is more difficult. Parents have to work harder in other ways to make up for their lack of example.

- A positive attitude about food is important. Vegetables are not “yucky.” Instead they are “cool” and will help children grow big and strong.
- Parents can use examples outside of the family. TV ads for milk (the mustache commercials) are great examples. Even an older sibling or popular neighbor can be used as an example. “Marsha eats breakfast every day before school.”
- Coercion and “preaching” about food must be avoided. How many of us still won’t eat a certain food because it was forced upon us?
- Create interest in foods. Think of how Popeye cartoons were created to get children to eat spinach. Reading books with vegetables as characters or allowing a child to make garnishes with healthy foods may help to build interest.
- Help a child develop “ownership” of certain foods. Assigning the child the “important” task of planning a nutritious snack for the family may help.

While example is the best teacher, it is not always available. Parents who want their children to eat well need to consider making at least small changes in their own diets. Other strategies require a positive attitude and a display of interest by the parents.

"I get many questions from parents about how they can get their young child to eat certain things. It's important to remember that between the ages of two and four years, feeding issues can be thought of in relation to overall developmental and behavioral stages. At this point children have short attention spans and are challenging their environment, and eating can suffer. As a result, parents often worry when their child is not eating well or when they are insisting on eating just one thing. I usually advise parents in this situation to go with the flow. Usually the child is better off and so is the parent."

*Jerry Wortzman, MD
Department of Pediatrics
Interview in the Medical Center
of Central Mass. Newsletter,
Fall 1994*

"Adults often view a child's odd food and eating behaviors as a problem. Childhood food binges, food strikes, and other unusual habits are usually a part of normal development."

***Excerpts from the American Dietetic Association pamphlet,
Feeding Kids right Isn't Always Easy, Revised 1996***

Food Issues

Food issues during the early years are a common part of the maturation process. Parents and other caregivers must be encouraged to deal with the problems appropriately to avoid making mealtime an unpleasant situation for all. In general, caregivers should ignore negative behaviors and reinforce positive behaviors. The following pages take common concerns caregivers may voice during WIC visits and offer messages WIC staff can share with caregivers.

Common Question ***My 2-year-old's appetite has changed. Should I be worried?***

Answer Children grow more slowly from ages one to five than they do during their first 12 months of life. Young children's appetites are usually smaller than those of babies.

Children's appetites change a lot from day to day, even from meal to meal. If your child is energetic and growing, he is probably eating enough.

Common Question ***How much should I feed my child?***

Answer Children usually eat small portions. Offer small portions, and let your child ask for more if she is still hungry. As a guide to portion size, some experts advise one tablespoon of every solid food served for every year of age.

Common Question ***My child sometimes dawdles during meals. What can I do?***

Answer It is normal for children to lose interest in an activity, including eating, after a short time. They are also easily distracted. Try to reduce distractions (for example, television) during meals and snacks. Refrain from making a "scene." Explain that you will remove the food when the child is finished. Once the food is removed, there is no more until the next snack or meal. Routines are important to children. Serve scheduled meals and snacks.

Common Question***What can I do about my picky eater?*****Answer**

It is a common complaint to hear about children being picky eaters and not wanting to eat what the rest of the family eats. Children are naturally neophobic (they do not like new foods at first exposure). The more familiar children are with a food, the more they are inclined to like it. When a child rejects a food or all foods offered at a meal, the parent should accept the rejection. To react or try to force the child to consume food is a way to guarantee that the child is not likely to change their eating behavior any time soon. The child should be asked to sit at the table and keep the family company until the end of the meal. Look at your child's eating over time rather than at each meal. If your child is energetic and growing, he is probably eating enough. Other parents have tried these suggestions:

- Offer your child food choices and let him decide.
- Continue to serve a new food even if your child has rejected it (may take eight to 10 times or more before they accept it).
- Let your child participate in food shopping and preparation.
- Do not use food to reward, bribe, or punish your child.

Common Question***How should I handle food struggles with my child?*****Answer**

Your child may struggle with you over food in an attempt to make decisions and become independent. Do not struggle with your child over food. Struggling over food may make her even more determined. Let your child decide whether to eat and how much.

Common Question***My child wants to eat only peanut butter sandwiches. What should I do?*****Answer**

- Food jags in children (when children want to eat only a particular food) are common.
- Offer smaller servings of the favored food, along with other foods to ensure that your child eats a variety of foods.
- Jags rarely last long enough to be harmful. If your child is energetic and growing, he is probably eating enough.

Common Question***How can I get my child to try new foods?*****Answer**

- Offer small portions of new foods—perhaps one or two tablespoons—and let your child ask for more.

- Introduce only one new food at a time.
- Allow plenty of time for the child to look at and examine the food.
- Encourage your child to try a new food, but don't force her to eat it. Introduce new foods when your child is rested and feeling well. She probably won't try new foods if she is tired, irritable, or sick.
- Continue to serve a new food even if your child has rejected it. It may take several times before she accepts the food.
- Serve your child's favorite foods along with new foods. She may be more willing to try new foods if her favorites are on her plate.
- Be a positive role model—eat new foods yourself.
- Introduce a new food in a neutral manner. Talk about the food's color, shape, size, aroma, and texture, but don't talk about whether it tastes good.
- Make trying new foods appealing by involving your child in shopping and preparing the food.
- Be creative. For example, cut foods into various shapes using cookie cutters and create fun names for foods (for example "little trees" for broccoli).

Common Question

How should I handle my child when he rejects a new food?

Answer

- Refrain from making an issue of the child's rejection.
- Remember it may take multiple exposures before he accepts the food.
- Try combining the food with other favorite foods.
- Prepare the food in different ways (separately, raw, cooked, in a soup, etc.).
- Offer small servings of the food.
- Allow children to have a few dislikes, as most adults do too.

The following begins a series of **Self-Checks** that occur throughout this module.

Complete each **Self-Check** in order. Check your answers after each **Self-Check**. The answers begin on page 120.



Self-Check #1

After completing **Self-Check #1**, check your answers and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

1. In the list below, choose the phrases which are desirable qualities of eating utensils for young children:

- Small, blunt-tipped spoons and forks
- Sturdy, durable dishes
- Plates and bowls with a “lip”
- Small, unbreakable cups and glasses

2. True False Food habits acquired at an early age may influence later nutritional status.
3. True False Food habits are inherited not learned.
4. True False Children tend to imitate the eating habits of their parents.
5. True False Don't force children to eat; most healthy children will eat when they are hungry.
6. True False Children should be offered a variety of foods.

Choose the phrase that correctly completes the following statements. There may be more than one correct choice.

7. When introducing new food(s):
 - a. Serve the new food several times even if it was rejected previously.
 - b. Give the child a large serving so he or she can taste it several times during the meal.
 - c. Serve the food with another, well-liked food.

- d. Instruct the child to eat all of it.
 - e. Be a positive role model—eat new foods yourself.
8. If a child dislikes a certain food, some possible alternatives are:
- a. Prepare it a different way.
 - b. Serve only a small amount.
 - c. Combine the disliked food with some of his/her favorite foods.
9. When a child occasionally refuses to eat:
- a. Tell the child there will be no dessert unless his/her plate is clean.
 - b. Do not struggle with the child—let the child decide whether to eat and how much.
 - c. Punish the child.
10. If a child goes on a “food jag” (requesting one food often):
- a. Allow the child to have smaller servings of the favored food.
 - b. Offer other foods to ensure the child eats a variety of foods.
 - c. Refuse to give it to the child.

Part 2: Nutritional Requirements

What Foods Should A Child Eat Every Day?

Young children need specific nutrients, such as calcium, protein, vitamin A, and iron, rather than specific foods. Eating a variety of foods – in adequate amounts - is the key to getting the nutrients they need to grow and thrive.

In the past, the Food Guide Pyramid has been the food guidance system utilized to “guide” parents and caregivers on what foods to feed and how much to feed (to obtain the needed nutrients). With the release of the 2005 Dietary Guidelines for Americans and the subsequent release of *My Pyramid*, *MyPyramid for Kids* and recently, *MyPyramid for Preschoolers*, a new “system” is now in place to offer guidance in making healthy food choices. *MyPyramid* is geared toward adults; *MyPyramid for Kids* is geared toward 6 to 11 years; and *MyPyramid for Preschoolers* is for parents and caretakers of children 2 to 5 years old. *MyPyramid* is different from the “old” Food Guide Pyramid in that it focuses on total amounts **NOT** servings **AND** tailors amounts needed based age, gender, the level of physical activity and calories needed. Even though *MyPyramid for Preschoolers* does not give nutrition recommendations for the younger child (one to two years of age), we can still apply the principles it promotes - healthy choices and physical activity - to younger children (and their caregivers). The *Help Me be Healthy* series of pamphlets (that the Arkansas WIC Program uses) has adapted *MyPyramid for Preschoolers* for the younger child (ages 1 to 1 ½ and 1 ½ to 2). To learn more about *MyPyramid for Preschoolers* go to the website: <http://www.mypyramid.gov/preschoolers/index.html>.

MyPyramid for Preschoolers

As with the “old” Food Guide Pyramid, foods are divided into groups in *MyPyramid for Preschoolers*. With *MyPyramid for Preschoolers*, each food group is depicted by a different color and size “stripe” that represents the recommended proportion of food from each food group. *MyPyramid for Preschoolers* focuses on the importance of making healthy food choices and being active.



The *MyPyramid for Preschoolers* slogan for children is "Eat Right. Exercise. Have Fun". The key messages of *MyPyramid for Preschoolers* are:

- Be physically active every day - the child climbing the steps reminds children that physical activity should be done every day.
- Choose healthier foods from each group - every group has foods that you should

eat more often.

- Eat more of some food groups than others- the different size stripes suggest how much food you should choose from each group.
- Eat foods from every food group every day - the different colors of the pyramid represent the five different food groups plus oils.
- Make the right choices for you – www.MyPyramid.gov gives everyone in the family personal ideas on how to eat better and exercise more.
- Take it one step at a time - start with one new, good thing a day, and continue to add another new one every day.

The five food groups of *MyPyramid for Preschoolers* are: Grains, Vegetables, Fruits, Milk and Meat and Beans. Oils and Extras are included but are not a “food group.” They contribute extra calories but no vitamins or minerals. The Oils and Extras foods are typically high in calories and low in nutrients. The Oils include liquid fats and foods containing liquid fats. The “Extras” includes foods that have solid fats and added sugar.

The foods in each of the five food groups are good sources of similar nutrients. Preschoolers can have some “extras” but not too many. On average, Americans do not eat enough dark green and orange vegetables, legumes, fruits, whole grains, and low fat milk products; they eat too many fats and caloric sweeteners. *MyPyramid for Preschoolers* recommends eating more of the under-consumed foods and less solid fats, caloric sweeteners, and foods high in fat and sugars. By understanding and following the dietary guidance of *MyPyramid for Preschoolers* parents and caregivers can make choices for children and in turn help children learn to make choices that will lead to healthier lifestyles.

In WIC we use the *MyPyramid for Preschoolers* food guidance system as a counseling and educational tool in working with families to help them make healthy food choices and be physically active. See the *MyPyramid for Preschooler* website (<http://www.mypyramid.gov/preschoolers/index.html>) for interactive tools and downloadable handouts to use with parents and caregivers.

A Word about Portion/Serving Sizes

MyPyramid for Preschoolers recommends how much food - in total amounts - for a child to meet their daily nutritional needs. This is different from the “old” Food Guide Pyramid where total number of servings was listed. For example, *MyPyramid for Preschoolers* recommends a total of 1 to 1 ½ cups of vegetables per day depending on age, sex and activity level. This does not mean that a young child should eat 1 to 1 ½ cups of vegetables per meal. The 1 to 1 ½ cups is the **TOTAL** amount recommended for the entire day. Serving sizes should be smaller for young children than for adults. To ensure that children obtain all the nutrients they need to grow and stay healthy, it is important to serve small amounts of a variety of foods at each meal.

As a guide to portion size, some experts advise one tablespoon of every solid food served for every year of age. Younger children may eat smaller amounts, but more frequently; an older child may need somewhat larger servings, but less often. ***The important thing to remember is that the total amount of food a young child eats from each food group should, on average, add up to the total portion amount recommended daily for the child's age, sex and activity level.*** For example 1 to 1 ½ cups of fruit are recommended daily for children ages one to five years. In general, 1 cup of fruit or 100% fruit juice, or ½ cup of dried fruit is equivalent to 1 cup from the fruit group. If the child's diet for the day includes: ½ cup of juice, ½ cup apple and ½ cup banana, it is adequate because it adds up to a total of 1 ½ cups of fruit in one day.

On the following pages is a discussion of the different food groups as they apply to children ages one to five years. You will notice that each chart contains a section "Portion Size Appropriate for Child" and "Total Amount Recommended Daily Ages 1-5". The appropriate portion size contributes to the overall total daily intake amount recommended for that food group.

Milk Group

All fluid milk products and foods made from milk that retain their calcium content, such as yogurt and cheese, are part of the Milk Group. Foods made from milk that have little to no calcium, such as cream cheese, cream and butter, are not part of the group. Most Milk Group choices should be fat free or low fat (except for children under two who need whole milk products). In general, 1 cup of milk or yogurt, 1 ½ ounces of natural cheese, or 2 ounces of processed cheese are equivalent to 1 cup from the Milk Group. For children age one to five, two cups (16 ounces) of milk are recommended. These dairy products provide calcium, protein, riboflavin (a B vitamin), vitamin B₁₂, vitamin D, zinc, and other nutrients.

The chart below lists portion sizes appropriate for young children and the total amount from the Milk Group (2 cups) recommended per day for young children. Remember, children have smaller stomachs and cannot hold as much as an adult. Always offer a smaller portion, and then if the child is still hungry, offer more.

Milk Group		
1 cup of milk or yogurt, 1 ½ ounces of natural cheese, or 2 ounces of processed cheese are equivalent to 1 cup from the Milk Group		
Food Choices	Portion Size Appropriate for Child	Total Amount Recommended Daily Ages 1-5
Whole Milk, Skim* or Low fat* Milk	½ cup	2 cups
Natural Cheese	¾ ounces	
Processed Cheese	1 ounce	
Ice Cream or Frozen Yogurt	½ cup	
Buttermilk*	½ cup	
Yogurt	½ cup	
Cottage Cheese	1 cup	

**Delay use of skim or low fat milk products until 2 years of age. It is strongly recommended that children 1 to 2 years old drink only whole milk to ensure adequate fat intake.*

Of course, drinking milk is not the only way for children to receive calcium in their diets. Some particular dairy favorites of young children are:

- ★ Yogurt
- ★ Cheese and Cottage Cheese
- ★ Custards and Puddings

Although ice cream and ice milk do provide calcium, the amount of calcium is lower in comparison with other dairy products. Also, ice cream is high in both fat and sugar. An occasional serving of ice cream or ice milk is appropriate.

Cream cheese is identified as a fat. It is a poor source of protein and calcium, and is not to be considered a member of the milk, yogurt, and cheese group.

Another way to get calcium in the diet is to add nonfat dry (powdered) milk to foods when cooking or baking. For example, add powdered milk to some of the child's favorite foods, like meatloaf, oatmeal, and cookies.

For children who won't drink milk, here are other suggestions to offer:

- Serve flavored milk (e.g., chocolate or strawberry).
- Serve other calcium-rich foods such as tofu (if processed with calcium sulfate), broccoli and turnip greens.
- Serve calcium-fortified foods (e.g., orange juice or cereals).
- Serve dairy foods for snacks, such as cheese, yogurt and frozen yogurt.

NOTE: In the event that a child is suspected not to tolerate milk and milk products, refer the child to the Nutritionist for follow-up. (Symptoms of milk intolerance include flatulence, bloating, abdominal cramping and pain, and diarrhea.)



Self-Check #2

After completing **Self-Check #2** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

1. Name at least two nutrients supplied by the Milk Group:
 - a.
 - b.
2. What is the total amount that a one- to five-year-old needs from the Milk Group each day?
3. Two milk products that may be substituted for fluid milk are _____ and _____.
4. Portion sizes are _____ for young children than for adults.

Meat and Beans Group

Meat and meat alternatives, besides providing protein, provide varying amounts of iron, zinc, and B vitamins (thiamin, niacin, vitamin B₆, and vitamin B₁₂). The Meat and Beans Group is also a source of dietary fat and cholesterol.

Meat and Beans Group		
In general, 1 ounce of meat, poultry or fish, ¼ cup cooked dry beans, 1 egg, 1 tablespoon of peanut butter, or ½ ounce of nuts or seeds can be considered as 1 ounce equivalent from the meat and beans group.		
Food Choices	Portion Size Appropriate for Child	Total Amount Recommended Daily Ages 1-5
Cooked Meat, Fish, and Poultry	1 to 1 ½ ounces = ½ small hamburger ½ chicken leg ½ lean chop 1 slice meat	2- 5 ounces
Eggs	1 egg	
Nuts*	½ ounce	
Seeds* Sunflower Sesame Pumpkin	½ ounce	
Cooked Beans, Lentils, Dried Peas	¼ cup	
Peanut Butter*	1 tablespoon	
<p><i>*These foods can cause choking in young children.</i></p> <p><i>Remember that alternate sources of protein, such as peanut butter or dried beans and peas are nutritious, tasty and economical.</i></p> <p><i>Note: Peanut butter is not issued on a Child's food package until the age of two.</i></p>		

Protein-rich foods that are often popular with young children include bean burritos, chicken, tuna, hamburgers, peanut butter and meatloaf.



Self-Check #3

After completing **Self-Check #3** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

Fill in the blanks to correctly complete the statements:

1. _____ ounces of Meat and Beans Group foods are needed each day for children 1 to 5 years old.
2. _____ cup(s) of beans is equivalent to 1 ounce Meat and Beans Group serving.
3. Name two nutrients that Meat and Beans Group foods provide:
 - a.
 - b.
4. Two Meat and Beans Group foods that are often popular with children are:
_____ and _____.

Grains Group

Grains Group foods include whole grain or enriched bread, rice, pasta, oatmeal, cereals, tortillas and grits. Thiamin, riboflavin, folate, niacin (all B vitamins), and iron are the major nutrients found in foods from this group. Grains Group foods also supply an inexpensive source of energy (calories). Whole grain products are preferable to enriched and especially non-enriched products, as whole grain products have been minimally processed, so more nutrients remain in the product. Specifically, whole grain products contain many trace nutrients, as well as dietary fiber, which help regulate digestion and elimination. Foods high in fiber may fill up young children, causing them to feel full before they get enough calories for growth and energy. For children one to two years old, fiber intakes above the child's age plus five grams of fiber/day should be avoided. Children over three years of age can safely consume their age plus five grams of fiber/day (e.g., a 3-year-old can safely consume 3 [age] + 5 grams = 8 grams of fiber/day). The total amount of Grains Group foods recommended each day for a one- to five-year-old is three to five ounces. See chart below.

Grains Group In general, 1 slice of bread, 1 cup of ready-to-eat cereal, or ½ cup of cooked rice, cooked pasta, or cooked cereal can be considered as 1 ounce equivalent from the Grains Group.		
Food Choices	Portion Size Appropriate for Child	Total Amount Recommended Daily Ages 1-5
	½-1 slice	3-5 ounces
Tortilla (6-inch)	½-1	
English Muffin, Bagel	½ -1	
Pancake/Waffle (5-inch)	½-1	
Roll, Muffin	½-1	
Hot Dog/Hamburger Bun	½	
Cooked Hot Cereal	¼ to ½ cup	
Cold Cereal	½ cup	
Rice, Noodles, Pasta	¼ cup	
Wheat Germ	2 tablespoons	
Crackers	1-1 ½ graham 5-8 animal or wheat	

The Grains Group is generally well-liked. A few of the popular choices of young children are:

- * *Cereal*
- * *Pancakes*
- * *Bread*
- * *Tortillas*
- * *Crackers*

However, a few words of caution regarding the Grains Group:

- ☞ Encourage the use of lightly- or non-sugared cereals.
- ☞ Limit sweet rolls, cookies, cakes, and other snack foods because they are excessively high in fat and sugar, compared to the other nutrients provided by them.
- ☞ Limit additions of butter, oils, and margarine to rice, pasta and bread.
- ☞ Use only small amounts of syrup and jelly on pancakes, waffles or bread.
- ☞ Adding sugars and fats to Grains Group foods modifies an otherwise nutritious grain food to a less nutrient dense food.



Self-Check #4

After completing **Self-Check #4** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

1. Whole grain or enriched grain products in the diet are good sources of which of the following:

Vitamin C	B Vitamins	energy (calories)
iron	calcium	

Fill in the blanks to accurately complete the statements.

2. _____, found in whole grain products helps regulate digestion and elimination.
3. Children one to five years old need _____ ounces of Grains Group foods each day.
4. At least ____ of all grains consumed should be whole grains.

Fruit Group

Fruits are good sources of vitamins A and C. In addition, they can provide folate, iron, and fiber. The total amount of fruits recommended each day for a one- to five-year-old is 1 to 2 cups. Fruits high in vitamin C can contribute to the daily nutrient needs for vitamin C as well as vitamin A.

The table on the following page lists those fruits that are good sources of vitamin C and vitamin A as well as other fruits in the group. The portion size listed is the serving size that is the most appropriate for a child one- to five-years-old. Remember a child's stomach is smaller than an adult's and it is better to serve smaller portions to begin with and offer second servings if needed. The right hand column lists the **TOTAL** amount needed per day for ages one to five.

Fruit Group

1 cup fruit or 100% fruit juice, or ½ cup dried fruit are equivalent to 1 cup from the fruit group.
Eat a variety of fruit but limit fruit juices.

Food Choices	Portion Size Appropriate for Child	Total Amount Recommended Daily Ages 1-5
<u>Vitamin C Fruits</u>		1 to 2 cups
Grapefruit	¼ c. - ½ c.	
Grapefruit juice	⅓ c. - ½ c.	
Orange	¼ c. - ½ c.	
Orange juice	⅓ c. - ½ c.	
Papaya	¼ c. - ½ c.	
Strawberries	¼ c. - ½ c.	
Vitamin C-enriched juices	⅓ c. - ½ c.	
Cantaloupe	¼ c. - ½ c.	
<u>Vitamin A Fruits</u>		
Apricots	¼ c. - ½ c.	
Cantaloupe	¼ c. - ½ c.	
Mango	¼ c. - ½ c.	
Papaya	¼ c. - ½ c.	
<u>Other Fruits</u>		
Pear	¼ c. - ½ c.	
Apple	¼ c. - ½ c.	
Peach	¼ c. - ½ c.	
Banana	¼ c. - ½ c.	
Watermelon	¼ c. - ½ c.	
Honey dew	¼ c. - ½ c.	
Grapes*	¼ c. - ½ c.	
Raisins and other dried fruits*	¼ c. - ½ c.	

** May cause choking in small children. Refer to the section on choking for more details.*

Vegetable Group

Vegetables are also good sources of vitamins A and C. In addition, they can provide small amounts of vitamin E, as well as folate, iron and fiber.

The total amount of vegetables recommended each day for a one- to five-year-old is 1 to 2 ½ cups each day. Vegetables can help contribute to the daily nutrient needs for vitamin A and vitamin C. The table on the following page lists those vegetables that are good sources of vitamin A and vitamin C as well as other vegetables that can be included in a child's diet. The "portion size appropriate for a child" listed is the serving size that is the most appropriate for a child one-to five-years-old. The right hand column lists the **TOTAL** amount needed per day for ages one to five.

Vegetable Group

All fresh, frozen, canned, and dried vegetables and vegetable juices. 1 cup raw or cooked vegetables or vegetable juice, or 2 cups raw leafy greens are equivalent to 1 cup from the vegetable group.

Food Choices	Portion Size Appropriate for Child	Total Amount Recommended Daily Ages 1-5
<p><u>Vitamin A Vegetables</u> (dark green/deep yellow in color)</p> <p>Broccoli Greens Beet Collards Chard Kale Spinach Pumpkin Squash-winter varieties Carrots* Sweet Potato</p>	<p>1/8 c. – 1/4 c. (applies to all vegetable choices)</p>	<p>1 to 2 1/2 cups</p>
<p><u>Vitamin C Vegetables</u></p> <p>Broccoli Brussels sprouts Pepper</p>		
<p><u>Other Vegetables</u></p> <p>Asparagus Beets Bok Choy Cabbage Cauliflower Eggplant Green beans Corn* Cucumber Mushrooms Lettuce Okra Peas* Potato Squash- summer varieties Tomato Celery Onion</p>		
<p>* May cause choking in small children. Refer to the section on choking for more details.</p>		

Since children may prefer other foods to vegetables, careful preparation of vegetables is important. Children like bright colors and a variety of textures and shapes. Make vegetables more appealing to children by serving them raw, cutting them in different shapes, and not overcooking them.

However, some raw vegetables like raw carrots are not recommended because of possible choking. To minimize the possibility of choking on a food, it is recommended that young children eat cooked vegetables or tender-raw vegetables (such as dark green lettuce) and soft fresh fruits or canned fruits.

As mentioned before, parents and caregivers should not overreact to a child's refusal to eat, or to his/her food dislikes. The child should be encouraged to try the vegetable again at a later date. Preparing the food in a different way may also improve the child's acceptance. Above all, parents and caregivers should avoid using bribery to make their children eat vegetables.

Favorite fruits and vegetables of young children include the following: fruit juice and frozen fruit juice on a stick; bananas, applesauce, peaches, or pears with yogurt or cottage cheese; orange or tangerine wedges (with seeds removed); cantaloupe and watermelon (with seeds removed); raw vegetables—broccoli, cauliflower, zucchini, cucumbers, etc., cut in different shapes and served with a dip; potatoes, vegetable soup; and well-cooked, but not mushy, vegetables. Serving spaghetti, lasagna, or other tomato-based casseroles is another way to get children to eat vegetables because of the tomato sauce.

Oils

The Oils section is represented in the *MyPyramid for Preschoolers* by a narrow yellow stripe. The stripe's width indicates that these foods should make up a small portion of the diet.

If extra calories are needed in a child's diet, foods containing oils/fats can contribute some of those calories. Oils include fats from many different plants and from fish that are liquid at room temperature, such as canola, corn, olive, soybean, and sunflower oil. Some foods are naturally high in oils, like nuts, olives, some fish, and avocados. Foods that are mainly oil include mayonnaise, certain salad dressings, and soft margarine. Check Nutrition Facts labels to keep saturated fats, *trans* fats, and sodium low. For one- to two-year-old children, fat intake should not be limited due to the calories needed for growth. A two-year-old and older child should begin to follow heart-healthy principles for good health.

Extras

This allowance is the remaining amount of calories after accounting for the calories needed from all food groups. These "extra" calories are in foods that are high in fats

and added sugars, or in extra food from a food group. The “extra” calorie allowance can be used to:

- Eat more foods from any food group than the food guide recommends.
- Select forms of foods that contain solid fats or added sugars (example – whole milk, cheese, sausage, biscuits, sweetened cereal, and sweetened yogurt).
- Add fats or sweeteners to foods (example – sauces, salad dressings, sugar, syrup, and butter).
- Eat or drink items that contain only fats, caloric sweeteners (example – candy, soda)

Generally, one- to five-year-olds need anywhere from 1000 calories to 1600 calories per day, depending on their activity level. Encourage parents and caregivers to try to include the extra calories more from extra foods from the five food groups instead of high fat, high sugar foods.

Vitamin and Mineral Supplementation

Some caregivers may ask WIC staff if they should give their child a vitamin/mineral supplement.

Generally staff can let them know that if their child is growing well and eating a variety of healthy foods, a supplement is probably not needed. Staff should also recommend caregivers talk to their health care provider about the need for supplementation.

An Important Message about Choking

In 2001, 864 children ages 14 years or younger died from unintentional airway obstruction due to inhaled or ingested foreign bodies. Of these, 87% were ages four and under. In 2001, 695 children ages 14 and under died from choking with 30% of these caused by food. Inappropriate foods given to infants and young children, textures and shapes of some foods given, and lack of supervision during feeding have been cited as causes of food choking-related deaths.

Because children do not develop a full set of baby teeth until they are about two years of age, solid foods that require chewing should be modified by cooking and pureeing, mashing, finely chopping, or dicing to aid in chewing to help prevent blocking airways. Foods most often named as causing fatal choking are those that are round or cylindrical in shape or that have the ability to “ball up” in the airway because of their texture.

Examples of such foods that might cause choking include:

- Whole hot dogs and other sausage-shaped meats
- Hot dogs or sausages sliced into rounds, like quarters
- Raw carrots, grapes, apple pieces
- Hot bread-type biscuits

- Peanut butter given alone
- Fruits with pits, such as cherries
- Popcorn
- Gum drops
- Nuts
- Seeds
- Beans, peas
- Chewing gum
- Round-shaped candies

To prevent food-related choking:

√ Always supervise feeding times of preschool-age children so you are aware of any difficulty they have in swallowing food.

√ Children should be relaxed and calm before eating and during meals.

√ Children should be seated (not lying down) while eating and should not return to play until the meal or snack is eaten.

√ Modify shapes and textures of the foods most likely to cause choking. For example, cut hot dogs and sausage-shaped meats into two or more lengthwise pieces first, and then into smaller pieces. Cut whole grapes in half. Chop raw vegetables into thin strips.

√ Moisten creamy peanut butter with juice, jelly, or applesauce. Another “safe” way to serve peanut butter is to spread a very thin layer of it on toast—it will melt on the toast.

√ Beware of ingredients in foods which might cause choking, for example, nuts in an oatmeal cookie.

√ Avoid letting children eat in the car. Should a child choke in the car, the caregiver won’t be able to help as they are driving.



Self-Check #5

After completing **Self-Check #5** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

1. Vegetables and fruits are especially good sources of which two vitamins?
 - a.
 - b.

2. Certain raw vegetables and fruits (along with other foods such as hot dogs, popcorn, nuts, and hard candies) are among the list of foods that are not recommended for young children, as they might cause _____.

3. List two ways that certain foods can be changed or modified to prevent food-related choking in young children.
 - a.
 - b.

4. One- to five-year-old children need a total portion of at least _____ cup(s) of fruits each day and _____ cup(s) of vegetables each day.

5. True or False Parents should force their children to eat their vegetables.

6. Name at least two fruits and three vegetables that are good sources of vitamin A:

Fruits:	Vegetables
a.	a.
b.	b.

7. Name at least three fruits and two vegetables that are good sources of vitamin C:

Fruits:	Vegetables
a.	a.
b.	b.
c.	

Meal Planning for Young Children

Foods should be simply prepared. Avoid using too much sugar (all types), spices, and fat (such as butter, margarine, sour cream, mayonnaise, and salad dressing). Meals should offer a variety of foods, not only for their different nutrients, but also to add interesting shapes, colors, textures, and flavors.

The following is a sample meal pattern for young children taken from *MyPyramid for Preschoolers*

(<http://www.mypyramid.gov/preschoolers/HealthyHabits/samples.html>).

Refer parents to the website to look at the meal and snack patterns that would be appropriate for their 2-5 year old. Encourage parents and caretakers to try some of the meal and snack ideas.

Meal and Snack Pattern A

These patterns show one way a **1000 calorie MyPyramid Plan** can be divided into meals and snacks for a preschooler. Sample food choices are shown for each meal or snack.



Notes for using the Meal and Snack Ideas.

Breakfast	Breakfast Ideas		
1 ounce Grains ½ cup Fruit ½ cup Milk*	Cereal and Banana <i>1 cup crispy rice cereal</i> <i>½ cup sliced banana</i> ½ cup milk*	Yogurt and Strawberries <i>½ cup plain yogurt*</i> <i>4 sliced strawberries</i> 1 slice whole wheat toast	Applesauce Topped Pancake <i>1 small pancake</i> <i>¼ cup applesauce</i> <i>¼ cup blueberries</i> ½ cup milk*

Morning Snack	Morning Snack Ideas		
½ ounce Grains ½ cup Fruit	½ slice cinnamon bread ½ large orange	½ cup toasted oat cereal ½ cup diced pineapple	Frozen Graham Cracker Sandwich <i>1 graham cracker (2 squares)</i> <i>¼ cup mashed banana</i> ¼ cup apple juice

Lunch	Lunch Ideas		
1 ounce Grains ¼ cup Vegetables ½ cup Milk* 1 ounce Meat & Beans	Open-faced Chicken Sandwich and Salad <i>1 slice whole wheat bread</i> <i>1 slice American cheese*</i> <i>1 ounce sliced chicken</i> ¼ cup baby spinach (raw) 2 Tbsp grated carrots	Soft Taco (meat or veggie) <i>1 small tortilla</i> <i>¼ cup salad greens</i> <i>2 Tbsp chopped tomatoes</i> <i>3 Tbsp shredded cheese*</i> <i>1 ounce cooked ground beef</i> or ¼ cup refried beans	Bagel Snake <i>1 mini whole grain bagel</i> <i>¼ cup sliced cherry tomatoes</i> <i>¼ cup diced celery</i> <i>1 ounce tuna</i> ½ cup milk*

Afternoon Snack	Afternoon Snack Ideas		
¼ cup Vegetables ½ cup Milk*	¼ cup sugar snap peas ½ cup yogurt*	¼ cup carrot "matchsticks" ½ cup milk*	¼ cup tomato juice 1 string cheese*

Dinner	Dinner Ideas		
½ ounce Grains ½ cup Vegetables ½ cup Milk* 1 ounce Meat & Beans	Chicken & Potatoes <i>1 ounce chicken breast</i> <i>¼ cup mashed potato</i> ¼ cup green peas ½ small whole wheat roll ½ cup milk*	Spaghetti & Meatballs <i>¼ cup cooked pasta</i> <i>2 Tbsp tomato sauce</i> <i>1 meatball (1 ounce)</i> ½ medium ear corn on the cob ½ cup milk*	Rice & Beans <i>¼ cup cooked brown rice</i> <i>¼ cup black beans</i> <i>¼ cup bell pepper</i> ¼ cup broccoli ½ cup milk*

*Offer your child fat-free or low-fat [milk, yogurt, and cheese](#).

What Should Children Drink?

Children may not indicate when they are thirsty. Make sure to offer water often, especially between meals and snacks.

One- to-five-year old children should consume about 2 cups (16 oz. total) of milk per day. Drinking more than this may reduce the child's appetite for other healthy foods.

Children younger than two years of age should drink whole milk. Older children can drink reduced-fat milks.

Offer juice in small amounts—**no more** than four to eight ounces per day—depending on the age of the child . . . four ounces for the younger, eight ounces for the older child. (Drinking more than this can reduce the child's appetite for other healthy foods.) Serve children juice in a cup, not a bottle. Juice served in a bottle can cover the child's teeth with sugar for long periods of time and contribute to early childhood dental caries.

Sports drinks, soda, and fruit drinks provide excess calories and few, if any, nutrients for young children. These extra calories can also reduce the child's appetite for other foods. Sports drinks are not intended for young children – they were designed for athletes. Soda and fruit drinks can be offered in small amounts as an occasional drink.

Teas should not be offered to preschoolers as they have no nutritive value. Also, tea contains tannic acid that can stain a child's teeth and interfere with iron absorption.

Foods Children Like

Preschool-age children like simple meals, with the foods separated from each other. "Finger foods"—small, bite-sized pieces of food eaten with the fingers—are popular; they are easy for the child to handle and aid in coordinating self-feeding skills. Examples of some finger foods are: vegetable sticks, slices or sections of fruit, bread, crackers, meat strips, cheese cubes, ready-to-eat cereals, and hard-cooked egg. Also, bright colors and varied shapes of foods will catch and hold the child's interest.

Children are excellent judges of well-prepared food. Listed below are favorable and unfavorable qualities of foods' textures, flavors, and temperatures when served:

Food <u>Example</u>	Favorable <u>Qualities</u>	Unfavorable <u>Qualities</u>
Meat	Moist, Soft	Dry or Tough
Hot Cereal, Mashed Potatoes	Smooth	Lumpy or Sticky
Raw Vegetables	Crisp	Mushy
Cheese	Milk Flavor	Spicy or Strong
Milk	Moderate Temperature	Very Hot/Very Cold

Children have sensitive taste buds; therefore, salt, sugar, pepper, and other seasonings should be used in moderation or not at all. If the rest of the family prefers highly seasoned food, advise the parent to dish up the young child's food before adding more seasoning.

If the above principles of food preparation are observed, children are more likely to enjoy learning to eat a variety of nutritious foods.

Common Question

What would you say to a mother who prepares at least two entrees at a meal to make sure there is a food her child will eat?

Answer

This is actually an understandable situation. Think about it . . . when preparing a meal we usually try to cook what people like. However, it can set up a situation where the caregiver becomes a short-order cook and the family does not get introduced to a variety of foods in their diet.

WIC staff can play an important role by reminding parents and caregivers not to limit meals to only foods they know the child will like. First, encourage parents and caregivers of young children to offer a variety of foods. Second, remind them that a child's likes and dislikes may change a lot; what is liked today may not be liked tomorrow. Third, provide ways to respond to a child's negative emotional reaction to certain foods on their plate.

One good strategy to recommend is to include one food the child likes with each meal (e.g., bread or fruit). When the child arrives at the table, engage the child in conversation, give her support in getting herself served, and take the focus off what is on the plate. If the child whines that she doesn't like the food choices, the parent or caregiver can ask that the food be tried. If the child refuses, the parent or caregiver can respond "Oh, okay," and not insist the child eat. The child will have at least one food that she likes and maybe milk on the table so she won't go hungry. Parents and caregivers should not break down and ask "What will you eat?" This sets up the role as the short-order cook.

Additional suggestions to help introduce new foods to children include:

- ▶ have the child help prepare a new food.
- ▶ serve the food with a known favorite.

- ▶ introduce one new food at a time.
- ▶ offer the food in a taste-size portion.
- ▶ allow the child time to examine (smell, feel) the food.
- ▶ be casual if food is refused; offer it again at a later date.
- ▶ have the adult or parent enjoy the food.



Self-Check #6

After completing **Self-Check #6** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

1. In the list below, choose the foods and methods of food preparation that are appealing to young children:

- mixed dishes (several foods mixed together)
- bite-sized pieces of food
- bright-colored foods
- dry meat
- very hot food
- crisp vegetables
- very spicy food

2. T F Juice can be a nutritious drink and parent and caregivers should offer at least 12 ounces to their child daily.
3. T F Sports drinks are an appropriate beverage for young children.

Snacks

Are snacks always “junk foods,” “empty calorie” foods, and generally non-nutritious food? No! In fact, snacks can play an important role in the diet of a young child. Snacks can supplement meals, providing nutrients that were not eaten at mealtime. For example, a child who does not drink milk at lunch could be served cheese and crackers for his/her afternoon snack. In this way, snacks can be planned to meet almost any nutrition need.

A good snack contains:

- Food from one or more of the food groups, such as: fruit, whole grain cereals, ready-to-eat cereals, crackers or bread, fruit juice, frozen fruit juice on a stick, milk, peanut butter, yogurt, cheese, and cottage cheese;
- Foods that are low in sugar; and
- Small amounts of foods that don't spoil the appetite for meals.

Snack foods not recommended for young children because they can cause choking include: grapes, nuts, seeds, popcorn, raisins, berries, hard candy, peanut butter sandwiches, and certain raw vegetables, like carrots.

Use Snacks to Improve Food Habits

Some mothers feel frustrated or worried when their children reject certain, vital food groups. However, this anxiety may easily aggravate the situation they need to change. Quite possibly the problem can be avoided, at least in part, by the use of snacks between meals.

Children's snacks can be planned to meet almost any nutrition problem. For example, they can be the means by which vitamin C is added to the diet of the child who refuses juice for breakfast, or protein for the child who is too tired or too excited at dinnertime to eat his meat. They can also be the means by which fast-growing youngsters are offered urgently needed calories in the nutritious forms needed for growth. Furthermore, snacks may be a more successful way to introduce new foods.

Some Children Need Snacks

Some children have the capacity to go easily from one meal to the next without hunger. Others actually experience real hunger within two to three hours after eating, especially if they happen to be growing rapidly. If a nutritious snack is not offered at this point, soft drinks, candy, or some other non-nutritious item may eventually satisfy this hunger. These types of snacks should only be offered occasionally. ***Timing is important so that a snack is offered when children are hungry, but not so late that it spoils their appetite for the next meal.***

Planning for Snacks

Planning means deciding:

- what the special needs of your family are;
- how snacks can add to their diet; and
- when would be the best time to offer snacks.

Planning also means considering your time and energy. If preparing something special is going to leave you irritated and frustrated when that special snack isn't eaten, then plan simple foods that may be stored away if not eaten. Having a "snack spot" in the refrigerator or a corner in the cupboard where snacks are kept may be the answer.

Here are some suggestions for snacks that supplement meals:

To add protein: Offer some hard-cooked eggs, chunks of tuna, pieces of cheese, slices of leftover roast. Serve crackers with peanut butter, tuna and mayonnaise, or cheese. Let the child use their fingers to eat these snacks.

To add vitamin C: Strawberries, melons, papaya, and citrus fruits are the best sources. Serve raw or in a fruit cup. Cut the rind off melon, remove seeds and serve wedges that may be picked up with the fingers. Raw cabbage and green peppers also provide substantial vitamin C, if the preschool-aged child accepts them.

To add vitamin A: Dark green or deep yellow fruits and vegetables add vitamin A. Try serving small pieces of broccoli with a creamed cottage cheese dip. Peaches, chunks of cantaloupe, orange slices, or dried apricots are another way to add vitamin A to snack time. A small slice of pumpkin pie or sweet potato pie is another suggestion.

Many children prefer raw vegetables to cooked, and they may particularly resist cooked vegetables at dinner. If these youngsters will eat raw vegetables at snack time, then they don't need cooked vegetables at dinner. Besides the ones already mentioned, you might try raw green beans, turnips, Brussels sprouts, and spinach, chard, or other greens.

Common Question

What would be appropriate snack times?

Answer

"Snack time!" These words can be magic to a child's ear. Yet parents' and caregivers' thoughts around snacking, such as "Snacks spoil appetites," "Snack foods are bad," and "Children can't have snacks if they didn't eat meals," can take the fun and benefits out of snacking.

Snacks may be the single most helpful concept to empower the feeding relationship. Healthy snacks are the safety net when children are too tired, ill, upset, or distracted during the mealtime. Looking at the big picture, children will usually eat three to four times out of the six times they are offered food. Therefore, it isn't so scary or frustrating when a child refuses to eat if there is a planned snack in two to three hours.

What Healthy Snacks Are and What They Aren't

Snacks have structure, a planned time, and place. They are nutritious and contain a variety of foods. Snacks are low in sugar, fat, and salt. Snacks have a defined amount of each item.

It is best when snacks are eaten sitting down in one place with other people. Children should not get food from the kitchen at will or eat from the container (such as a box of cereal or crackers). The portion/serving should be defined.

Routine snacks are not chips, cookies, candy, Kool-Aid, sodas, French fries, etc., as these are empty calories and will not boost the nutrient intake and cannot replace foods not eaten at other times. Snacks are planned small meals and are not rewards for eating or withheld as punishment for not eating or doing a specific activity.

An Important Reminder

Some parents and caregivers believe sugar causes hyperactivity in their children. In hopes of calming the child, the parent will limit sugar-containing foods. However, there is no reliable evidence showing a link between sugar and hyperactivity. There are many foods containing sugar that also contain caffeine as well, e.g., chocolate candies, certain soda drinks. It may be the caffeine that affects the child's behavior.

Most children are overactive at times. Any number of things could cause the behavior. Being limited to the house with no exercise might cause a child to become "wild." Or, just a desire for attention might lead to acting out behavior. Very often the villain is the exciting situation where the sugary foods are provided; e.g., Halloween and birthday parties.

Common Question

What can a parent do with a "hyperactive" child who will not sit long enough to eat a meal, just a few bites?

Answer

This can be a real problem for some parents and can happen not only with "hyperactive" children, but also with children who are too engrossed in play or other activities to stop and eat. Here are a few suggestions to offer parents (and caregivers):

- ▶ Set regular times for meals and snacks; children do better when they have structure and limits.
- ▶ Prepare the child for mealtime. Let them know that "lunch will be ready in five minutes."

- ▶ Get rid of distractions. Turn off the TV, radio, or remove other items that distract a child.
- ▶ Set the table attractively and join children at the table.

Often children enjoy playing the “I don’t want to eat” game. Parents (and caregivers) can make the situation worse by trying to force feed them. If a child refuses to eat, parents can tell them “That’s okay, you don’t have to eat. Just sit here and keep us company while we eat.” Then, wait until the next planned meal or snack to offer any other food or drink (except water which should always be available). Children should understand that it is their choice to eat, but that the consequence may mean waiting for a planned snack later. Ensure parents that children won’t starve by missing a meal, and chances are they will be ready to eat and eat well at the next meal.

Additionally, children should not be allowed to continue playing while everyone else eats, or to take food from the table and eat it elsewhere. It might be more pleasant at the table without the child; however, it doesn’t help the child learn acceptable mealtime behavior.

Common Question

Why is it better for a child to have three meals and two to three snacks than to graze all day long? (How does it affect caloric intake, especially for a child with inadequate growth?)

Answer

Grazing puts a child at a disadvantage for the following reasons.

The child may:

- not learn to understand their internal cues for hunger and satiety;
- learn to use food inappropriately;
- not consume a daily balance of nutrients; and
- be exposed to a greater risk of cavities.

What We See

A parent may come in to the WIC Office and proudly tell you that their toddler can now open the refrigerator and help himself to whatever, whenever he wants to eat. The parent may be very content because their child is showing some independence with eating and yet, you may cringe because you know that grazing is not healthy.

What We Know

We are raising a generation of nibblers, in fact, it is documented that some children eat up to 14 times a day. If grazing becomes a habit, it can lead to the misuse of food (such as for entertainment when bored or as a distraction when upset) and it can prevent children from learning their internal cues for hunger and fullness. Young

children must learn to tell when they are hungry from when they are bored, etc. Failure to learn to discriminate these differences can lead to inappropriate eating and perhaps overeating. We also know that children who are permitted to graze often drink more juice and other caloric beverages and can set themselves up for an inadequate intake of a variety of foods. So, how do you respond to the parent?

Parents take pride in their child's new ability to help themselves. We should acknowledge and recognize this exciting milestone with them. You may want to ask what other acts of independence their child has made. Let them know that while independence is healthy, grazing is not.

Tips for Parents and Caregivers:

Meals and snacks should be planned. Encourage parents and caregivers to plan snacks so that when the time comes and the child is hungry, a snack is ready. Planned snacks can provide more variety of foods, and can decrease the time a child has to pause and decide what they want for a snack (i.e., favorite food). Allowing a child to be hungry between meal and snack times increases the chances of trying new foods.

Meals and snacks should be offered at designated times and places. If a parent gives a snack any time a child begs, or if the child helps himself to a snack from the refrigerator and runs around with the food, the child will not learn about deliberate eating. Children should have a snack and be done with it. Furthermore, frequent nibbling can increase the incidence of cavities because of the constant presence of food particles on the teeth.

Limit the external cues that might remind the child to eat. Help the parent to identify external cues such as a cookie jar on the counter or the television (if the child is permitted to eat in front of the TV) that may prompt a child to want to eat.

Remember that the goal is not to cut down on eating but to make eating important and worthwhile.

See *My Pyramid for Preschoolers* website for more information on healthy meals and snacks: <http://www.mypyramid.gov/preschoolers/HealthyHabits/samples.html>



Self-Check #7

After completing **Self-Check #7** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

1. True False Snacks can be nutritious supplements to the preschooler's diet.

2. Name two nutritious snacks from each of the five food groups:

Milk Group

- a.
- b.

Meat and Beans Group

- a.
- b.

Fruit Group

- a.
- b.

Grains Group

- a.
- b.

Vegetable Group

- a.
- b.

Desserts

While snacks are eaten between meals, desserts are typically eaten at the end of a meal. Even though desserts are characteristically sweet, they don't have to contribute only "empty calories." Desserts, like snacks, can also be nutritious, supplying necessary nutrients to the child's diet. Examples of nutritious desserts are: fruit, frozen fruit juice on a stick, custard, pudding, ice cream, ice milk, frozen yogurt, fruit-and-nut breads, muffins, and some homemade cookies (such as oatmeal cookies with nuts and raisins).

Common Question

What advice would you give the parent who states, "He eats much better at a meal when I tell him he can have candy when he's done!"?

Answer

Coaxing a child to eat more with a promise of a sweet treat or dessert may encourage a child to overeat both at mealtime and again when having the treat. When food is used as reward for finishing a meal you are teaching the child that the dessert or treat is the only really desirable part of the meal. For example, rewarding with dessert for eating broccoli teaches a child to like dessert more and broccoli less.

Some desserts can be nutritious, such as puddings, oatmeal or peanut butter cookies, or yogurt with fresh fruit. A serving of dessert can be served with the rest of the meal or at the end of the meal. All family members should be permitted to choose whether or not they want dessert. The main point is to keep the focus off any one food being a "reward."

Although desserts can be nutritious, the wise parent or caregiver will not offer desserts after every meal. It is easy to develop an insatiable "sweet tooth" by offering one or two desserts per day. If children are given desserts often, they will expect them, demand them, and then, eating desserts will become a habit. Desserts do tend to be higher in calories than other foods, and establishing this habit may encourage overeating and lead to an eventual problem of overweight in the child. Habits established early in life are hard to break, so it is best to offer desserts only occasionally.

Calories

The amounts of foods recommended in the *MyPyramid for Preschoolers* represent the minimum amount of food needed on an average daily basis to supply adequate nutrients. In no way should the guide be used to enforce or restrict a certain amount of food that a child is given to eat. Children should be offered nutritious meals and

snacks from the basic food groups, and then be allowed to eat the amount to satisfy their hunger.

Additional calories can also be obtained occasionally from food from the Oils and Extras foods that includes foods such as margarine, mayonnaise, salad dressings, and cream cheese as well as from foods with added sugars.

A child's own appetite and growth are the best indicators of adequate caloric intake. If a child's weight and height are within the normal range and the child generally eats the foods specified in the food guide, calculating calories is unnecessary.

Refer the parent or caretaker to the *MyPyramid for Preschoolers* website <http://www.mypyramid.gov/preschoolers/index.html> for additional information.

The Vegetarian Child

Children who are raised as vegetarians and develop a good understanding of vegetarian eating patterns can establish life-long healthy eating habits. WIC staff can support parents and caregivers of vegetarian children by sharing sound nutrition information to help ensure that an adequate variety of food is offered for optimal growth and development.

There are many variations of vegetarianism. The three most common types of vegetarians are:

Lacto-ovo: These individuals follow a diet that consists of grains, legumes, nuts, seeds, fruits, vegetables, dairy products, and eggs. Meat, poultry, and fish are typically avoided.

Lacto: These individuals follow a diet similar to lacto-ovo vegetarians except eggs are also avoided.

Vegan: These individuals follow a diet that consists of grains, legumes, nuts, seeds, fruits, and vegetables. Meat, poultry, fish, eggs, dairy products, and foods with even small amounts of animal products are avoided.

When menu planning and eating patterns are adequate, these three types of vegetarian children can grow similarly to non-vegetarian children. Poor growth is seen primarily in children with very restricted diets, such as the macrobiotic diet (which excludes meat, poultry, sometimes fish, dairy products, eggs, some vegetables, and tropical fruits) and/or poorly planned vegetarian diets.

For the parent or caregiver who identifies their child as a vegetarian, WIC staff will need to assess what foods they are offering and avoiding. This will present staff with an idea of which nutrients or food groups the child's diet may be lacking.

Certain nutrients need extra consideration with the vegetarian child. These include energy, protein, calcium, and vitamin B₁₂.

Energy needs are sometimes difficult to meet if the child is eating a diet high in fiber. Staff can encourage parents or caregivers to reduce some of the child's fiber intake by suggesting serving some refined grains and peeling fruits and vegetables. To boost energy intake, staff can recommend additional use of it in the forms of nuts and nut butters (e.g., peanuts, peanut butter, almonds, almond butter), seeds (e.g., sesame seeds), and avocados. Vegetarian children who consume dairy products can have some of their energy needs met from the fat in dairy products.

Protein needs can be supplied from plant sources alone. If a variety of plant foods are eaten over the course of the day, adequate amounts of essential and non-essential amino acids will be supplied. Examples of protein-containing plant foods are grains (e.g., barley, cornmeal, couscous, millet, oats, quinoa, rice), legumes (e.g., dried beans and peas offered on WIC), soy products (e.g., soy milk, tofu, soy hot dogs), imitation meat products, nuts and seeds (e.g., walnuts, peanuts, pine nuts, sunflower seeds), dairy products, and eggs.

The lacto-ovo vegetarian child typically receives adequate amounts of calcium because they consume dairy products. For vegan children to receive adequate calcium they must consume other good non-dairy sources of calcium. These include foods such as calcium-fortified soy milk and orange juice, tofu prepared with calcium, dark leafy greens that are low in oxalic acid (can inhibit absorption of calcium), such as collard greens, kale, and mustard greens.

Vitamin B₁₂ is a concern primarily for vegan children because it is found in animal products, including dairy products. Sources of vitamin B₁₂ for the vegan child include vitamin B₁₂ fortified foods such as some brands of soy milk, imitation meat products, fortified nutritional yeast (Red Star Vegetarian Support Formula), and breakfast cereals.



Self-Check #8

After completing **Self-Check #8** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

- T F 1. Offering desserts after every meal may establish a difficult habit to break.
- T F 2. Children should be rewarded with dessert after they clean their plates.
- T F 3. A child's weight and height are the best indicators of adequate caloric intake.
4. List two nutritious desserts:
a.
b.
5. List three plant sources of protein:
a.
b.
c.

Part 3: Nutritional Concerns and Problems

Major nutrition surveys conducted in the U.S. reveal that a significant number of children are receiving diets that are inadequate in certain nutrients. Studies of dietary intakes of children show that iron and vitamin C are the two nutrients least likely to be consumed in adequate amounts. Inadequate intakes of vitamin A are also reported.

Using the *MyPyramid for Preschoolers* information discussed in Part 2, parents and caregivers can be counseled to prevent dietary inadequacies such as deficiencies of iron, vitamin C, and vitamin A.

Common Nutrition/Health Problems

Three of the most prevalent nutritional problems of children—**overweight, iron deficiency anemia, and dental caries**—will be briefly discussed. These problems have negative short- and long-term effects on children and are considered common public health problems. Since efforts at treatment of these problems can be unsuccessful, uncomfortable, time-consuming, and expensive, it is important for health care providers to attempt to prevent their occurrence.

Overweight

Background Overweight is a major health problem in the United States. Overweight causes many health problems that limit a person's quality of life, results in major diseases, and causes enormous medical costs for the United States. Obesity is considered the number two preventable cause of death in the United States. Currently about 17 % of all children (ages 2-19) in the United States and over 65 % of adults are considered overweight. These percentages have been increasing for the last decade and are continuing to increase. For more information on overweight and obesity, go to the CDC website at <http://www.cdc.gov/obesity/childhood/index.html> and <http://www.cdc.gov/nchs/products/pubs/pubd/hestats/overwght99.htm>.

No one wants to be overweight, especially not children. Children don't think about the health consequences of overweight, but they are often painfully aware of the social costs of being overweight. Our society tends to look down on people who are overweight.

Think for a minute about how you or a friend would describe a person who is overweight. When a group of children were shown a picture of an overweight child and asked to describe the child, they presented an image of someone who was lazy, unmotivated, not very bright, and not much fun. They said the child was not someone they would want as a friend. Television, movies, and magazines tell us through their pictures that all the really intelligent, energetic, attractive, fun people are normal weight

or on the thin side. For a child the psychological and social costs of being overweight can be exceedingly painful.

It is much easier for a child to develop good food and activity habits than it is to change the food and activity habits of an adult.

Besides social difficulties, overweight also causes physical problems for children. One in five overweight children already has health problems related to their weight. These include high blood pressure, high blood cholesterol or high triglycerides (types of blood fats that can cause heart disease when their levels are too high), diabetes, difficulty moving, trouble

sleeping, and trouble breathing. These conditions not only cause problems for the child, but also start the progression of heart disease, diabetes and cancer that they are likely to experience as adults. Because children do not often die from heart disease, the assumption is that high blood pressure or high blood cholesterol do not matter for a child. Increasing amounts of research show that heart disease starts in early childhood though the effects may not be seen until adulthood.

Overweight children have a strong tendency to grow up to be overweight adults. Most people understand the health consequences of being an overweight adult. Unfortunately, it is very difficult to get adults to change their eating and activity habits and to achieve a healthy weight for life. The best approach for solving the obesity epidemic is prevention. This means teaching children healthy food and activity habits. It is much easier for a child to develop good food and activity habits than it is to change the food and activity habits of an adult.

The food habits you learn when you are young do not have so much to do with whether you use a napkin when you eat or whether you know how to use a knife or fork correctly. The food habits you learn when you are young have more to do with why and what you eat. An infant or child who is exposed to a limited number of foods while growing up is probably only going to eat a limited number of foods as an adult. A child who learns to graze through the day, eating at whim, will likely continue to do so as an adult. A child who learns to eat from boredom or who is used to getting food as a reward will find that foods meet many of their psychological needs as adults. Food behaviors and habits are very difficult to change as adults. They are much easier to change when a child is young, particularly at the ages children are enrolled in WIC! The younger the child the easier the change.

While there is a tendency for overweight children to become overweight adults there is one exception that is important to remember. Children who are overweight under the age of two years are no more likely to become overweight adults than any other normal weight infant or child. It would be inappropriate to counsel a parent or caregiver about her overweight one-year-old. Instead this can be an opportunity to ensure a parent or caregiver that their child is healthy. It is still important to evaluate the food behaviors of the child. For example, an 18-month-old child may be over the 95th percentile weight-for-height because they drink large amounts of juice all day or because they are fed too

many treats. While the child may not have a tendency to grow up to be overweight these habits have other health consequences and should be addressed.

The longer a child remains overweight the greater the likelihood they will grow up to be an overweight adult. While a two-year-old has little probability of growing up to be an overweight adult, a 14-year-old overweight child has a significant probability of becoming an overweight adult. Early prevention is the key to solving the overweight epidemic. If children can make changes to their habits at a young age the likelihood of them growing up to be overweight adults is decreased. Changes to diet and physical activity patterns are much easier for a young child than they are for an adult.

When working with overweight children the focus should be on the behaviors or habits that may contribute to a child being overweight. The ultimate goal is to make the child healthier. The focus is NOT on the child's weight and the goal is NOT to make a child lose weight.

WIC's Role with Overweight Children (older than two years of age)

What causes a person to be overweight? There are many factors contributing to overweight; some cannot be changed, but many can. Our role in WIC is to help WIC families make changes to the factors that they can change. The focus of WIC is NOT on the child's weight, but on the behaviors and habits that may contribute to the child being overweight. The goal is to help children develop habits that make them healthier. Our goal is NOT to help children lose weight. By changing food and activity behaviors of a child it is hoped that the child may gradually grow into their weight. The real goal, however, is to teach children to have healthy habits for a healthy life.



A child two years old and older is screened as at risk of overweight when the child's Body Mass Index (BMI)-for-age is greater than or equal to the 85th percentile to less than the 95th percentile. If the child's BMI-for-age is greater than or equal to the 95th percentile they are considered overweight. Outside of WIC many researchers and government agencies refer to BMI-for-age at the 95th percentile or greater as "obese." Because of the negative connotations associated with the terms "obesity" and "obese" we choose not to use these terms for children in WIC. A WIC child should never be referred to as "obese."

Let children know that people come in unique sizes and shapes. Never criticize a child's size.

Overweight is not something that you do; it is the result of what you do. So the focus is on the eating and activity habits of the child and family, not the child's weight.

When working with the parent or caregiver of a child, talk about the health benefits from a balanced diet and being physically active. Look at the diet and activity habits of the family and discuss:

- how childhood is the time to establish good food habits that will impact the health of the child both now and later in life;
- how children need fruits and vegetables for vitamins and minerals that will help them to grow and develop, and to stay healthier when they are exposed to illnesses;
- how a variety of foods make a child more likely to eat a healthy diet;
- the benefits to the family if they can turn the television off and eat dinner with family conversation; and
- the heart-healthy benefits of physical activity for the entire family.

Put Focus on the Family

It is important not to single the child out as a “problem” or a reason for change. Rarely are the food habits of a child a problem just for them. The entire family often needs to look at changing their food habits. It is not pleasant for a child to have to sit at the table and eat low fat foods with vegetables when the rest of the family is eating all kinds of fatty foods and no vegetables. This only reinforces to the child that they have a problem. It is really the family’s eating patterns that are the problem so why single out only the child. The entire family should and can develop healthy eating patterns.

Changes in family eating habits can be difficult. Remember to start with very small changes. Ask the parent what she thinks can be changed with respect to the family’s eating habits. Think of very concrete and small changes that the entire family can make. Ask the caregiver if she thinks the changes are possible and what some of the roadblocks to making the change are.

<u>Broad Goal</u>	<u>Improved Goal</u>
<ul style="list-style-type: none"> • Will eat 5 fruits and vegetables per day. • Family will eat dinner together. 	<ul style="list-style-type: none"> • Will offer family one vegetable at dinner each night. • Will offer child a piece of fruit for their afternoon snack each day. • Family will eat dinner together on Tuesdays and Sundays at the table without the television on.

Habits Associated with Overweight

Listed below are some of the dietary habits that are often associated with overweight. Ask the caregiver open-ended/probing questions to get more information if needed.

- **Use of an infant bottle.** Infant bottle use is not recommended beyond the age of 12 to 14 months. Some children who are still on the bottle may be overweight because they are consuming too much milk in addition to food. Often discontinuing the bottle will resolve the overweight condition.
- **Excess caloric beverages.** When a child is given too many caloric beverages (milk, juice, sports drinks, sodas, fruit drinks) these added calories can cause the child to become overweight (some children lose weight with these added beverages because they stop eating meals, others become overweight because they eat meals, snacks, and the beverages). Limiting milk and juice to the recommended amounts and offering water in place of other beverages may be helpful. This is also good for the child's teeth and helps them to get a more nutritionally balanced diet.
- **Diet low in fruits and vegetables.** Fruits and vegetables contain many nutrients and other substance needed by the body. Many research studies indicate that diets high in fruits and vegetables help prevent a whole host of diseases including heart disease and cancer. Fruits and vegetables contain nutrients that are important for healthy skin, good eyesight, a good immune system, and healthy bones. Diets high in fruits and vegetables also tend to be lower in calories.
- **Excess desserts and "junk foods."** Cakes, cookies, pie, candy, and chips can add large numbers of calories to a person's daily food intake. It is unreasonable and unrealistic to suggest that a child should never eat these foods or that the child should not eat these foods while the rest of the family does. The key is to offer these foods in moderation.
- **Inconsistent availability of food.** A child needs three meals a day plus two to three snacks. A child should not be restricted to less than this even if they are overweight. Hunger does not help a child to learn better food habits. Food should be offered in three meals and 2-3 snacks per day. Food should not be available at anytime the child wants to eat. This makes junk food too tempting since it can be eaten to resolve boredom or to satisfy other needs.
- **Lack of meal structure.** Meal structure can be very important. Does the family eat meals together? Do they eat at the table? Do they eat while watching television? Is mealtime pleasant? Mealtime can be very important for a family if they make it a pleasant time when they interact as a family. It can do a lot of good for family dynamics. Families who have structured meals tend to eat healthier diets. They are more likely to have a cooked meal with vegetables and other healthy foods. When the family eats erratically they tend to eat more fast foods and convenience foods that are high in calories.
- **Food as reward, punishment, or to relieve boredom.** When foods are used to reward, punish, and relieve boredom a child starts to eat for psychological benefits rather than because they are hungry or need nutrients. Some parents need help in finding other ways to reward their child and to keep them entertained.

Goal Setting

When trying to help the caregiver set a goal related to diet, try to find small changes they can make. Gradually, over time, many small changes can add up to big changes in diet. Do not use weight loss as a sign of success. When the family accomplishes a goal praise them for the success even if the child is continuing to gain weight. The goal is to improve food habits not to decrease weight. If a child's weight is continuing to gain without any signs of slowing, the child may need to be referred to the Nutritionist for assessment and counseling.

One word of caution, occasionally a family may not be able to make any changes because of major chaos in the home. This kind of chaos is not so much about schedules as about the interactions of family members. Caregivers are at their wits end; there is a great deal of fighting in the family, financial resources are chaotic, etc. In such cases it may be very difficult for the family to make changes to improve their food habits.

Physical Activity

Besides food habits the other part of being overweight has to do with a person's activity level. Overweight children tend to be more sedentary. While WIC is primarily a nutrition program, physical activity is a very important part of health. In terms of overweight it may be as important to set goals around increasing activity level (or limiting inactivity) as it is to change food habits. When talking to the caregiver, look for barriers to activity.

Here are some examples:

- ***How much television does the child watch?*** If the child is watching television for several hours per day then you may want to suggest limiting television. Be prepared though to help the caregiver think of other ways to fill time for the child. Many caregivers use television as a babysitter when they are overwhelmed or need time off.

The American Academy of Pediatrics recommends that a child not watch more than 1 ½ hours of television per day and that children under 2 years of age not watch television at all.

- ***How much time does the child spend confined to a car seat or playpen?***

Again, because a parent may be stressed for time or spare energy they may confine the child to a carrier or playpen as a form of relief. Again try to think of alternatives to help this caregiver. Are there ways to make parts of the house more childproof?

Sometimes the easiest way to make a child more active is to limit inactivity such as television, computer games, riding in the car or staying inside.

- **What kinds of games does the child like to play?** Encourage games that are more active.
- **What is the parent's attitude about play?** Sometimes parents need to be given "permission" to play with their children. Playtime is important for a child's development both physically and mentally. Because our society puts so much emphasis on work and being productive, parents may be reluctant to take valuable time to play with their child. Talk with the parents about how important play is for the development of their child. Ensure them that it is not just okay, but a very positive part of being a parent. Encourage them to enjoy playing with their child.

Types of activity that are not appropriate for a child (under five years of age) include competitive sports, as well as muscle (like weight-lifting) and endurance (like running) building exercises. Children need play-type activities. Left on their own children will generally be active and play. Help parents (and caregivers) to break down barriers that prevent a child from being playful and active.

Points to Remember.....

Remember the following points when working with parents or caregivers of overweight children:

- √ Focus on their food and activity behaviors and not on their weight.
- √ Try to make changes that involve the entire family. The child should not feel singled out.
- √ Suggest small changes that are realistic and agreeable to the family.
- √ Encourage physical activity as well as changes to the diet.
- √ Focus on traits other than appearance when talking to children.
- √ When the child is gaining weight very rapidly, is having health problems as a result of their weight, when the mom has serious concerns about the child's weight, or when change seems unlikely due to family chaos refer to the Nutritionist for counseling.

When a child's BMI-for-age is greater than or equal to the 95th percentile they are assigned Nutrition Risk Factor 113-Overweight Children. Remember this is only for children who are greater than or equal to 24 months of age to 5 years of age. These children are referred to the Nutritionist for High Risk nutritional counseling. When a child's BMI-for-age is greater than or equal to the 85th percentile but less than the 95th percentile they are assigned Nutrition Risk Factor 114- At Risk of Becoming Overweight. Again, this is only for children who are greater than or equal to 24 months of age to 5 years of age. These children are Non-high Risk and do not require a Nutritionist referral but can be referred if the CPA feels the parent could benefit from the referral.

It is "normal" for some children to be over the 95th percentile. For some children a weight over the 95th percentile may be a healthy weight for their stature and body type. For other children it may not. Children with weight-for-height over the 95th percentile and BMI-for-age over the 95th percentile may have medical or physical problems as a result of their overweight condition. Further assessment is needed. The Nutritionist

should assess these children and determine a course of action. In many cases the issues will be similar to those for children who are Non-high Risk overweight. For some the issues may be more complex and require more intervention. While it is rare, some children may be extremely overweight because of metabolic problems. These children need to be evaluated and first referred to their primary care physician.

It is important when referring children to the Nutritionist to make the child and the caregiver feel good about the referral. They should not be made to feel that their child is defective, that the parent or child has failed in some way, or that they are being “punished” for having an overweight child. Explain to the caregiver that all children grow at different rates and that some grow faster than others. Each child has a different weight that is right for them. The Nutritionist can better assess the child’s growth. Try to help the caregiver to understand that an appointment with the Nutritionist is an extra benefit of the WIC Program.

For additional resources on nutrition and physical activity, visit Food and Nutrition Services/United States Department of Agriculture’s web site for parents or caregivers: www.fns.usda.gov/eatsmartplayhardhealthylifestyle/.

There is also a related web site just for children: www.fns.usda.gov/eatsmartplayhardkids/ .



Self-Check #9

After completing **Self-Check #9** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

1. Overweight in children may be defined as a BMI-for-age greater than or equal to the ____ percentile.
2. T F Inappropriate eating patterns and insufficient activity are the most common reasons why people become and remain overweight.
3. List four habits that are associated with overweight in children:
 - a.
 - b.
 - c.
 - d.

Iron Deficiency Anemia

Iron is important in the formation of healthy red blood cells. It combines with protein to form **hemoglobin**, which is the red substance in the blood that transports oxygen to the cells and carbon dioxide away from the cells. When the body has an adequate supply of iron, there is also an increased resistance to infection.

If **iron deficiency** exists, a condition call **anemia** can occur. Symptoms of anemia include fatigue, pale appearance, loss of appetite, and sometimes an increased frequency of colds and other infections. Anemia can be detected by a simple blood test (hematocrit or hemoglobin screening) that requires only a prick of the finger.

Iron deficiency anemia is the most common nutritional deficiency in children from six months to three years of age. It is especially prevalent among poverty level preschool children.

Cause

A common cause of iron deficiency anemia in the one- to two-year-old is due to excessive milk intake. Milk is a poor source of dietary iron. However, some parents encourage their children to drink more milk, especially when the child's consumption of solid foods decreases. This combination of low intake of solid foods and excessive intake of milk may contribute to the development of iron deficiency anemia.

After two to three years of age, a lack of iron-rich foods in the diet is usually the cause of iron deficiency anemia.

Prevention

Prevention of iron-deficiency in children may be accomplished by counseling parents or caregivers to modify the child's diet by limiting foods that are both low in iron and high in calories, while substituting more iron-rich foods. Specific suggestions are as follows:

- √ Milk intake should generally not exceed 24 ounces daily. Encourage weaning to a cup if the child is still consuming milk in bottles after 12 months of age.
- √ Encourage the eating of iron-rich foods such as lean meats, fish, poultry, whole grain and iron-fortified cereals and breads, fortified noodles/spaghetti, dark green leafy vegetables, and dried beans and peas.
- √ Iron from animal sources is better absorbed by the body than iron from plant sources. A good source of vitamin C (like orange juice) or a meat product consumed with an iron-rich plant food increases the absorption of iron from that plant food. A word about eggs: even though eggs are from an animal

source, the iron in them is poorly absorbed unless they are eaten along with a vitamin C source (e.g., citrus fruits or juices, broccoli, green pepper, strawberries).

One- to-five-year-old children need 10 mg of iron daily. The chart below presents the amount of iron contained in child-sized portions of certain foods.

Milligrams (mg) of Iron in Child-sized Portions	Mg of Iron
Highly fortified cereals, ready to eat (1 oz.) *	18.0
Cooked dried beans and peas (½ cup)	2.6
Beef liver (1 oz.)	2.5
Chicken liver (1 oz.)	2.4
Egg (1)	1.1
Lean red meat (1 oz.)	1.0
Peas, mixed vegetables (¼ cup)	0.75
Collard greens, mustard greens (¼ cup)	0.6
Dried prunes (2)	0.4
Whole wheat bread (½ slice)	0.38
Broiled chicken (1 oz.)	0.38
Peanut butter (1 tablespoon)	0.3
Other fruits and vegetables	0.25
Milk (½ cup)	trace
<i>*Iron fortification is different for each cereal. Read the Nutrient Facts Label to find out the amount contained in a specific cereal.</i>	

Treatment

One of the nutrition risk factors for certification in the WIC Program is Low Hemoglobin/Hematocrit which can result in iron deficiency anemia. Iron deficiency anemia can be detected by either a hematocrit or hemoglobin test (hemoglobin is the measurement used in the Arkansas WIC Program). Once a participant has been identified as having a low hemoglobin/hematocrit, he and his caregivers will need counseling and treatment.

Here are some tips for you when counseling the caregivers:

✓ **Encourage** the use of good animal sources of iron, e.g., lean red meats. Remember that iron from animal sources is well absorbed by the body.

✓ **Encourage** the use of non-animal sources of iron, e.g., legumes, grains, and certain vegetables. Remember that one way to increase the absorption of iron from meals containing vegetables and grains is to eat a vitamin C-rich food at the same meal. For example, serve orange juice along with iron-fortified cereal at breakfast.

✓ **Encourage** the use of WIC cereals for mealtime and snacks.

X **Discourage** the use of tea since it has no nutritive value and interferes with iron absorption.

X **Discourage** a daily intake of milk that is greater than 24 ounces, since milk is such a poor source of iron.

X **Discourage** the use of unfortified snack foods such as baked goods, sodas, candy, cookies, and chips.



Self-Check #10

After completing **Self-Check #10** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

1. Two common dietary causes of iron deficiency anemia are:
 - a.
 - b.
2. Three suggestions for parents or caregivers in helping to prevent iron-deficiency anemia in their young child are:
 - a.
 - b.
 - c.
3. Which of the following contains the most iron?
 - a. one egg
 - b. one slice whole wheat bread
 - c. ½ cup of greens
 - d. one ounce of highly fortified cereal, e.g., a WIC cereal

Dental Concerns

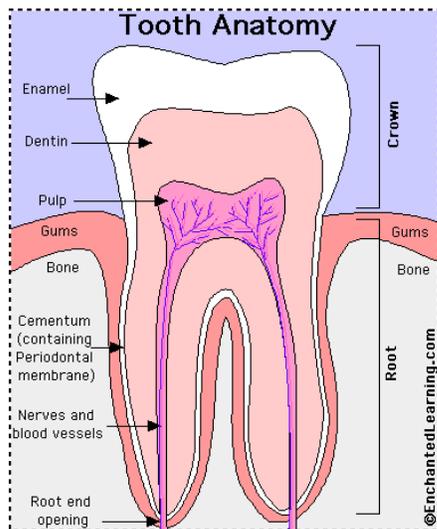
Teeth are a very visible and important part of a person. They give shape and expression to the face and mouth; they assist in the pronunciation of words; and they permit chewing of food.

Let's first discuss the growth and development of teeth and then the causes of tooth decay.

Each person normally will have two sets of teeth during his lifetime. The first set of teeth begins to form well before birth. In fact the twenty primary (first) teeth will begin to come through the gums when a child is between four and eight months old. The lower teeth usually appear first. By 2½ years of age, most children have all twenty primary teeth.

There are 32 permanent (or second teeth). Twenty of them replace the first teeth when the child is somewhere between six and 13 years old. Twelve additional teeth also erupt through the gums at this time. The four wisdom teeth do not appear until early adulthood. The permanent teeth must last a lifetime, so consistent care is needed for them.

Parts of a Tooth



Each tooth has three main parts: **crown**, **neck**, and **root**. The crown is the part showing above the gum and is covered with a protective substance called enamel. Enamel is the hardest material in the body. Dentin is the ivory-like substance underneath the enamel that makes up the bulk of the tooth. The root of the tooth, which is below the gum, is covered by a thin, hard layer of material called cementum. This acts as an attachment for the fibers that hold the tooth in its bony socket in the jaw.

Within the dentin is a space filled by the pulp. It contains cells, blood vessels, and nerves. At the root end of each tooth are small openings. Here the blood vessels and nerves enter and leave the tooth.

Through these blood vessels the tooth is nourished, just as all body tissues receive oxygen and food from the blood. Through these nerves toothaches are recognized, just as sensations of all body tissues are transmitted to the brain through nerves.

If a cavity starts in a tooth, and is not filled, it gets larger and larger, going through the enamel, then the dentin, until it opens into the pulp tissue. The pulp becomes inflamed and an abscess forms at the end of the root. This is similar to an infection which might develop anywhere in the body. As a result, the tooth usually aches and will be lost unless dental care is provided.



Self-Check #11

After completing **Self-Check #11** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

Read through the following statements and choose the statements that are true.

1. Teeth perform important functions of providing shape to the face and mouth, assisting in pronunciation of words, and enabling chewing of food.
2. The primary teeth begin to develop when an infant is between four and eight months old.
3. The only purpose which primary teeth serve is to allow the child to eat solid food.
4. Adults generally have 32 teeth.

Dental Caries

Dental caries, commonly called “cavities,” consist of the progressive decay of the tooth. Dental caries are the most prevalent disease for all age groups beyond infancy. Dental caries and their treatment can be painful, expensive, and can result in the loss of teeth. Tooth decay in childhood can lead to crooked permanent teeth and speech problems. Other children may tease children with these problems.

Cause

The bacteria, *Streptococcus mutans*, cause tooth decay. People who do not practice good oral hygiene have an increased amount of the bacteria in their mouths and are more likely to spread the bacteria to someone else. Children are often exposed to the bacteria during their infancy. Parent or caregivers spread the bacteria to their infant’s mouth (through spoons, pacifiers, toothbrushes).

The bacteria in the mouth then break down dietary carbohydrates, producing acid that attacks the tooth. These acids can remove minerals from the tooth causing the enamel to weaken and decay. The carbohydrates that can readily cause tooth decay are simple sugars and, in particular, the “sticky” type—sweets that will stick to the teeth.

Whether or not this process destroys the enamel will depend on the natural hardness of the tooth, the strength of the acids, and the length of time the acids are exposed to the teeth. The greatest damage is done within the first twenty minutes after eating. Enamel is broken down after repeated acid exposures, thus allowing bacterial access to the body of the tooth. The resulting cavity is actually a bacterial infection.

Early Childhood Caries

Early childhood caries – formerly called nursing bottle caries or baby bottle tooth decay- is a specific form of severe tooth decay of an infant’s/young child’s primary teeth. These caries are characterized by the following features:

- Begin soon after tooth eruption
- Progress rapidly
- Decay occurs on smooth surfaces, generally considered to be at low risk of decay
- Have a lasting harmful affect on dentition throughout childhood.

Early childhood caries develop when bacteria are present and a child’s teeth are bathed in liquids containing fermentable carbohydrates for prolonged periods of time during the day or night. That is why taking a bottle (with anything but water) to bed should be discouraged. As previously mentioned in the Infant Nutrition module and this module, weaning from the bottle should be completed no later than 12 to 14 months of age.

How to Control Bacteria

Bacteria are always present in the mouth. The energy on which the bacteria grow is provided by the food particles left on the teeth each time a person eats. Adhering to the following guidelines may prevent cavities:

Proper Cleaning of Teeth:

- √ Brush the teeth at least twice a day or rinse the mouth after each meal if unable to brush.
- √ Brush for at least two minutes. Plaque is sticky and difficult to see. Unless time is spent brushing, plaque will be left on teeth and can mix with minerals in the saliva to form calculus (tartar). Tartar can't be brushed off but must be removed by the dentist.
- √ After age 24 months, children can begin brushing with fluoridated toothpaste – this is when the child should be able to spit and not swallow the toothpaste. Only a pea-sized amount is needed. Fluoride is necessary to keep teeth strong, but too much can cause mottling (graying) of teeth. Most municipal water sources contain fluoride. If the family has well water, suggest they have their water tested for fluoride; families who rely on bottled water should be referred to a dentist for fluoride treatments or supplements. Families can contact their local water treatment facility to learn about the fluoridation of the community water supply.
- √ The parent or caregiver should actually perform the brushing and flossing of teeth until the child is effective with the toothbrush. This usually is until the age of 7 or older. Flossing with unwaxed floss once a day will:
 - dislodge food particles from between teeth
 - help remove plaque
 - control plaque build-up
 - stimulate the gums, helping to prevent gum disease
- √ Parents and caregivers should lift the child's lip and check their teeth at least once a month (if white spots or dark areas are forming, the child needs to be seen by the dentist right away).

Healthy Habits:

- √ Wean children from the bottle completely by 12 to 14 months of age. Toddlers who are put to bed with a bottle of milk, juice, or sweetened drink can develop tooth decay. The sugar in these beverages pools around the teeth and the bacteria act upon it.

- √ Follow *MyPyramid for Preschoolers* for dietary guidance. Clean the mouth after each meal.
- √ Read labels. The ingredients are listed on labels with the ingredient in the highest percentage first. The further down the list sugar appears the better. Remember, too, that there are many different kinds of sugar. Corn syrup, honey, dextrose, fructose, sucrose, lactose, levulose, and molasses are all different names of various sugars. They will be separated on a label, but they all add up to SUGAR.
- √ Avoid snacking on foods high in sugar, particularly between meals. Avoid snacks that contain sugar and stick to the teeth, like gumdrops and raisins.
- √ Eat snacks that are not as likely to promote tooth decay. Select snack foods from the meat group or fruit and vegetable group. Vegetables, particularly stimulate saliva production which helps wash away some of the food particles from the teeth. In addition, the fiber in fruits and vegetables can assist in loosening food stuck to teeth.
- √ Serve sweets directly after mealtime (if you are going to serve sweets) so that children can conveniently brush their teeth afterwards. In other words, try to limit the number of times each day teeth are exposed to sugar.
- √ Ideally, after each meal or snack, try to brush and floss. If this is not possible, rinse the mouth out with water to remove food particles.
- √ Visit the dentist by one year of age. If the family dentist is reluctant to see a young child, refer clients to a pediatric dentist. WIC families receiving Medicaid benefits may locate a Medicaid- approved dental provider by calling the Department of Health's Connect Care at 1-800-275-131.

Healthy drinking habits:

- √ Limit sweet drinks such as soda, Kool-Aid, punch and juice. Sipping on juice throughout the day is as harmful for teeth as any other sweet drink.
- √ Drink fluoridated water or take fluoride supplements until the eruption of the second molars at about 13 years of age. (Children under five years should not use the over-the-counter fluoride mouth rinses.) Check with your physician and dentist before taking any fluoride supplements.
- √ Do not put a child to bed with a bottle.

Common Question

How do you respond to a parent who chooses to keep a child on the bottle because of the mess the child makes with a cup?

Answer

Many times children are ready to give up the bottle long before the parents are. This sometimes happens with children whose parents don't want them to "grow up too fast," or, as in this case, parents who are afraid the child will make a mess.

Dangers

Explain to the parents or caregivers the dangers of keeping the child on the bottle too long. Staying on the bottle too long can hurt the child's teeth, which can affect the adult teeth. Children who stay on the bottle too long also usually drink too much milk. Drinking too much milk can reduce the child's appetite for other foods and this often leads to low-iron levels in the blood. You may be able to illustrate these "dangers" with the stories and pictures of children with early childhood dental caries. Check with your Nutritionist to see if they have models of teeth that illustrate the stages of dental caries. These can be used to show parents or caregivers the consequences of prolonged bottle feeding.

Dealing with the "Mess"

Since the biggest issue seems to be the mess, ask the parent or caregiver to brainstorm with you for ways to reduce the mess while using a cup. Most likely they *know* what they can do. If needed, prompt with a few suggestions: "Do you think you could give your child an empty cup to hold? That way he can get used to the feel of a cup before you put liquids in it." Or, relate stories of other clients' success: "Last week I talked to a mom who's going through what you are. She put a plastic mat under the high chair, put a bib on her child, and gave him a cup. That way there was very little mess."

Parents might come up with other suggestions such as limiting eating and drinking to one area of the house (i.e., at the child's high chair or the kitchen table) or removing the cup when the child is finished. Offer support and encouragement. Assure the parent that the messy stage won't last forever. Whatever approach you take, however, avoid making the parent defensive. Keep in mind that your role is to offer suggestions and help.

Role of Sugar in Dental Disease

As previously discussed, simple sugars are the carbohydrates that plaque will most readily use to form acid. Recent studies on animals have shown that all sugars are cariogenic (cavity-producing). That means that table sugar, brown sugar, molasses, sorghum, corn syrup, honey and the sugar found in fruits and milk are all cariogenic. A table listing foods and their sugar content is located on page 72.

It has been found that it is not only the amount of sugar eaten, but also the frequency of eating, the length of time the sugar stays in the mouth, and the form of the sugary food (i.e., liquid or sticky candy) that affects cavity production. The more often a person eats sugar, the more often acids form on the teeth. Dentists estimate that

every time a person eats, acids will act upon the tooth enamel for twenty minutes. A food containing sugar will increase the strength of the acid and, therefore, increase the chance of

damage to the tooth enamel. Similarly, the longer a sugary food stays in contact with the teeth the greater the chance there is for acid to form. With this in mind, a soda taken during a short period of time may cause fewer dental problems than a hard candy that remains in the mouth for a prolonged period of time, feeding the bacteria and prolonging the acid attack on the tooth enamel. Chewing candies (such as toffee or caramels) are particularly detrimental to oral health because they contain large quantities of sugar and exist in a sticky consistency that is difficult to remove from the teeth.

Remember that frequency is also a factor. Consider that a slowly sipped cup of sugared coffee may be more hazardous than a quickly swallowed solid food like a sugared donut because of the frequency of attack. For the same reason, five sticks of gum chewed all at once may be less damaging than five sticks chewed individually throughout the day. It should be mentioned here that starch, another form of carbohydrate found in foods such as breads, cereals and potatoes, will break down to form a type of sugar. Because it takes longer for starches to break down, the starch will usually be in the stomach before it is changed into a sugar. However, if the starch is a consistency which sticks tightly to the teeth (like potato chips), it might be broken down to sugar in the mouth, thereby contributing the energy the bacteria needs to form plaque. Because much of the fiber is removed, white bread tends to have a consistency that readily sticks to the teeth. Other breads and cereals also can stick to teeth, although to a lesser extent.

As mentioned earlier, the sugar in milk and fruit is just as cariogenic as table sugar and honey, but the foods in which they are contained have many vitamins and minerals necessary for dental health. In addition, the consistency of foods is such that they do not easily stick to the teeth and, therefore, don't provide a ready supply of energy for bacteria. There are exceptions such as bananas or dried fruits. Bananas, a good source of potassium, are also cariogenic because of their sticky nature.

Dried fruits are a good source of minerals and a fair source of vitamins, but they may contain as much as 70% sugar. In the drying process, the water is removed to make the fruit a more concentrated source of sugar. Additionally, the change causes the starch in fruits to become sugar. Due to the change in consistency and high sugar content, dried fruits are considered to be cariogenic.

Treatment

Once dental caries exist, the only treatment is to go to the dentist and have the cavity "filled." Nutritional intervention at this point is too late; however, following the guidelines that we have just listed for preventing caries may improve the child's future dental health.

So You Think You Don't Eat Much Sugar?

Here are the approximate amounts of refined sugar and added sugar (in addition to the sugar naturally present) hidden in popular foods.

Food Item	Portion Size	Approximate sugar content in teaspoonfuls of granulated sugar
Soft Drink	1 – 12 oz. can	9
Angel food cake	1 – 4 oz. piece	7
Cheese cake	1 – 4 oz. piece	2
Chocolate cake-iced	1 – 4 oz. piece	15
Cup cake-iced	1	6
Chocolate cookies	1	1 ½
Fig Newton	1	5
Ginger snaps	1	13
Donut -glazed	1	6
Lifesavers	1	⅓
Canned peaches	2 halves and 1 Tbsp syrup	6
Jelly/jam	1 Tbsp	46
Apple pie	1 slice (1/6 of pie)	12
Ice cream	⅓ quart	23
Raisins	1 Tbsp	2
Honey	1 Tbsp	3



Self-Check #12

After completing **Self-Check #12** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

1. Which are proper guidelines for cleaning the teeth of a preschooler?
 - a. Brush the teeth at least twice a day.
 - b. After age one, children can use fluoridated toothpaste.
 - c. Instruct children how to brush their own teeth at one year and allow them to do so.
 - d. Floss once a day.

2. Which sugar is the most cariogenic?
 - a. table sugar
 - b. natural sugar in fruit
 - c. honey
 - d. molasses
 - e. corn syrup
 - f. all of the above

3. Which is the most important factor in the relationship of sugar to dental disease?
 - a. The total amount of sugar eaten per day.
 - b. The number of times sugar-containing food is eaten per day.
 - c. The form in which sugar is eaten.
 - d. All of the above

4. List at least three healthy habits for preventing dental problems.
 - a.
 - b.
 - c.

Lead Poisoning in Children

Approximately 250,000 U.S. children aged 1-5 years have blood lead levels greater than 10 micrograms of lead per deciliter of blood, the level at which CDC recommends public health actions be initiated. Lead poisoning can affect nearly every system in the body. Because lead poisoning often occurs with no obvious symptoms, it frequently goes unrecognized.

Lead poisoning is a persistent, but entirely preventable public health problem in the United States. It is most common in children, but can occur in other groups as well. Blood lead levels have been declining in the U.S. population as a whole in recent years, but children remain at risk. Children absorb lead more readily than adults and children's developing nervous systems are particularly vulnerable to lead's effects.

All children under the age of 6 years old are at risk of lead poisoning because they are growing so rapidly and because they tend to put their hands or other objects, which may be contaminated with lead dust, into their mouths.

Children living at or below the poverty line who live in older housing are at greatest risk for lead poisoning. Additionally, children of some racial and ethnic groups and those living in older housing are disproportionately affected by lead.

Problems from High Lead Levels

High levels of lead can cause problems with the brain, kidneys and bone marrow. Symptoms of high lead levels can include stomach pain, headaches, vomiting, confusion, muscle weakness, seizures, hair loss and anemia. Lower levels of lead in the body can also cause problems, like trouble paying attention, behavior problems, learning difficulties and a fall in the IQ of young children.

How Are Young Children Exposed to Lead?

Lead-based paint and lead contaminated dust are the main sources of exposure for lead in U.S. children. Lead has not been used in house paint since 1978, however, many older homes and apartment buildings (especially those built before 1960) have lead-based paint and it is the deterioration of this paint that causes a problem.

Toddlers explore their world by putting things in their mouths. Therefore, young children who live in older buildings are especially high risk of getting lead poisoning. Children can get lead poisoning by chewing on pieces of peeling paint or by swallowing house dust or soil that contains tiny chips of the leaded paint from these buildings.

Lead can also be in air, water and food. Lead levels in the air have decreased greatly since lead was taken out of gasoline (in the 1970s). Lead is still found in some old water pipes, although using lead solder to mend or put together water pipes is no longer allowed in the United States. Lead can also be found in food or juice stored in foreign-made cans or improperly fired ceramic containers.

Preventing Lead Exposure

The goal is to prevent lead exposure to children before they are harmed. There are many ways parents can reduce a child's exposure to lead. The key is stopping children from coming into contact with lead. Lead hazards in a child's environment must be identified and controlled or removed safely. Here are some things parents can do to lower their child's risk of lead poisoning:

- If they live in a house or an apartment built before 1978, ask your doctor about lead testing for their child and keep their child away from peeling paint. Peeling paint needs to be removed from all surfaces up to 5 feet above the floor. It is also a good idea to repaint the rooms to seal in the lead paint.
- If they are remodeling an old home, seal off the rooms that are being worked on. For example, put heavy sheets of plastic over doorways and windows of the work area.
- If there's a problem with lead poisoning in the area where they live, or if a lot of older houses in the neighborhood are being remodeled, have the family wipe their feet and take their shoes off before they come into the house. This will lower the chance of tracking soil with lead in it into the home.
- Wash your child's hands and face before meals.
- Regularly wash your child's hands and toys. Hands and toys can become contaminated from household dust or exterior soil. Both are known lead sources.
- Regularly wet-mop floors and wet-wipe window components. Because household dust is a major source of lead, parents should wet-mop floors and wet-wipe horizontal surfaces every 2-3 weeks. Windowsills and wells can contain high levels of leaded dust. They should be kept clean. If feasible, windows should be shut to prevent abrasion of painted surfaces or opened from the top sash.
- Prevent children from playing in bare soil; if possible, provide them with sandboxes. Parents should plant grass on areas of bare soil or cover the soil with grass seed, mulch, or wood chips, if possible. Until bare soil is covered, parents should move play areas away from bare soil and away from the sides of the house. If using a sandbox, parents should also cover the box when not in use to prevent cats from using it as a litter box. That will help protect children from exposure to animal waste.
- Avoid using traditional home remedies (lead has been found in some traditional [folk] medicines used by East Indian, Indian, Middle Eastern, West Asian, and Hispanic cultures) and cosmetics that may contain lead.
- Avoid eating candies imported from Mexico. Certain candy ingredients such as chili powder and tamarind may be a source of lead exposure. Lead sometimes gets into the candy when processes such as drying, storing, and grinding the ingredients are done improperly. Also, lead has been found in the wrappers of some imported candies. The ink of these plastic or paper wrappers may contain lead that leaches into the candy.
- Avoid using containers, cookware, or tableware to store or cook foods or liquids that are not shown to be lead free.
- Remove recalled toys and toy jewelry immediately from children. Check Lead Recalls lists at <http://www.cdc.gov/nceh/lead/Recalls/allhazards.htm>.

- Use only cold water from the tap for drinking, cooking, and for making baby formula (Hot water is more likely to contain higher levels of lead. Most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.).
- Shower and change clothes after finishing a task that involves working with lead-based products such as stain glass work, bullet making, or using a firing range.

Nutrition Recommendations for Reducing Lead Levels

Parents can reduce their child’s risk of high lead levels by offering regular meals and snacks to their children. Children with empty stomachs absorb more lead than children with full stomachs. Offer 3 meals and 2-3 small snacks throughout the day.

Calcium and iron are two nutrients in a child’s diet that are important in helping to reduce the risk of lead poisoning. Normal levels of iron help protect the body from the harmful effects of lead and calcium reduces the absorption of lead as well as builds strong bones and teeth. Vitamin C–rich foods with iron-rich foods work together to reduce the absorption of lead.

As a reminder, here are some good dietary sources of iron-, vitamin C- and calcium-rich foods:

IRON

- Lean red meats, fish, poultry
- Whole grain and iron-fortified cereals and breads
- Fortified pasta
- Dark green leafy vegetables
- Dried beans and peas

VITAMIN C

- Oranges/orange juice
- Grapefruits/grapefruit juice
- Tomatoes/tomato juice
- Broccoli
- Green pepper
- Strawberries

CALCIUM

- Milk
- Yogurt
- Cheese
- Green leafy vegetables (spinach, kale, collard greens)

For more information about lead and reducing the risk of lead poisoning, see the following:

- *Fight Lead Poisoning with a Healthy Diet: Lead Poisoning Prevention Tips for Families* at <http://www.epa.gov/lead/pubs/nutrition.pdf>
- *Prevention Tips* at <http://www.cdc.gov/nceh/lead/tips.htm>



Self-Check #13

After completing **Self-Check #13** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

1. True or False. Lead poisoning can affect nearly every system in the body.
2. True or False. Only children under the age of 3 are at risk of lead poisoning.
3. The main sources of exposure for lead in U. S. children are _____ and _____.
4. True or False. Parents can decrease their child's risk of lead poisoning by avoiding letting their child eat candies imported from Mexico.
5. Parents can reduce their child's risk of high lead levels by offering _____ and _____ to their children.
6. Which two nutrients in a child's diet are important in helping to reduce the risk of lead poisoning?
 - a. Vitamin A and Vitamin C
 - b. Vitamin D and calcium
 - c. Calcium and protein
 - d. Iron and calcium

VENA Counseling Session for Children

The following are suggested VENA (Value Enhanced Nutrition Assessment) counseling session guidelines for certification and follow-up visits with parents and caretakers of children.

- I. Assessment at Certification Visits**
 - A. Assess correctness of measurements and plotting of weight and standing height (or recumbent length, whichever is appropriate).
 - B. Assess hemoglobin level.
 - C. Assess immunization record.
 - D. Assess child's past history and collect missing information.
 - E. Assess nutrition practices through use of open-ended questions (using VENA questions)
 - F. Assign all applicable Nutrition Risk Factors.

- II. Counseling Points**
 - A. Explain reasons for WIC eligibility.
 - B. Utilize the three-step client-centered process to elicit concerns and assess knowledge of parent or caregiver
 - C. Provide information – limiting number of nutrition messages given and tailoring to the specific needs/concerns of the parent or caregiver.

- III. Behavior Change & Goal Setting**
 - A. Help parent or caregiver prioritize nutrition concerns and identify one to two nutrition or feeding changes that the parent or caregiver is willing to make to improve the child's nutrition issues.
 - B. Assist the parent or caretaker in setting a goal(s) that is specific and realistic for the family's lifestyle.

- IV. Referral**
 - A. See Nutritionist within one month for High Risk nutrition counseling.
 - B. Refer to physician for well child care.
 - C. Refer to other community services as appropriate and available, such as Medicaid, Food Stamps, TEA, parenting classes, etc.
 - D. Make other referrals as appropriate.

- V. Documentation**
 - A. Document referrals made.
 - B. Document educational materials provided.
 - C. Document participant's comments.
 - D. Document any follow-up on goals and referrals.
 - E. Document assessment/ nutrition education plan.
 - F. Document behavior change goals.

It is still a part of a nutrition assessment to identify risk factors, however, the focus of the nutrition assessment should not be on what risks or deficiencies will qualify the infant for the WIC program. The focus of the assessment should be on what information the CPA can collect and identify to assist the parent or guardian in gaining a greater appreciation of how the child can achieve optimal growth and development in a nurturing environment and to develop a foundation for healthy eating practices. This is all part of a **value enhanced nutrition assessment (VENA)**.

Nutrition Risk Factors of Children

Introduction

As we discussed throughout this module, adequate nutrition during early childhood is very important for long-term growth and health. All children enrolled in WIC will receive a nutrition assessment. Some children will need special nutrition counseling because of certain factors related to their health. These are called nutrition assessment risk factors. Nutrition risk factors affect a child's nutritional needs and his/her food intake.

For example, a child who takes a bottle to bed is considered at nutritional risk due to inappropriate nutrition practices. This is because when the child lies

flat in bed with the bottle, the milk or other liquid can come back up in their throat, enter the Eustachian tube, and cause an ear infection. Except for water, prolonged contact with other liquids throughout the night may cause extensive decay of the teeth or baby bottle tooth decay.

A child with who is at nutrition risk has an increased chance of poor growth and development. Therefore, it is extremely important that we understand the nutrition risks of children and how to identify them.

There are some children who are identified as **High Risk**. These children have more serious nutrition risks than the others. An example of this is a child who is not gaining weight adequately. High Risk children need in-depth nutrition counseling and education. CPAs must refer all High Risk participants to the Nutritionist within 45 days of their nutrition assessment.

Non-high Risk children are at risk for nutrition-related problems, but do not require the intensive follow-up of as High Risk infants. The CPA provides client-centered nutrition education and assists the parent or caregiver in identifying a nutrition goal to achieve positive health outcomes.

This section of the module will define and discuss those nutrition risk factors that are assessed during a child's WIC nutrition assessment.

The nutrition assessment risk factors are divided into five main categories:

1. Anthropometric
2. Biochemical
3. Clinical
4. Dietary
5. Environmental and Family Factors

Each nutrition assessment risk factor will be identified as either High Risk (requiring referral to the Nutritionist for further assessment and counseling) or Non-high Risk (referral to the Nutritionist is not required but the CPA may do so if the CPA feels WIC family can benefit from further guidance).

Anthropometric Nutrition Assessment Risk Factors

Growth and Development in Children

Growth is an increase in the physical size of the body whereas **development** is the process of maturing. Several factors affect these milestones of infancy.

1. **Genetics** - Inherited family characteristics that influence body build and height as well as inherited hormonal deficiencies such as, hypothyroidism, can affect normal growth and development.

2. **Environment** - Social and economic variables (such as, parent's or caregiver's ability to show affection, living in poverty, parents' educational level) that influence a person's ability to grow and develop.

3. **Behaviors** - Mother's behaviors can affect a child's biological abilities for growth. For example, habits such as smoking or drug use during pregnancy can reduce birth weight and affect growth. Parents or caregiver's food selection and feeding behaviors can affect growth and development.

There are several anthropometric/growth-related factors that may be affected by nutrition and therefore will qualify a child for the WIC Program. A child's weight status, length, gestational age at birth, rate of growth, as well as birth weight all are indicators of how a child will likely grow or is growing. The quality and quantity of the child's diet will further influence the infant's growth and development.

The anthropometric nutrition assessment risk factors that will be discussed include:

- Underweight; at risk of becoming underweight
- Overweight
- At risk of becoming overweight
- Short stature; at risk of short stature
- Inadequate growth
- Low birth weight; very low birth weight
- Prematurity
- Small for gestational age

It is important to recognize that identifying WIC children as having these risk factors provides staff with a baseline for providing client-centered education.

A child born with a low birth weight will need to receive optimum nutrition in order to grow to his/her potential. WIC CPAs have an opportunity to greatly improve the outcome of a child with growth challenges by providing nutrition education and, when necessary, making referrals to Nutritionists, health care providers, and other programs to help families with children who have special needs.

If the CPA identifies a child with a rapid increase in weight, staff should gather information on feeding and eating skills and the family environment to assess whether the family may benefit from child feeding guidelines review or other nutrition information and education and counseling.

This section describes the anthropometric/growth-related nutrition assessment risk factors and provides an overview of some of the ways the CPA can work with the parents and caregivers. In all situations, an important role of the WIC staff is to collect information to best understand what the parent or caregiver's concerns are about the child. In WIC, CPAs should become skilled at finding out about the child's feeding environment (when and where the child is fed, who feeds the child, does the child feed himself, etc.). The CPA must assess the parent or caregiver's level of concern about feeding-related issues and learn how they are responding to them.

For example, a parent or caregiver is concerned that her child is small and is eating enough, so she has been trying to make the child finish everything on their plate. The parent or caregiver may not realize that her feeding reaction could make the situation worse. In WIC we want to emphasize healthy feeding relationships rather than focus only on weight. In this situation, the CPA could acknowledge the mother's concern about the child's size and then go on to collect information about the feeding environment to determine what to discuss. Force-feeding may not be the answer.

WIC CPAs are a great source of nutrition and developmental information. By providing anticipatory guidance on the next developmental milestone or expectation with feeding, you can prevent inappropriate feeding behaviors from ever occurring. At every visit, praise parents and caregivers for what they are doing correctly. Help them increase their confidence in parenting and, maybe, they'll be more open to other suggestions.

Another important role of the CPA is referring families to their health care providers and other appropriate community resources.

Monitoring Growth

WIC uses growth charts to evaluate normal growth in length/height and weight. The standard growth curves on the charts are the variations seen in the normal growth of healthy children. The charts were constructed by weighing and measuring large numbers of children and noting the variations in height and weight over time. When you use the growth charts in this way--to compare an individual child's growth with that of other children -- you are primarily checking for changes in the growth rate. Don't get caught up in treating growth curves like grades in school. A child growing at the 95th percentile isn't doing any better than the one growing at the 5th percentile. The most important aspect of the growth curve is to be able to compare each individual child to herself--to evaluate her growth as it progresses from one month/year to the next. You will want to assess whether an odd result is an inaccurate measurement or a potential health problem. Refer to Screening Module-Level 1 for more information on accurate measurements and plotting.

Let's now review the specific nutrition assessment risk factors related to anthropometrics/growth.

Underweight/At Risk of Underweight (Nutrition Risk Factor 103)

Underweight:

Birth to 2 years: $\leq 5^{\text{th}}$ percentile weight-for-length
2 to 5 years: $\leq 5^{\text{th}}$ percentile Body Mass Index (BMI)

At Risk of Underweight:

Birth to 2 years: 6^{th} through 10^{th} percentile weight-for-length
2 to 5 years: 6^{th} through 10^{th} percentile Body Mass Index (BMI)

Background information and education suggestions

Children whose growth measures less than the 5^{th} percentile are in need of nutritional intervention. It is WIC's position that a child whose growth measures less than or equal to the 10^{th} percentile is also at nutritional risk and in need of preventive nutritional intervention, or at least further evaluation. Weight-for-length is sensitive to acute under-nutrition but can also reflect long-term issues. Physical growth delay can be an indicator of the effects undernutrition can have on immune function, organ development, hormonal function and brain development. Participation in WIC has been associated with improved growth in both weight and height in children.

- Complete an assessment of nutrition practices, eating patterns and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver. Tailor nutrition education to participant's identified needs and concerns.
 - Discuss the factors that might be contributing to or directly causing the child to be underweight, such as illness.
 - Let caregiver know it may be normal growth for the child if they have always tracked on the same percentiles.
 - Explain to the parent or caregiver the causes and potential problems of being underweight.
 - Discuss general eating behaviors/issues that can lead to inadequate caloric intake.
 - Review the MyPyramid for Preschoolers for young children and recommend types of foods and quantities appropriate for the child's age group.
 - Discuss eating behaviors and food habits which promote a healthy appetite such as regular meal/snack time, creating a calm, relaxed meal atmosphere, and not using food as a bribe.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier eating habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the caregiver understands and agrees with the plan.
- Provide the parent or caregiver with related educational materials to help reinforce the message if appropriate and desired.
- Children assessed with this risk factor are considered High Risk and must be referred to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Overweight (Nutrition Risk Factor 113)

≥ 24 months of age to 5 years of age and $\geq 95^{\text{th}}$ percentile BMI **OR** $\geq 95^{\text{th}}$ percentile weight-for-stature

Note: for children 24 to < 36 months of age with a *recumbent length*, use *weight-for-length* $\geq 95^{\text{th}}$ percentile

Background information and education suggestions

- Review section on overweight in this module for more details.
- Complete assessment of nutrition practices, eating patterns and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver. Tailor nutrition education to participant's identified needs and concerns.
 - Determine if the child's nutrient needs are met, if intake is excessive or inadequate in any food group.
 - Evaluate when and where the child eats and how the quantity the child eats is decided.
 - Discuss child's activity patterns with parent or caregiver.
 - Assess the child's interest, participation, and opportunities to play.
 - Assist in identifying short term goals to result in dietary and activity changes such as incorporating structure to meals or daily family physical activity.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier eating habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the parent or caregiver understands and agrees with the plan.
- Provide the parent or caregiver with related educational materials to help reinforce the message if appropriate and desired.
- Children assessed with this risk factor are considered High Risk and must be referred to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

At Risk of Becoming Overweight (Nutrition Risk Factor 114)

Have one or more risk factors for being at-risk of becoming overweight:

- Being ≥ 24 months of age and $\geq 85^{\text{th}}$ and $< 95^{\text{th}}$ percentile BMI or $> 85^{\text{th}}$ and $< 95^{\text{th}}$ percentile weight-for-stature (i.e., standing height only). Cannot be used for children 24-36 months with a recumbent length measurement.
- Having a biological mother who is obese (BMI ≥ 30) at time of certification. (See Nutrition Risk Factor definitions in Appendices of WIC Policy Manual for more detailed definition)
- Having a biological father who is obese (BMI ≥ 30) at the time of certification.

(See Nutrition Risk Factor definitions in Appendices of WIC Policy Manual for more detailed definition)

Background information and education suggestions:

- Review module section on overweight for more details.
- Complete assessment of nutrition practices, eating patterns and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver. Tailor nutrition education to participant's identified needs and concerns.
 - Determine if the child's nutrient needs are met, if intake is excessive or inadequate in any food group.
 - Evaluate when and where the child eats and how the quantity the child eats is decided.
 - Discuss child's activity patterns with parent or caregiver.
 - Assess the child's interest, participation, and opportunities to play.
 - Assist in identifying short term goals to result in dietary and activity changes such as incorporating structure to meals or daily family physical activity.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier eating habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the parent or caregiver understands and agrees with the plan.
- Provide the parent or caregiver with related educational materials to help reinforce the message if appropriate and desired.
- Children assessed with this risk factor are considered Non-high Risk and do not require a referral to the Nutritionist. However, the CPA may refer to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Short Stature/At Risk of Short Stature (Nutrition Risk Factor 121)

Short Stature:

Birth to 2 years: $\leq 5^{\text{th}}$ percentile length-for-age

2 to 5 years: $\leq 5^{\text{th}}$ percentile height –for-age

At Risk of Short Stature:

Birth to 2 years: 6^{th} through 10^{th} percentile length-for-age

2 to 5 years: 6^{th} through 10^{th} percentile height-for-age

Background information and education suggestions

Short stature may be from normal variation or from health and nutritional deficiencies over a long period of time. The first years of life are marked by rapid growth in stature so nutritional deficiencies at that time can affect growth.

- Complete assessment of nutrition practices, eating patterns and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver. Tailor nutrition education to participant's identified needs and concerns.
 - If nutritional inadequacies are present, dialogue with the parent or caregiver to identify factors that might be contributing to poor intake such as chronic illness.
 - Review the *MyPyramid for Preschoolers* for young children and recommend types of foods and quantities appropriate for the child's age group.
 - Discuss eating behaviors and food habits that promote a healthy appetite such as regular meal/snack times.
 - Staff may also ask the height of the child's biological parents to consider as a variable that may help explain some short stature.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier feeding habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver confirm that the parent or caregiver understands and agrees with the plan.
- Provide the parent or caregiver with related materials to help reinforce the message if appropriate and desired.
- Children assessed with this risk factor are considered Non-high Risk and do not require a referral to the Nutritionist. However, the CPA may refer to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Inadequate Growth (Nutrition Risk Factor 135)

Two Options:

Option 1: Based on two weight measurements taken at least three months apart, actual weight gain is less than the expected weight gain of the following:

Age	Average Weight Gain
12 to 59 months	2 ½ g /day 0.6 oz /day 2.7 oz/month 1 lb in 6 months

Option 2: a low rate of weight gain over a six month period (+/- 2 weeks) as specified in the table below:

Age at End of 6 Month Interval	Weight Gain per 6 Month Interval
12 months	≤ 3 lbs
18 to 60 months	≤ 1 lb

Background information and education suggestions

Weight for age is a sensitive indicator of acute nutritional inadequacy. Children with abnormally slow growth can benefit from nutrition and health interventions to improve weight and height gain. The diagnosis of slow growth must consider possible causes of growth changes including undereating and disease conditions. Undereating, for any number of reasons, and disease conditions are the main causes of abnormally slow growth. Factors associated with undereating by a child include inadequate sources of nutrient dense foods; lack of social support for the caregiver; an adverse social and psychological environment; a disorganized family; depressed parents or caregivers; and the caregiver's lack of education, health and nutrition knowledge, mental and physical abilities, and responsibility for child care. There is good evidence that through nutrition education, supplemental foods, and referrals to other health and social services, participation in the WIC Program will benefit children with slow growth.

- Complete assessment of nutrition practices, eating patterns and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver. Tailor nutrition education to participant's identified needs and concerns.
 - Discuss with the parent or caregiver factors that might be contributing to or directly causing the child to not be gaining weight adequately, such as illness, feeding issues, etc.
 - Discuss general eating behaviors/issues which can lead to inadequate caloric or nutrient intake.

- Review the *MyPyramid for Preschoolers* for young children and recommend types of foods and quantities appropriate for the child's age group.
 - Discuss eating behaviors and food habits which promote a healthy appetite such as regular meal/snack times, creating a calm, relaxed meal atmosphere, and not using food as a bribe.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier feeding habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the parent or caregiver understands and agrees with the plan.
- Provide the parent or caregiver with related educational material to help reinforce the message if appropriate and desired.
- Children assessed with this risk factor are considered High Risk and must be referred to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Low birth weight and Very low birth weight (for children < 24 months of age)
(Nutrition Risk Factor 141)

Low birth weight (LBW):

Birth weight of \leq 5 pounds 8 ounces (\leq 2500 grams)

Very low birth weight (VLBW):

Birth weight of \leq 3 pounds 5 ounces (\leq 1500 grams)

Background information and education suggestions

See Infant Nutrition Module for additional information on this risk factor.

Low birth weight (LBW) is one of the most important biologic predictors of infant death and deficiencies in physical and mental development during childhood among those babies who survive and continues to be a strong predictor of growth in early childhood. Infants and children born with LBW/VLBW, particularly LBW/VLBW caused by fetal growth restriction, need an optimal nutrient intake to survive, meet the needs of an extended period of relatively rapid postnatal growth, and complete their growth and development.

- Complete assessment of nutrition practices, eating patterns and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver. Tailor nutrition education to participant's identified needs and concerns.
 - Discuss with the parent or caregiver factors that might contribute to or directly cause inadequate weight gain, such as illness, feeding issues, etc.

- Discuss general eating behaviors/issues which can lead to inadequate caloric or nutrient intake.
- Review the *MyPyramid for Preschoolers* for young children and recommend types of foods and quantities appropriate for the child's age group.
- Discuss eating behaviors and food habits which promote a healthy appetite such as regular meal/snack times, creating a calm, relaxed meal atmosphere, and not using food as a bribe.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier feeding habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the parent or caregiver understands and agrees with the plan.
- Provide the parent or caregiver with related educational material to help reinforce the message if appropriate and desired.
- Children assessed with this risk factor are considered High Risk and must be referred to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Prematurity (Children < 24 months old only) (Nutrition Risk Factor 142)

Birth at less than or equal to 37 weeks gestation (infants and children less than 24 months old).

Background information and education suggestions

Children who are born premature are more likely to be low birth weight. Low birth weight is one of the most important biologic predictors of infant death and deficiencies in physical and mental development during childhood among those babies who survive and continues to be a strong predictor of growth in early childhood. Infants and children born premature/with LBW/VLBW, particularly if caused by fetal growth restriction, need an optimal nutrient intake to survive, meet the needs of an extended period of relatively rapid postnatal growth, and complete their growth and development.

- Complete assessment of nutrition practices, eating patterns and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver. Tailor nutrition education to participant's identified needs and concerns.
 - Discuss with the parent or caregiver factors that might contribute to or directly cause inadequate weight gain, such as illness, feeding issues, etc.
 - Discuss general eating behaviors/issues which can lead to inadequate caloric or nutrient intake.
 - Review the *MyPyramid for Preschoolers* for young children and recommend types of foods and quantities appropriate for the child's age group.

- Discuss eating behaviors and food habits which promote a healthy appetite such as regular meal/snack times, creating a calm, relaxed meal atmosphere, and not using food as a bribe.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier feeding habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the parent or caregiver understands and agrees with the plan.
- Provide the parent or caregiver with related educational material to help reinforce the message if appropriate and desired.
- Children assessed with this risk factor are considered Non-high Risk and do not require a referral to the Nutritionist. However, the CPA may refer to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Small for Gestational Age (Nutrition Risk Factor 151)

For infants and children less than 24 months old:

Presence of small for gestational age diagnosed by a physician as self reported by applicant/participant/caregiver; or as reported or documented by a physician, or someone working under physician's orders.

Background information and education suggestions

Impairment of fetal growth can have adverse effects on the nutrition and health of children during infancy and childhood, including higher mortality and morbidity, slower physical growth, and possibly slower mental development. Infants who are small for gestational age (SGA) are also more likely to have congenital abnormalities and are at markedly increased risk for fetal and neonatal death, hypoglycemia, hypocalcemia, polycythemia, and neurocognitive complications of pre- and intrapartum hypoxia. Over the long term, growth-retarded infants may have permanent mild deficits in growth and neurocognitive development. Nutrition and health interventions for infants with SGA can help minimize the adverse health and nutrition consequences associated with SGA as well as maximize the potential for subsequent catch-up growth and development among these infants and children.

- Complete assessment of nutrition practices, eating patterns and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver. Tailor nutrition education to participant's identified needs and concerns.
 - Discuss with the parent or caregiver factors that might contribute to or directly cause inadequate weight gain, such as illness, feeding issues, etc.

- Discuss general eating behaviors/issues which can lead to inadequate caloric or nutrient intake.
 - Review the *MyPyramid for Preschoolers* for young children and recommend types of foods and quantities appropriate for the child's age group.
 - Discuss eating behaviors and food habits which promote a healthy appetite such as regular meal/snack times, creating a calm, relaxed meal atmosphere, and not using food as a bribe.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier feeding habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the parent or caregiver understands and agrees with the plan.
- Provide the parent or caregiver with related educational material to help reinforce the message if appropriate and desired.
- Children assessed with this risk factor are considered Non-high Risk and do not require a referral to the Nutritionist. However, the CPA may refer to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.



Self-Check #14

After completing **Self-Check #14** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

1. Name the five main categories of child nutrition assessment risk factors:
 - a.
 - b.
 - c.
 - d.
 - e.
2. Nutrition risk factors are identified as _____ and _____ Risk.
3. _____ Risk infants must be referred to the Nutritionist for further assessment and nutrition counseling.
4. _____ is an increase in the physical size of the body whereas _____ is the process of maturing.

True or False

5. T F Children whose growth measures less than the 5th percentile are in need of nutritional intervention.
6. T F Physical growth delay can be an indicator of the effects undernutrition can have on immune function, organ development, hormonal function and brain development.
7. T F A child whose biological father has a BMI of 29 is at risk of becoming overweight.
8. T F Short stature may result from health and nutritional deficiencies over a long period of time
9. T F Weight for age is not a sensitive indicator of acute nutritional inadequacy.
10. T F Low birth weight (LBW) is a strong predictor of growth in early childhood.

11. Prematurity is a nutrition risk factor for infants and children to what age?
- a. 15 months only
 - b. 18 months only
 - c. less than 24 months
 - d. none of the above
12. Small for gestational age is a nutrition risk factor for infants and children to what age?
- a. 15 months only
 - b. 18 months only
 - c. less than 24 months
 - d. none of the above

Biochemical Nutrition Assessment Risk Factors

The two biochemical indicators for children that define nutrition risk include blood hemoglobin as an assessment of iron deficiency anemia and blood lead levels as an assessment of elevated lead levels.

See the **Iron Deficiency** section and the **Lead Poisoning in Children** section in this module for additional information on iron deficiency anemia and lead poisoning.

Low hemoglobin/hematocrit (Nutrition Risk Factor 201)

Children 1-23 months of age		Children 2-5 years of age	
Hgb	Hct	Hgb	Hct
<11.0	<32.9	<11.1	<33.0

Background information and education suggestions for Non-high Risk counseling:

The greatest risk to children with anemia (mild and severe) is a delay in mental and motor development. Children with anemia are less successful on specific cognitive processes than children with adequate iron stores.

- Complete an assessment of nutrition practices, and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caretaker.
 - Tailor nutrition education to participant's identified needs and concerns.
 - Discuss the MyPyramid for Preschoolers for young children and recommend types of foods and quantities appropriate for the child's age group.
 - Identify if the child is consuming an excessive amount of milk and snacking on or eating foods low in iron.
 - Discuss the importance of iron with the parent or caregiver.
 - Find out what they know about iron, e.g., iron's importance and food sources.
 - Identify ways to incorporate iron into the diet. Encourage the use of WIC iron-fortified cereals and protein foods.
 - Explain the relationship between non-heme iron and the ability of vitamin C to enhance absorption if meats are not routinely eaten.
- Listen to the caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier feeding habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the parent or caregiver understands and agrees with the plan.
- Provide the parent or caregiver with related educational materials to help reinforce the message if appropriate and desired.
- Appoint for follow-up if needed.
- See *Counseling Guidance Tool for Children* for additional information.

Elevated Blood Lead Levels (Nutrition Risk Factor 211)

Blood lead level of ≥ 10 $\mu\text{g}/\text{dl}$ within the past twelve months reported or as documented by a physician or someone working under a physician's orders.

Background information and education suggestions

Lead poisoning occurs in children primarily because of their hand-to-mouth activities. Young children, who are permitted to play in the dirt and habitually put their fingers/thumb in their mouth, should be instructed to wash their hands frequently. Additionally, living in a house that was built before 1950 can put a child at risk for lead poisoning. The effects of lead poisoning are debilitating. Adequate nutrient intake is known to decrease children's susceptibility to the toxic effects of lead.

- Complete assessment of diet, eating patterns, and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver.
 - Tailor nutrition education to participant's identified needs and concerns.
 - Ensure the diet is high in calcium and iron and that regular meals and snacks are offered. Lead is better absorbed on an empty stomach.
 - Staff can discuss the *MyPyramid for Preschoolers* for young children and recommend types of foods and quantities appropriate for the child's age group to parent or caregiver who report an elevated lead level for the child.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier eating habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the caregiver understands and agrees with the plan.
- Provide the parent or caregiver with related educational materials to help reinforce the message if appropriate and desired.
- Children assessed with this risk factor are considered High Risk and must be referred to the Nutritionist for further assessment and nutrition counseling.
- Staff should also refer the parent or caregiver to lead treatment programs, if appropriate.
- See *Counseling Guidance Tool for Children* for additional information.

Clinical Nutrition Assessment Risk Factors

The clinical nutrition assessment risk factors include:

1. Failure to thrive
2. Nutrition-related medical conditions
3. Drug-nutrient interactions
4. Recent major surgery, trauma, burns

Failure to Thrive (FTT) (Nutrition Risk Factor 134)

Presence of failure to thrive (FTT) diagnosed by a physician as self reported by applicant/participant/caregiver; or as reported or documented by a physician, or someone working under physician's orders.

Background information and education suggestions

Failure to thrive (FTT) is a serious growth problem with an often-complex etiology. Some of the indicators that a physician might use to diagnose FTT include:

- Weight consistently below the 3rd percentile for age
- Weight less than 80% of ideal weight for height/age
- Progressive fall-off in weight to below the 3rd percentile
- A decrease in expected rate of growth along the child's previously defined growth curve irrespective of its relationship to the 3rd percentile.

Parents are often concerned about their children's weight, especially if they seem to be smaller than other children that are the same age. While there are many medical causes for being small and having poor weight gain, including inadequate nutrition, metabolic diseases, gastroesophageal reflux, parasite infestations, hyperthyroidism, and many chronic medical conditions, including congenital heart disease, renal failure, etc., it is often difficult to find a reason for a child's poor growth.

- Complete assessment of diet, eating patterns, and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver.
 - Tailor nutrition education to participant's identified needs and concerns.
 - Inquire about the eating environment.
 - Discuss age-appropriate foods and the general eating behaviors/ problems that can lead to inadequate calorie intake.
 - Staff can discuss with the parent or caregiver the *MyPyramid for Preschoolers* for young children and recommend types of foods and quantities appropriate for the child's age group and need for extra calories.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier eating habits and weight gain.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Provide the parent or caregiver with related educational materials to help reinforce the message if appropriate and desired.

- Children assessed with this risk factor are considered High Risk and must be referred to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Nutrition-Related Medical Conditions, Drug-Nutrient Interactions, Recent Major Surgery, Trauma, Burns (Nutrition Risk Factors 341-381)

A medical problem is a nutrition risk factor if it causes, contributes to, or results from an inability to obtain adequate nutrition for growth and development or the maintenance of health of the infant. The condition must have been diagnosed by a physician (as self-reported by the caregiver); or be reported or documented by a physician, or someone working under physician's orders.

Refer to WIC Policy and your Nutrition Risk Factor Definitions document for specific definitions of each these conditions.

There are only certain medical conditions that can be used as nutrition risk factors. Some of these conditions interfere with eating a large variety of foods such as a wheat allergy (which may prevent eating not only many foods from the grain group, but many other foods containing wheat). Other conditions change the need for nutrients or energy so that they are significantly above or below the normal requirement for the participant's age. Examples of these conditions include severe burns, cancer, heart disease, and some kinds of cerebral palsy. Some medical conditions require special diets, varied timing for when to start solids, nutrition supplements, eating equipment, or medications. For example, special diets are usually prescribed for diabetes and certain metabolic disorders. Participants with cystic fibrosis and celiac disease often use nutrition supplements and medications. Participants with severe cerebral palsy or cleft palate may use specially adapted eating utensils.

Below is a list of medical conditions that may put a child at risk for nutrition-related conditions.

- 341 -Nutrient Deficiency Diseases
- 342-Gastro-Intestinal Disorders
- 343-Diabetes Mellitus
- 344-Thyroid Disorders
- 345-Hypertension and Prehypertension
- 346-Renal Disease
- 347-Cancer
- 348-Central Nervous System Disorder
- 349-Genetic Congenital Disorders
- 351- Inborn Errors of Metabolism
- 352-Infectious Diseases
- 353-Food Allergies
- 354-Celiac Disease

- 355-Lactose Intolerance
- 356-Hypoglycemia
- 357-Drug Nutrient Interaction
- 360-Other Medical Conditions
- 361-Depression
- 382-Fetal Alcohol Syndrome

Refer to WIC Policy and your Nutrition Risk Factor Definitions document for specific definitions of each these conditions.

Background information and education suggestions

Some of these medical conditions interfere with eating a large variety of foods such as a wheat allergy (which may prevent eating not only many foods from the grain group, but many other foods containing wheat). Other conditions change the need for nutrients or energy so that they are significantly above or below the normal requirement for the child’s age and condition. Examples of these conditions include severe burns, cancer, heart disease, and some kinds of cerebral palsy. Some medical conditions require special diets, varied timing for when to start solids, nutrition supplements, eating equipment, or medications. For example, a special diet is usually prescribed for

diabetes and certain metabolic disorders. Children with cystic fibrosis and celiac disease often use nutritional supplements and medications. Children with severe cerebral palsy or cleft palate may use specially adapted eating utensils.

- Complete an assessment of diet, eating patterns, and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver.
 - Tailor nutrition education to participant’s identified needs and concerns.
 - Ask questions to find out if the child requires a special diet.
 - Staff may also need to inquire about the eating environment, food resources, and lifestyle as necessary.
 - Staff can provide information specific to the child’s needs and provide a tailored food package if appropriate.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthiest eating habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the caregiver understands and agrees with the plan.
- Provide the caregiver with related educational materials to help reinforce the message if appropriate and desired.
- Children assessed with these risk factors (except for 361 Depression) are considered High Risk and must be referred to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Common Question

How does the “division of responsibility” work for children with special needs? Can elements of it be used with children who are ill and children who may not be growing well?

Answer

“The division of responsibility”

Let’s review what this is. Parents and caregivers are responsible for *what, when, and where* foods are provided. Children are responsible for *how much* and even *whether they eat or not*. Adults should choose nutritious food, maintain a structure for meals and snacks, and make eating times pleasant.

This works very well for healthy children who are learning new skills and showing their independence. Research shows children determine how much food they need and will over time eat a variety of food when the adult has offered a wide variety of nutritious food with planned meals and snacks. This approach can avoid many battles over food and allow the child to feel in control of and trust their own appetite.

Other Factors to Consider

However, for children who have a serious or frequent illness or who are not following the expected growth or developmental stages for eating, many other factors need to be considered. It is alarming if an infant or young child is not growing and the caregiver reports the child refuses food and has difficulty eating such as gagging, choking, or difficulty swallowing. It is inappropriate to tell this parent or caregiver that her only responsibility is “to provide what, when, and where and if the child wants to eat, they will.” There may very well be a physical reason for why the child is having difficulty. This child must be appointed for High Risk nutrition counseling with the Nutritionist to assess additional information regarding feeding, growth history, and medical care. The child may need a referral to their physician to rule out organic or physical conditions. Additional feeding evaluations with an occupational or physical therapist may be needed.

If it is determined the child does have specific physical difficulties affecting the mechanics of eating, or medications affecting appetite, etc., the Nutritionist can provide specific ideas to increase calories and nutrients so each bite is power-packed. This helps the total calorie and nutrient intake to be close to the child’s needs even if the child only takes a few bites or sips. This helps the parent or caregiver to relax and not feel the need to “force feed.”

Force Feeding

What if this child with special needs refuses to take even these few bites? Scary! This situation can really frighten the parent or caregiver and may concern the WIC staff. Let’s ask ourselves, “Should anyone force a child to eat, even if it is for the child’s best interest?” The answer is NO! It doesn’t work to force a child to eat. It will only make the child continue to refuse and may even make the child develop an aversion to eating

or having anything around their mouth (tactile defensive). Forcing food interferes with the child's progression with eating, enjoyment when eating, and willingness to experiment with new foods or textures.

Monitor Growth and Refer for Evaluation and Resources

It is important for WIC to monitor the growth and feeding issues for children with special needs and developmental delays. WIC must provide additional referrals if a child continues to show poor growth, have an inadequate diet, and continues to have eating problems. Sometimes more aggressive intervention is needed with feeding evaluations, feeding clinics, physical therapy, tube feedings, special supplements, and additional metabolic and neurological testing.

Dietary Nutrition Assessment Risk Factors

Food choices can have short- and long-term effects on health status. These effects may be seen during the WIC assessment as other nutritional status indicators, such as altered body weight, growth pattern, or hemoglobin level. When such conditions are identified, it is logical to look for clues related to foods consumed. For example, an inappropriate feeding practice like putting routinely feeding sodas as the main beverage could explain a child's excessive weight gain or dental problems.

The dietary nutrition assessment risk factors in this category include:

1. Inappropriate Nutrition Practices for Children
 - a. Routinely feeding inappropriate beverages as the primary milk source
 - b. Routinely feeding a child any sugar-containing fluids
 - c. Routinely using nursing bottles, cups, or pacifiers improperly
 - d. Routinely using feeding practices that disregard the developmental needs or stages of the child
 - e. Feeding foods to a child that could be contaminated with harmful microorganisms
 - f. Routinely feeding a diet very low in calories and/or essential nutrients
 - g. Feeding dietary supplements with potentially harmful consequences
 - h. Routinely not providing dietary supplements recognized as essential by national public health policy when a child's diet alone cannot meet nutrient requirements
 - i. Routine ingestion of nonfood items(pica)
2. Failure to Meet Dietary Guidelines (2 years and older only)
3. Dietary Risk Associated with Complementary Feeding Practices (12 through 23 months only)

Inappropriate Nutrition Practices for Children (Nutrition Risk Factor 425)

This risk factor involves the routine use of feeding practices that may result in impaired nutrient status, disease, or health problems.

These practices, with examples, are outlined in the following table:

Inappropriate Nutrition Practices for Children	Examples of Inappropriate Nutrition Practices (including but not limited to)
Routinely feeding inappropriate beverages as the primary milk source. (425.1)	<p>Examples of inappropriate beverages as primary milk source:</p> <ul style="list-style-type: none"> • Non-fat or reduced-fat milks (between 12 and 24 months of age only) or sweetened condensed milk; and • Imitation or substitute milks (such as inadequately or unfortified rice- or soy-based beverages, non-dairy creamer), or other “homemade concoctions.”
Routinely feeding a child any sugar-containing fluids. (425.2)	<p>Examples of sugar-containing fluids:</p> <ul style="list-style-type: none"> • Soda/soft drinks • Gelatin water • Corn syrup solutions • Sweetened tea
Routinely using nursing bottles, cups, or pacifiers improperly. (425.3)	<ul style="list-style-type: none"> • Using a bottle to feed: <ul style="list-style-type: none"> ➢ Fruit juice, or ➢ Diluted cereal or other solid foods. • Allowing the child to fall asleep or be put to bed with a bottle at naps or bedtime. • Allowing the child to use the bottle without restriction (e.g., walking around with a bottle) or as a pacifier. • Using a bottle for feeding or drinking beyond 14 months of age. • Using a pacifier dipped in sweet agents such as sugar, honey, or syrups. • Allowing a child to carry around and drink throughout the day from a covered or training cup.
Routinely using feeding practices that disregard the developmental needs or stages of the child. (425.4)	<ul style="list-style-type: none"> • Inability to recognize, insensitivity to, or disregarding the child’s cues for hunger and satiety (e.g., forcing a child to eat a certain type and/or amount of food or beverage or ignoring a hungry child’s requests for appropriate foods).

Inappropriate Nutrition Practices for Children	Examples of Inappropriate Nutrition Practices (including but not limited to)
	<ul style="list-style-type: none"> • Feeding foods of inappropriate consistency, size, or shape that put children at risk of choking. • Not supporting a child’s need for growing independence with self-feeding (e.g., solely spoon-feeding a child who is able and ready to finger-feed and/or try self-feeding with appropriate utensils). • Feeding a child food with an inappropriate texture based on his/her developmental stage (e.g., feeding primarily pureed or liquid food when the child is ready and capable of eating mashed, chopped or appropriate finger foods).
Feeding foods to a child that could be contaminated with harmful microorganisms. (425.5)	<p>Examples of potentially harmful foods for a child:</p> <ul style="list-style-type: none"> • Unpasteurized fruit or vegetable juice; • Unpasteurized dairy products or soft cheeses such as feta, Brie, Camembert, blue-veined, and Mexican-style cheese; • Raw or undercooked meat, fish, poultry, or eggs; • Raw vegetable sprouts (alfalfa, clover, bean, and radish); • Deli meats, hot dogs, and processed meats (avoid unless heated until steaming hot).
Routinely feeding a diet very low in calories and/or essential nutrients. (425.6)	<p>Examples:</p> <ul style="list-style-type: none"> • Vegan diet; • Macrobiotic diet; and • Other diets very low in calories and/or essential nutrients.
Feeding dietary supplements with potentially harmful consequences. (425.7)	<p>Examples of dietary supplements which when fed in excess of recommended dosage may be toxic or have harmful consequences:</p> <ul style="list-style-type: none"> • Single or multi-vitamins; • Mineral supplements; and • Herbal or botanical supplements/remedies/teas.
Routinely not providing dietary supplements recognized as essential by national public health policy when a child’s diet alone cannot meet nutrient requirements. (425.8)	<ul style="list-style-type: none"> • Providing children under 36 months of age less than 0.25 mg of fluoride daily when the water supply contains less than 0.3 ppm fluoride. • Providing children 36-60 months of age less than 0.50 mg of fluoride daily when the water supply contains less than 0.3 ppm fluoride. • Not providing 400 IU of Vitamin D if a child

Inappropriate Nutrition Practices for Children	Examples of Inappropriate Nutrition Practices (including but not limited to)
	consumes less than 1 liter (or 1 quart) of vitamin D fortified milk or formula.
Routine ingestion of nonfood items (pica). (425.9)	Examples of inappropriate nonfood items: <ul style="list-style-type: none"> • Ashes; • Carpet fibers • Cigarettes or cigarette butts • Clay • Dust • Foam rubber • Paint chips • Soil • Starch (laundry and cornstarch).

Background information and education suggestions:

Once a parent or caregiver indicates that they are feeding their child in a way that puts their child at nutrition or health risk, staff must ask probing questions to gather more information. The CPA should provide information about the specific risks for each practice.

- Complete an assessment of diet, eating patterns, and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver.
 - Tailor nutrition education to participant’s identified needs and concerns.
 - Staff will want to determine why the caregiver is practicing certain feeding behaviors.
 - Staff may also need to inquire about the eating environment, food resources, and lifestyle as necessary.
 - Staff can provide information specific to the child’s needs and provide a tailored food package if appropriate.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier eating habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the caregiver understands and agrees with the plan.
- Provide the caregiver with related educational materials to help reinforce the message if appropriate and desired.
- Children assessed with any of the Inappropriate Nutrition Practices risk factors are considered Non-high Risk and do not require a referral to the Nutritionist. However, the CPA may refer to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Failure to Meet Dietary Guidelines (2 years and older only)
(Nutrition Risk Factor 401)

Children two years of age and older who meet the eligibility requirements of income, categorical, and residency status may be presumed to be at nutrition risk based on *failure to meet Dietary Guidelines for Americans [Dietary Guidelines]*. For this criterion, *failure to meet Dietary Guidelines* is defined as consuming fewer than the recommended number of servings from one or more of the basic food groups (grains, fruits, vegetables, milk products, and meat or beans) based on an individual's estimated energy needs.

Background information and education suggestions

Diets low in calories or that omit entire food groups often lack the nutrients needed for a child to grow and are at risk for nutrient deficiencies. Over time, chronic nutrient deficiencies can lead to serious deficiency diseases such as rickets (vitamin D deficiency) and anemia (iron deficiency). Less optimal nutrient intakes can impact an individual's long-term health outcomes. The WIC food package for children provides supplemental nutrients to improve diet quality.

- Complete an assessment of diet, eating patterns, and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver. Tailor the education based on what the parent or caregiver shares with you regarding why the child consumes what they do. For example:
 - Does the parent or caregiver make food choices based on picky eating habits of the child?
 - Does the parent or caregiver offer and consume a variety of foods?
 - Focus on healthy short-term benefits of eating a balanced diet, emphasize eating foods rather than nutrients, build on positive eating behaviors, discuss how to make healthy food choices in a variety of settings, introduce concepts of a balanced diet, and help parent or caregiver to understand that children do not always eat the same amount every day.
 - Reassure parent or caregiver that children usually eat enough foods to meet their nutrient needs; a 24-hour recall is a one-day snapshot only.
- When educating parents or caregivers of children with inadequate diets ask questions to determine if the family has access to adequate food supply.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier eating habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the caregiver understands and agrees with the plan.
- Provide the caregiver with related educational materials to help reinforce the message if appropriate and desired.
- Children assessed this risk factor are considered Non-high Risk and do not require a referral to the Nutritionist. However, the CPA may refer to the Nutritionist for

- further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Dietary Risk Associated with Complementary Feeding Practices (12 months through 23 months only) (Nutrition Risk Factor 428)

A child who has begun to or is expected to begin to 1) consume complementary foods and beverages, 2) eat independently, 3) be weaned from breast milk or infant formula, or 4) transition from a diet based on infant/toddler foods to one based on the *Dietary Guidelines for Americans*, is at risk of inappropriate complementary feeding. (Note: This risk factor also applies to infants ages 4 months to 12 months.)

Background information and education suggestions

Complementary feeding is the gradual addition of foods and beverages to the diet of the infant and young child. The process of adding complementary foods should reflect the physical, intellectual, and behavioral stages as well as the nutrient needs of the infant or child. WIC staff frequently encounter inappropriate complementary feeding practices among our WIC participants. Caregivers often do not recognize signs of developmental readiness and, therefore, offer foods and beverages that may be inappropriate in type, amount, consistency, or texture.

- Complete an assessment of diet, eating patterns, and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver.
 - Tailor nutrition education to participant’s identified needs and concerns.
 - Staff will want to determine why the caregiver is practicing certain feeding behaviors.
 - Staff may also need to inquire about the eating environment, food resources, and lifestyle as necessary.
 - Staff can provide information specific to the child’s needs and provide a tailored food package if appropriate.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier eating habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the caregiver understands and agrees with the plan.
- Provide the caregiver with related educational materials to help reinforce the message if appropriate and desired.
- Children assessed with any of the Inappropriate Nutrition Practices risk factors are considered Non-high Risk and do not require a referral to the Nutritionist. However, the CPA may refer to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Environmental and Family Nutrition Assessment Risk Factors

There are conditions that predispose infants to inadequate nutrition patterns by virtue of their home environment and family factors. These nutrition risk factors include:

1. Homelessness
2. Migrancy
3. Recipient of Abuse
4. Woman or infant/child of primary caregiver with limited ability to make feeding decisions and/or prepare food.
5. Exposure to environmental tobacco smoke.

Homelessness (Risk Factor 801)

A woman, infant or child who lacks a fixed and regular nighttime residence; or whose primary nighttime residence is:

- A supervised publicly or privately operated shelter (including a welfare hotel, a congregate shelter, or a shelter for victims of domestic violence) designed to provide temporary living accommodations
- an institution that provides a temporary residence for individuals intended to be institutionalized;
- a temporary accommodation of not more than 365 days in the residence of another individual; or
- a public or private place not designed for, or ordinarily used as, a regular sleeping accommodation for human beings.

Background information and education suggestions

Homeless individuals comprise a very vulnerable population with many special needs. WIC Program regulations specify homelessness as a predisposing nutrition risk condition. Today's homeless population contains a sizeable number of women and children – over 1/3 of the total population in the U.S. Studies show 43% of today's homeless are families, and an increasing number of the "new homeless" include economically-displaced individuals who have lost their jobs, exhausted their resources, and recently entered into the ranks of the homeless and consider their condition to be temporary.

Providing effective and appropriate nutrition education to individuals who have a transient lifestyle requires that staff have an understanding of the participant's transient lifestyle. It is important to identify the caregiver's ability to provide regular healthy meals to the child. Because a participant may only be enrolled for a short period of time, ongoing, long-term education goals may not be appropriate. Priority topics to be covered include:

- how to use the WIC food instruments
- allowable WIC foods
- how to use the WIC foods
- referral to other services

Work with the caregiver to select a food package that will fit her ability to store and prepare food.

Children assessed with this risk factor are considered Non-high Risk and do not require a referral to the Nutritionist. However, the CPA may refer to the Nutritionist for further assessment and nutrition counseling.

See Counseling Guidance Tool for Children for additional information.

Migrancy (Risk Factor 802)

Categorically eligible women, infants and children who are members of a family which contains at least one individual whose principal employment is in agriculture on a seasonal basis, who has been so employed within the last 24 months, and who establishes, for the purposes of such employment, a temporary abode .

Background information and education suggestions

Data on the health and/or nutritional status of migrants indicate significantly higher rates or incidence of infant mortality, malnutrition, and parasitic disease (among migrant children) than among the general population. Therefore, migrancy has long been stipulated as a condition that predisposes persons to inadequate nutritional patterns or nutritionally related medical conditions.

Many migrants have participated in WIC Programs in other states where food delivery, allowable foods, and the design of the food instrument are very different. Therefore, priority topics for education should include:

- how to use the WIC food instruments
- allowable WIC foods
- how to use the WIC foods
- referral to other services

Providing effective and appropriate nutrition education to individuals who have a transient lifestyle requires that staff have an understanding of the participant's transient lifestyle. It is important to identify the caregiver's ability to provide regular healthy meals to the child. Because a participant may only be enrolled for a short period of time, ongoing, long-term education goals may not be appropriate.

Work with the parent or caregiver to select a food package that will fit their ability to store and prepare food.

Children assessed with this risk factor are considered Non-high Risk and do not require a referral to the Nutritionist. However, the CPA may refer to the Nutritionist for further assessment and nutrition counseling.

See Counseling Guidance Tool for Children for additional information.

Recipient of Abuse (Nutrition Risk Factor 901)

Battering or child abuse/neglect within past 6 months as self-reported, or as documented by a social worker, health care provider or on other appropriate documents, or as reported through consultation with a social worker, health care provider, or other appropriate personnel. Child abuse/neglect includes any recent act or failure to act resulting in imminent risk of serious harm, death, serious physical or emotional harm, sexual abuse or exploitation of an infant or child by a parent or caretaker.

Background information and education suggestions

Arkansas Department of Health policy requires any person who has reasonable cause to suspect a child is being maltreated to report such suspicions. Suspicion of maltreatment is sufficient cause to make a report. Cases of suspected maltreatment must be reported to the Child Abuse Hotline at 1-800-482-5964 for investigation.

Serious neglect and physical emotional or sexual abuse have short- and long-term physical, emotional and functional consequences. Nutrition neglect is the most common cause of poor growth in infancy and may account for as much as half of all cases of nonorganic failure to thrive. The provision of the nutritionally dense foods and education about appropriate feeding practices by WIC is especially important for those infants with nonorganic failure to thrive.

- Follow agency policy regarding suspected child maltreatment.
- Establish rapport with the parent or caregiver to find out how they feel about their child's growth and what their health care provider has mentioned.
- Complete an assessment of diet, eating patterns, and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver.
 - Tailor nutrition education to participant's identified needs and concerns.
 - Staff will want to determine why the caregiver is practicing certain feeding behaviors.
 - Staff may also need to inquire about the eating environment, food resources, and lifestyle as necessary.
 - Staff can provide information specific to the child's needs and provide a tailored food package if appropriate.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier eating habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the caregiver understands and agrees with the plan.
- Provide the caregiver with related educational materials to help reinforce the message if appropriate and desired.
- Make necessary referrals to for medical and/or social services.
- Children assessed with this risk factor are considered Non-high Risk and do not require a referral to the Nutritionist. However, the CPA may refer to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Woman/Infant/Child of Primary Caregiver with Limited Ability to Make Feeding Decisions and/or Prepare Food (Nutrition Risk Factor 902)

A woman (pregnant, breastfeeding, or non-breastfeeding), or infant/child whose primary caregiver is assessed to have a limited ability to make appropriate feeding decisions and/or prepare food.

Examples may include individuals who are:

- ≤ 17 years of age
- Mentally disabled/delayed and/or have mental illness such as clinical depression (diagnosed by a physician or licensed psychologist)
- Physically disabled to a degree which restricts or limits food preparation abilities
- Currently using or having a history of abusing alcohol or other drugs

Background information and education suggestions

The mother or caregiver ≤ 17 years of age generally has limited exposure and application of skills necessary to care for and feed a total dependent. Cognitive limitation in a parent or primary caregiver has been recognized as a risk factor for failure to thrive, as well as for abuse and neglect. The mentally handicapped caregiver may not exhibit the necessary parenting skills to promote beneficial feeding interactions with the infant. Maternal mental illnesses such as severe depression and maternal chemical dependency are also strongly associated with abuse and neglect. In 22 states, 90% of caregivers reported for child abuse are active substance abusers. Certain physical handicaps such as blindness, para- or quadriplegia, or physical anomalies restrict/limit the caregiver's ability to prepare and offer a variety of foods. Education, referrals and service coordination with WIC will aid the mother/caregiver in developing skills, knowledge and/or assistance to properly care for a total dependent.

- Establish rapport with the parent or caregiver to find out how they feel about their child's growth and what their health care provider has mentioned.
- Complete an assessment of diet, eating patterns, and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver. Tailor nutrition education to participant's identified needs and concerns.
 - Staff will want to determine why the caregiver is practicing certain feeding behaviors.
 - Staff may also need to inquire about the eating environment, food resources, and lifestyle as necessary.
 - Staff can provide information specific to the child's needs and provide a tailored food package if appropriate.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier eating habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the caregiver understands and agrees with the plan.
- Provide the caregiver with related educational materials to help reinforce the message if appropriate and desired.

- Make necessary referrals to for medical and/or social services that can improve parenting skills.
- Children assessed with this risk factor are considered Non-high Risk and do not require a referral to the Nutritionist. However, the CPA may refer to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Exposure to Environmental Tobacco Smoke (Nutrition Risk Factor 904)

Exposure to smoke from tobacco products inside the home.

Background information and education suggestions

Studies suggest that the health effects of ETS exposure at a young age could last into adulthood. These include cancer, specifically lung cancer, and cardiovascular diseases. There is strong evidence that ETS exposure to the fetus and/or infant results in permanent lung damage. Also, lower Vitamin C levels have been observed in nonsmokers who are regularly exposed to tobacco smoke.

The WIC food package for children supplements their intake of vitamin C through vitamin C fortified juice and fresh or frozen fruits and vegetables. In addition, many WIC State Agencies participate in the WIC Farmers' Market Nutrition Program, which provides coupons for participants to purchase fresh fruits and vegetables. WIC Program benefits also include counseling to increase fruit and vegetable consumption, and to promote a healthy lifestyle, such as protecting participants and their children from ETS exposure.

This is what we know about secondhand (ETS) smoke:

- There is no safe amount of secondhand smoke. Breathing even a little secondhand smoke can be dangerous.
- Breathing secondhand smoke is a known cause of sudden infant death (SIDS).
- Secondhand smoke causes heart disease and lung cancer
- Separate "no smoking" sections DO NOT protect you from secondhand smoke. Neither does filtering the air or opening a window.
- Establish rapport with the parent or caregiver to find out how they feel about their child's growth and what their health care provider has mentioned.
- Complete an assessment of diet, eating patterns, and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver. Ask probing questions to determine who in the household smokes and where they smoke. ("Does anyone living in your household smoke inside the home?")
- Tailor nutrition education to participant's identified needs and concerns.
 - Staff will want to determine why the caregiver is practicing certain feeding behaviors.
 - Staff may also need to inquire about the eating environment, food resources, and lifestyle as necessary.

- Staff can provide information specific to the child's needs and provide a tailored food package if appropriate.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier eating habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the caregiver understands and agrees with the plan.
- Provide the caregiver with related educational materials to help reinforce the message if appropriate and desired.
- Make necessary referrals to for medical and/or social services and/or counseling and tobacco cessation programs as appropriate.
- Children assessed with this risk factor are considered Non-high Risk and do not require a referral to the Nutritionist. However, the CPA may refer to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.

Other Health Issues

Dental Problems (Nutrition Risk Factor 381)

Diagnosis of dental problems by a physician or a health care provider working under the orders of a physician or adequate documentation by the competent professional authority, include, but not limited to:

- Presence of nursing or baby bottle caries, smooth surface decay of the maxillary anterior and the primary molars (infants and children);
- Tooth decay, periodontal disease, tooth loss and or ineffectively replaced teeth which impair the ability to ingest food in adequate quantity or quality (children and all categories of women)

Background information and education suggestions

Early childhood caries results from inappropriate feeding practices. Nutrition counseling can prevent primary tooth loss, damage to the permanent teeth, and potential speech problems. Missing teeth can affect chewing ability which can lead to eating only certain foods which in turn affects nutritional intake.

- Complete an assessment of diet, eating patterns, and feeding relationship.
- Utilize the 3-step client-centered process in counseling the parent or caregiver.
 - Tailor nutrition education to participant's identified needs and concerns.
 - Staff will want to determine why the caregiver is practicing certain feeding behaviors.
 - Staff may also need to inquire about the eating environment, food resources, and lifestyle as necessary.
 - Staff can provide information specific to the child's needs and provide a tailored food package if appropriate.
- Listen to the parent or caregiver to learn what they would like to work on.
- Negotiate a plan that works toward healthier eating habits.
- Find out what might or might not be helpful with carrying out the plan.
- Work together with the parent or caregiver to tailor the plan.
- Once the plan has been developed to a comfort level for the parent or caregiver, confirm that the caregiver understands and agrees with the plan.
- Provide the caregiver with related educational materials to help reinforce the message if appropriate and desired.
- Make necessary referrals to for medical and/or social services.
- Children assessed with this risk factor are considered Non-high Risk and do not require a referral to the Nutritionist. However, the CPA may refer to the Nutritionist for further assessment and nutrition counseling.
- See *Counseling Guidance Tool for Children* for additional information.



Self-Check #15

After completing **Self-Check #15** check your answers at the end of the module and mark the ones you did not get correct. Review/discuss these with your Regional Nutrition Coordinator/designated Nutritionist.

1. T F The greatest risk to children with anemia is a delay in mental and motor development.
2. T F Living in a house built after 1980 can put a child at risk for lead poisoning.
3. Indicators that physicians may use to diagnose Failure to Thrive include:
 - a. Weight consistently below the 3rd percentile
 - b. Weight less than 80% of ideal weight for height/age
 - c. Progressive fall-off in weight to below the 3rd percentile
 - d. All of the above
 - e. None of the above
4. T F The division of responsibility in feeding children means the parents are responsible of providing nutritious foods and making sure the child eats it.
5. Examples of inappropriate nutrition practices for children include:
 - a. routinely feeding nonfat or reduced fat milk to a 1 year old
 - b. routinely feeding a child sweetened tea
 - c. feeding a child unpasteurized fruit juice
 - d. all of the above
 - e. none of the above
6. The nutrition risk factor, “Failure to Meet Dietary Guidelines” applies to:
 - a. infants age 4 months through 11 months
 - b. children age 12 months through 23 months
 - c. children aged 24 months and older
 - d. all women participant types
 - e. c and d
7. The nutrition risk factor, “Dietary Risk Associated with Complementary Feeding Practices” applies to:
 - a. infants age birth through 11 months
 - b. children age 12 months through 23 months
 - c. children aged 24 months and older
 - d. all of the above
 - e. none of the above
8. Indicate with **HR** for High Risk and **NHR** for Non-high Risk the following nutrition risk factors:
 Genetic Congenital Disorders
 Homelessness
 Recent Major Surgery, Trauma, Burns

- _____ Drug Nutrient Interaction
- _____ Migrancy
- _____ Recipient of Abuse
- _____ Central Nervous System Disorder
- _____ Inborn Errors of Metabolism
- _____ Woman or Infant/Child or Primary Caregiver with Limited Ability to Make Feeding Decisions and/or Prepare Foods
- _____ Lactose Intolerance
- _____ Exposure to Environmental Tobacco Smoke
- _____ Dental Problems
- _____ Lactose Intolerance

Part 4: Case Studies

The following are four case studies which present various situations involving eating behavior challenges with preschool children. Read the case studies and the education suggestions.

Case Study #1

Mary Ambrose is an active, energetic 2½-year-old child enrolled in your WIC clinic. Her height, weight, and hemoglobin are normal. Her mother complains that Mary is a very picky eater and will hardly eat anything. In particular, Mary will not eat vegetables. Mary's mother complains that the only way she can get Mary to eat her vegetables is to tell her she can have her favorite dessert if she eats all the vegetables on her plate.

The positive education that could be given to Mary's mother includes:

- √ Reassure Mary's mother that Mary's growth is *normal* and that it is common for young children of her age to be picky about their food. After a child reaches one year of age, changes in their food intake occur; i.e., at this time the child's rate of growth slows down and their appetite decreases or is erratic. Thus, Mary may not seem to be eating much because she is not growing as rapidly now and does not need as much food for her weight as when she was growing more rapidly. Also, you may want to remind Mary's mother that Mary's serving size is different from an adult's.
- √ Encourage Mary's mother to *continue* to offer vegetables, to prepare them in a variety of ways, and to set an example for Mary by eating and enjoying vegetables herself. Reassure her that children often need to be exposed to foods a number of times before they decide to eat them.
- √ Try serving raw vegetables with low fat dips, or offer a vegetable main dish, such as broccoli cheese casserole.
- √ Mary's mother could try "disguising" vegetables in dishes like omelets or pizza or tomato-based dishes, or in breads and muffins (like pumpkin bread, zucchini bread, or carrot muffins).

Discuss with Mary's mother:

- √ Bribing Mary with dessert to get her to eat her vegetables may be encouraging Mary to overeat. It also may be reinforcing the idea to Mary that vegetables are bad and sweets are good.

- √ Mary should have “between meal” snack times that are established and consistent. It may be that Mary is allowed to snack throughout the day. Then, when it is mealtime, Mary is not hungry and only eats a little.

This is NOT a good response:

- ∅ Tell Mary’s mother that because Mary is a young child she is growing very fast and she should be eating a lot every day.

NOTE: If height and/or weight should begin to drop out of normal range, or she has other symptoms of illness, Mary may need to be checked by her health care provider to see why her appetite is so poor. Refer to the Nutritionist for further counseling if needed.

Case Study #2

The Pollard family sits down to dinner one night. The Pollard family includes Mr. and Mrs. Pollard and their two children, Sandra (28 months) and Amy (7 years). The dinner meal that night consists of noodles, hamburger patties and carrots. The children are each given a glass of milk. Mrs. Pollard knows from past experience that Sandra doesn’t like cooked carrots, but that she does like noodles and milk and will generally eat hamburger patties. Toward the end of the meal, Sandra hasn’t eaten much. She has eaten some noodles and has drunk half her milk, but she hasn’t touched her meat or carrots. Sandra starts to fidget and play with her food. Mrs. Pollard lets her leave the table to go play while the rest of the family remains at the table. If Mrs. Pollard described this situation to you in WIC clinic the next day, what would be an appropriate response you could give her?

The following are appropriate responses you could give Mrs. Pollard:

- √ Tell Mrs. Pollard that she did well by including at least two things in the meal she knew Sandra would eat, and that she didn’t limit the menu to only those things Sandra likes.
- √ Reassure Mrs. Pollard that Sandra probably wasn’t very hungry.
- √ Tell Mrs. Pollard that she did well by not offering to fix Sandra something else for dinner when she refused the hamburger and carrots.
- √ Advise Mrs. Pollard that Sandra could have stayed at the table with the rest of the family while they finished their meal even though Sandra was not eating. Mealtimes should be pleasant and it is important to help Sandra learn to participate in family meals.

This is NOT a good response:

- Ø Tell Mrs. Pollard that she should have made Sandra sit at the table until she had eaten her hamburger and carrots, because otherwise her intake at the meal was very inadequate. Tell Mrs. Pollard to promise Sandra dessert if she eats her hamburger and carrots next time.

Case Study #3

A father complains to you that all his three-year-old son, Jason, will eat is sweets. Below are positive education tips to share with Jason's father:

- √ Try to help the father realize that parents are in charge of what foods are available in the home and that maybe he is buying too many sweets.
- √ Help the father determine whether he is using sweets as a reward with his son.
- √ Make "sweets" something nutritious like peanut butter, cookies, custard, or pudding.
- √ Find out what other nutritious foods Jason likes and encourage the father to make them available at home.

This is NOT a good response:

- Ø Tell Jason's father that he should never keep sweets in the house.

Case Study #4

Mr. and Mrs. Eastman come into your WIC clinic for their nutrition education appointment. They complain that they have been trying to follow your advice about serving well-balanced meals, but that their 30-month-old, Jennifer, is so active that she won't sit down at the table and ends up missing a lot of meals.

The education points you could discuss with the Eastmans are:

- √ It's reasonable for parents to insist that all family members come to the table at mealtime, at least for a while, whether they want to eat or not.
- √ A brief rest period before meals might help Jennifer calm down, (e.g., reading or looking at a book).

- √ Help the parents determine whether there are distractions (such as TV or loud music) that may be making it hard for Jennifer to settle down.
- √ Help the parents determine if Jennifer is getting snacks that are being served too close to mealtime.

These are NOT good responses:

- ∅ Jennifer must be hyperactive since she won't sit at the table and should be seen by their family doctor.
- ∅ Jennifer's hyperactivity must be caused by too many additives in her food and she should be put on a strict diet.

* * * * *

Congratulations!

You have just finished Child Nutrition Module – Level II. You have certainly learned a lot of facts in this module! We hope you will use this information in a positive way to help your WIC families.

You are now ready to complete the Child Nutrition Module Quiz.

* * * * *

Child Nutrition Module – Level II



Self-Check Answers

Self-Check #1

1. In the list below, choose the following phrases which are desirable qualities of eating utensils for young children:

- Small, blunt-tipped spoons and forks
- Sturdy, durable dishes
- Plates and bowls with a “lip”
- Small, unbreakable cups and glasses

1. **T** Food habits acquired at an early age may influence later nutritional status.
2. **F** Food habits are inherited, not learned.
4. **T** Children tend to imitate the eating habits of their parents.
5. **T** Don't force children to eat; most healthy children will eat when they are hungry.
6. **T** Children should be offered a variety of foods.

Choose the phrase that correctly completes the following statements. There may be more than one correct choice.

7. When introducing new food(s): (Answers in **BOLD**)
 - a. Serve the new food several times even if it was rejected previously.**
 - b. Give the child a large serving so he or she can taste it several times during the meal.
 - c. Serve the food with another, well-liked food.**
 - d. Instruct the child to eat all of it.
 - e. Be a positive role model—eat new foods yourself.**
8. If a child dislikes a certain food, some possible alternatives are: (Answers in **BOLD**)
 - a. Prepare it a different way.**
 - b. Serve only a small amount.**
 - c. Combine the disliked food with some of his/her favorite foods.**

9. When a child occasionally refuses to eat (Answer in **BOLD**):
 - a. Tell the child there will be no dessert unless his/her plate is clean.
 - b. Do not struggle with the child—let the child decide whether to eat and how much.**
 - c. Punish the child.

10. If a child goes on a “food jag” (requesting one food often) (Answer in **BOLD**):
 - a. Allow the child to have smaller servings of the favored food.**
 - b. Offer other foods to ensure the child eats a variety of foods.**
 - c. Refuse to give it to the child.

Self-Check #2

1. Name at least two nutrients supplied by the Milk Group:
ANSWER: Any two of the following: calcium, protein, riboflavin, vitamin B₁₂, vitamin D, zinc

2. What is the total amount that a one-to five-year-old needs from the Milk Group each day? **2 cups**

3. Two milk products that can be substituted for fluid milk are _____ and _____.
ANSWER: Any two of the following: yogurt, cheese, cottage cheese, custard, pudding, nonfat dry milk (used in casseroles, soups, etc.)

4. Portion sizes are **smaller** for young children than for adults.

Self-Check #3

1. **Two to five ounces** of Meat and Beans Group foods are needed each day for children 1 to 5 years old.

2. **One-fourth** cup(s) of beans is equivalent to one ounce Meat and Beans Group serving.

3. Name two nutrients that Meat and Beans Group foods provide:
ANSWER: Any two of the following: protein, zinc, iron, niacin (there are other acceptable answers not covered in the module)

4. Two Meat and Beans Group foods that are often popular with children are: _____ and _____.
ANSWER: Any two of the following: peanut butter, tuna, meatloaf, hamburgers, chicken, bean burrito

Self-Check #4

1. Whole grain or enriched grain products in the diet are good sources of which of the following: (Answer in **BOLD**)

vitamin C **B vitamins** calcium
iron **energy (calories)**

2. **Fiber**, found in whole grain products helps regulate digestion and elimination.
3. Children one to five years old need **three to five ounces** of Grains Group foods each day.
4. At least **half** of all grains consumed should be whole grains.

Self-Check #5

1. Vegetables and fruits are especially good sources of which two vitamins?

Answer: vitamin A and vitamin C

2. Certain raw vegetables and fruits (along with other foods such as hot dogs, popcorn, nuts and hard candies) are among a list of foods that are not recommended for young children as they might cause **choking**.

3. List two ways that certain foods can be changed or modified to prevent food-related choking in young children.

ANSWER: Any two of the following: (solid foods that require a lot of chewing can be: cooked, pureed, mashed, finely chopped, diced; cut hot dogs in two or more lengthwise pieces; moisten creamy peanut butter with juice or applesauce; cut round-shaped foods (such as carrots and grapes) into small pieces.

4. One- to five-year-old children need a total of at least **one to two** cup(s) of fruits each day and **one to two and a half** cup(s) of vegetables each day.

5. **False** Parents should force their children to eat their vegetables.

6. Name at least two fruits and three vegetables that are good sources of vitamin A:

Fruits: **ANSWER: Any two of the following fruits: apricots, cantaloupe, mango, papaya**

Vegetables: **ANSWER: Any three of the following vegetables: broccoli, greens, spinach, pumpkin, winter squash, carrots, sweet potatoes**

7. Name at least three fruits and two vegetables that are good sources of vitamin C:
Fruits: **ANSWER: Any three of the following fruits: grapefruit/juice, orange/juice, papaya, strawberries, vitamin C-enriched juices, cantaloupe**
Vegetables: **ANSWER: Any two of the following vegetables: broccoli, Brussels sprouts, peppers**

Self-Check #6- Answers in BOLD

1. In the list below, choose the foods and methods of food preparation that are appealing to young children (**ANSWERS IN BOLD**):

mixed dishes (several foods mixed together)
 bite-sized pieces of food
 bright-colored foods
 dry meat
 very hot food
 crisp vegetables
 very spicy food

2. **F** Juice can be a nutritious drink and parents and caregivers should offer at least 12 ounces to their child daily.
3. **F** Sports drinks are an appropriate beverage for young children.

Self-Check #7

1. **True** Snacks can be nutritious supplements to the preschooler's diet.
2. Name two nutritious snacks from each of the following groups of food:

Milk Group

ANSWER: Any foods listed in the Milk Group chart on page 21

Meat and Beans Group

ANSWER: Any foods listed in the Meat Group chart on page 24

Grains Group

ANSWER: Any foods listed in the Grains Group chart on page 26

Fruit Group (good sources of Vitamin A & C)

ANSWER: Any foods listed in the Fruit Group charts on page 30

Vegetable Group (good sources of vitamins A & C)

ANSWER: Any foods listed in the Vegetable Group charts on pages 32

Self-Check #8

1. **T** Offering desserts after every meal may establish a difficult habit to break.
2. **F** Children should be rewarded with dessert after they clean their plates.
3. **T** A child's weight and height are the best indicators of adequate caloric intake.
4. List two nutritious desserts:
ANSWER: Any two of the following: fruit, frozen fruit juice on a stick, custard, pudding, ice cream, ice milk, frozen yogurt, fruit-and-nut breads, muffins, homemade cookies, e.g., oatmeal cookies
5. List three plant sources of protein:
ANSWER: Any three of the following: grains, legumes, soy products, meat alternatives, nuts, and seeds

Self-Check #9

1. Overweight in children may be defined as a BMI-for-age greater than or equal to the **95th** percentile.
2. **T** Inappropriate eating patterns and insufficient activity are the most common reasons why people become and remain overweight.
3. List four habits that are associated with overweight in children:
ANSWER: Any four of the following: use of bottle after 14 months of age; drinking excess calories from beverages; consuming a high fat diet or excess desserts; poor meal structure or lack of meal structure; inconsistent availability of food; use of food as a reward or punishment.

Self-Check #10

1. Two common dietary causes of iron-deficiency anemia are:
 - a. **Excessive milk intake and consequently a low intake of solid foods.**
 - b. **Low intake of iron-rich foods (and therefore a high intake of iron-poor foods).**
1. Three suggestions for parents or caregivers in helping to prevent iron-deficiency anemia in their young child are:
 - a. **Limit daily milk intake to a maximum of 24 ounces.**
 - b. **Limit iron-poor foods (soft drinks, candy, pastries, snack foods).**
 - c. **Increase intake of iron-rich foods (whole grain and iron-enriched cereal products, dark green leafy vegetables, meats, dried beans and peas,**

dried fruit); encourage consumption of a good vitamin C source when eating high-iron plant foods to increase iron absorption.

3. Which of the following contains the most iron? Answer in **BOLD**
- one egg
 - one slice of whole wheat bread
 - ½ cup of greens
 - one ounce of highly fortified cereal, e.g., a WIC cereal**

Self-Check #11

Read through the following statements and choose the statements that are true.

- Teeth perform important functions of providing shape to the face and mouth, assisting in pronunciation of words, and enabling chewing of food.**
- The primary teeth begin to develop when an infant is between four and eight months old.
- The only purpose which primary teeth serve is to allow the child to eat solid food.
- Adults generally have 32 teeth.**

ANSWER EXPLANTION: The primary teeth erupt when an infant is usually around four to eight months old, but they begin to develop before birth. Besides enabling a child to chew solid foods, the primary teeth also hold the shape of the mouth so that the permanent teeth have space to come in correctly and help the child's speech.

Self-Check #12

- Which are proper guidelines for cleaning the teeth of a preschooler?
 - Brush the teeth at least twice a day**
 - After age one, children can use fluoridated toothpaste
 - Instruct children how to brush their own teeth at one year and allow them to do so.
 - Floss once a day.**
- Which sugar is the most cariogenic?
 - Table sugar

- b. Natural sugar in fruit
- c. Honey
- d. Molasses
- e. Corn syrup
- f. **All of the above**

ANSWER EXPLANATION: All sugars are cariogenic.

3. Which is the most important factor in the relationship of sugar to dental disease?
- a. The total amount of sugar eaten per day.
 - b. The number of times sugar-containing food is eaten per day.
 - c. The form in which sugar is eaten.
 - d. **All of the above**

ANSWER EXPLANATION: The amount, frequency, and form of the sugar eaten are factors in the relationship of sugar to dental disease.

4. List at least three healthy habits for preventing dental problems.

ANSWER: Any three of the following;

√ **Wean children from the bottle completely by 14 months of age. Toddlers who are put to bed with a bottle of milk, juice, or sweetened drink can develop tooth decay. The sugar in these beverages pools around the teeth and the bacteria act upon it.**

√ **Follow *MyPyramid for Preschoolers* for dietary guidance. Clean the mouth after each meal.**

√ **Read labels. The ingredients are listed on labels with the ingredient in the highest percentage first. The further down the list sugar appears, the better. Remember, too, that there are many different kinds of sugar. Corn syrup, honey, dextrose, fructose, sucrose, lactose, levulose, and molasses are all different names of various sugars. They will be separated on a label, but they all add up to SUGAR.**

√ **Avoid snacking on foods high in sugar, particularly between meals. Avoid snacks that contain sugar and stick to the teeth, like gum drops, and raisins.**

√ **Serve sweets directly after mealtime (if you are going to serve sweets) so that children can conveniently brush their teeth afterwards. In other words, try to limit the number of times each day that teeth are exposed to sugar.**

√ **Eat snacks that are not as likely to promote tooth decay. Select snack foods from the meat group or fruit and vegetable group. Vegetables, particularly stimulate saliva production which helps wash away some of the food particles from the teeth. In addition, the fiber in fruits and vegetables can assist in loosening food stuck to teeth.**

√ **Ideally, after each meal or snack, try to brush and floss. If this is not possible, rinse the mouth out with water to remove food particles.**

√ Visit the dentist by one year of age. If the family dentist is reluctant to see a young child, refer clients to a pediatric dentist. WIC families may locate a Medicaid- approved dental provider by calling the Division of Health's Connect Care at 1-800- 275-1131.

Self-Check #13

1. **True** or False Lead poisoning can affect nearly every system in the body.
2. True or **False** Only children under the age of 3 are at risk of lead poisoning.
3. The main sources of exposure for lead in U. S. children are **lead-based paint** and **lead contaminated dust**.
4. **True** or False Parents can decrease their child's risk of lead poisoning by not letting their child eat candies imported from Mexico.
5. Parents can reduce their child's risk of high lead levels by offering **regular meals** and **snacks** to their children.
6. Which two nutrients in a child's diet are important in helping to reduce the risk of lead poisoning?
 - a. Vitamin A and Vitamin C
 - b. Vitamin D and calcium
 - c. Calcium and protein
 - d. Iron and calcium**

Self-Check #14

1. Name the five main categories of child nutrition assessment risk factors:
 - a. **Anthropometric**
 - b. **Biochemical**
 - c. **Clinical**
 - d. **Dietary**
 - e. **Environmental and Family**
2. Nutrition risk factors are identified as **High Risk** and **Moderate** Risk.
3. **High** Risk infants must be referred to the Nutritionist for further assessment and nutrition counseling.
4. **Growth** is an increase in the physical size of the body whereas **development** is the process of maturing.

True or False

5. **T F** Children whose growth measures less than the 5th percentile are in need of

nutritional intervention.

6. **T F** Physical growth delay can be an indicator of the effects undernutrition can have on immune function, organ development, hormonal function and brain development.
7. **T F** A child whose biological father has a BMI of 29 is at risk of becoming overweight.
8. **T F** Short stature may result from health and nutritional deficiencies over a long period of time
9. **T F** Weight for age is not a sensitive indicator of acute nutritional inadequacy.
10. **T F** Low birth weight (LBW) is a strong predictor of growth in early childhood.
11. Prematurity is a nutrition risk factor for infants and children to what age?
 - a. 15 months only
 - b. 18 months only
 - c. less than 24 months**
 - d. none of the above
13. Small for gestational age is a nutrition risk factor for infants and children to what age?
 - a. 15 months only
 - b. 18 months only
 - c. less than 24 months**
 - d. none of the above

Self-Check #15

1. **T F** The greatest risk to children with anemia is a delay in mental and motor development.
2. **T F** Living in a house built after 1980 can put a child at risk for lead poisoning.
3. Indicators that physicians may use to diagnose Failure to Thrive include:
 - a. Weight consistently below the 3rd percentile
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- HR** Recent Major Surgery, Trauma, Burns
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- HR** Central Nervous System Disorder
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- HR** Lactose Intolerance
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