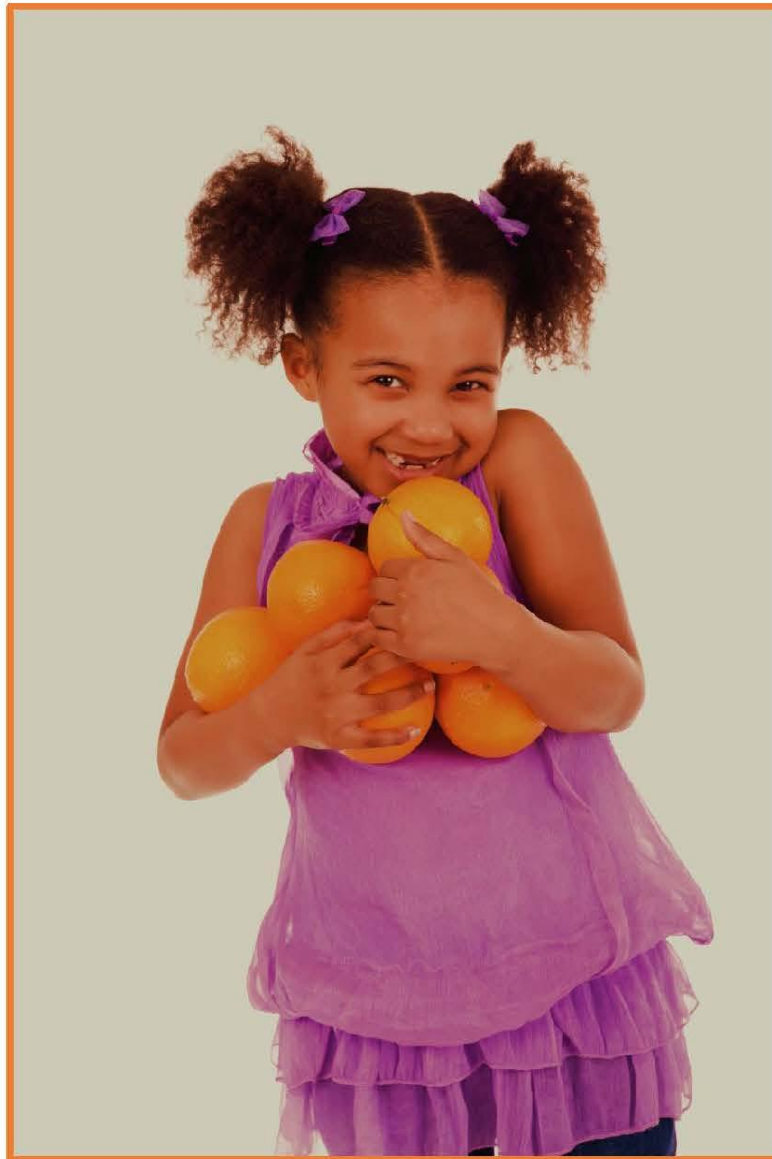




# Nutrition Education Staff Training

## *Child Nutrition Module*



**Michigan WIC Program @ 2019**

[www.Michigan.gov/WIC](http://www.Michigan.gov/WIC)

Adapted for use with permission by the Colorado WIC Program

Developed by the Texas Division of Public Health Nutrition and Education Bureau of Nutrition Services Texas Department of Health; Adapted by the Colorado WIC Program. Revised October 2019

# Table of Contents

<b>OBJECTIVES OF THE CHILD NUTRITION MODULE</b> .....	1
<b>SECTION I: EATING BEHAVIOR</b> .....	2
DEVELOPING GOOD FOOD HABITS .....	3
CREATING A POSITIVE EATING ENVIRONMENT .....	4
COMMON QUESTIONS & ANSWERS.....	4
FOOD ISSUES.....	5
<b>SECTION II: NUTRITIONAL RECOMMENDATIONS</b> .....	9
WHAT FOODS SHOULD A CHILD EAT DAILY? .....	9
A WORD ABOUT SERVING SIZES.....	9
MILK GROUP .....	12
MEAT GROUP .....	14
GRAIN GROUP.....	16
FRUIT GROUP AND VEGETABLE GROUP .....	19
VITAMIN AND MINERAL SUPPLEMENTATION .....	20
AN IMPORTANT MESSAGE ABOUT CHOKING.....	20
MEAL PLANNING FOR YOUNG CHILDREN .....	24
WHAT SHOULD CHILDREN DRINK? .....	24
FOODS CHILDREN LIKE .....	25
SNACKS.....	27
THE VEGETARIAN CHILD .....	31
DESSERTS .....	32
<b>SECTION III: INAPPROPRIATE NUTRITION PRACTICES FOR CHILDREN</b> .....	35
NUTRITION RISKS.....	35
<b>SECTION IV: GROWTH AND WEIGHT RELATED CONCERNS IN CHILDREN</b> .....	43
BIRTH WEIGHT:.....	43
SHORT STATURE AND AT RISK OF SHORT STATURE.....	43
UNDERWEIGHT AND AT RISK OF UNDERWEIGHT .....	44
INADEQUATE GROWTH .....	45
OVERWEIGHT AND OBESITY .....	45
RELATED NUTRITION RISKS: .....	47
WIC'S ROLE WITH OVERWEIGHT CHILDREN .....	48
LIFESTYLE HABITS ASSOCIATED WITH OVERWEIGHT .....	49
SLEEP GUIDELINES.....	51
PHYSICAL ACTIVITY.....	51
<b>SECTION V: IRON AND LEAD</b> .....	53
IRON DEFICIENCY .....	53
RELATED NUTRITION RISKS: .....	54
201.01 LOW HEMATOCRIT\LOW HEMOGLOBIN CUTOFF VALUE:.....	54
211.01+ ELEVATED BLOOD LEAD LEVELS .....	55
MEDICAL CONDITIONS .....	55
<b>SECTION VI: ORAL HEALTH IN CHILDREN</b> .....	57
ORAL DISEASE AND TOOTH DECAY .....	57
HOW TO CONTROL BACTERIA .....	58
PROPER CLEANING OF TEETH: .....	58
HEALTHY HABITS: .....	59
DEALING WITH THE "MESS" .....	60
RELATED NUTRITION RISKS: .....	60
<b>SECTION VII: SOCIAL INDICATORS OF NUTRITION RISK</b> .....	62
RELATED NUTRITION RISK.....	62
<b>SECTION VIII: CASE STUDIES</b> .....	67
<b>TRAINING ACTIVITY</b> .....	69

# Objectives of the Child Nutrition Module

After completing this module, the learner will be able to:

1. Identify why it is important for parents and caregivers to help children develop positive eating habits.
2. Recognize at least seven tips which can help parents foster the development of their child's healthy eating habits.
3. Explain what to do about eating behavior issues that are common during the preschool years including: introducing new foods, disliking foods, refusing to eat, playing with food, and "food jags."
4. State why serving sizes are smaller for young children than for adults and explain why it is important to offer small amounts of a variety of foods at each meal.
5. Recognize the following components of each of the food groups as it applies to children, ages 1 through 5 years:
  - Foods contained within each food group
  - Some favorite foods of young children within each food group
  - Nutrients provided by each food group
  - Number of servings needed each day for children 1 through 5 years old to meet the nutritional needs of this age group.
6. Identify foods not recommended for young children because of choking risk.
7. Explain the important role snacks play in the eating patterns of a young child.
8. Identify ways to prevent and/or treat common nutritional concerns for preschool children including overweight, iron-deficiency anemia, dental caries and inappropriate nutrition practices.

## Section I: Eating Behavior

### Goals of Good Nutrition

This module is about nutrition for children ages 1 to 5 years.

The eating patterns of young children are influenced by their growth rate, their physical maturity and development, their personality and the eating environment created by the family. During these early years, many lifelong food habits, food preferences, and food dislikes are established.

The following list represents the goals of adequate food and nutrition for the developing child.

- Reach 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

### Learn the Signs. Act Early. Developmental Milestones

The eating behavior of the growing child is greatly influenced by their development. 1 in 6 children has developmental delays or disabilities and children from WIC families are at greater risk.

You can make a difference by using the “Learn the Signs. Act Early.” materials from the Centers for Disease Control and Prevention (CDC). The toolkit contains resources for families to track their child’s developmental milestones and provides a quick and easy way for families to monitor their child’s development. These resources help WIC staff promote parent awareness and know when and where to refer a child with a possible developmental delay.

Parents and caregivers enjoy tracking their child’s development. The milestones checklists are a first step toward getting help when families are concerned about development. Parents and caregivers can recognize signs of possible developmental delay and ask for a developmental screening.

“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*

You can visit the CDC Developmental Milestones Resources for WIC Programs webpage to download a helpful toolkit, the milestone checklists, and learn more about ways to help families at <https://www.cdc.gov/ncbddd/actearly/wic-providers.html>.

## Developing Good Food Habits

Food habits are learned. Learning to develop positive eating habits and attitudes early on can shape food choices later in life and nutrition status throughout a lifetime.

After the first year of life, the growth rate slows, yet there is a steady increase in body size. Along with the decrease in growth rate comes a decrease in appetite and an increased need for vitamins and minerals.

The continued slowing of growth speed, the development of fine and oral motor skills, and the development of independence affect diet and feeding.

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

Families help teach children cultural food patterns, what foods are desirable, how these foods are to be eaten, and the manners while eating. Mealtime is a time for socialization with the family. Children observe the family members and mimic 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, children may need to be offered the food many times, possibly 8-12 times, before he or she takes the first bite. 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 and practicing healthy eating behaviors themselves.
- Eating meals together as a family.
- Understanding that children will like or dislike certain foods.
- Letting 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 meal preparation.

“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, grandparents, 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.”

Academy of Nutrition and Dietetics  
Pamphlet, excerpts  
“Feeding Kids Right Isn’t Always Easy.”  
Revised 1996

- Teaching their child where foods come from and how foods are grown (for example, plant a garden or visit a farm, orchard, or farmer's market).
- Not using food to reward, bribe, or punish their child.

The eating environment must be comfortable and relaxed for children to develop healthy eating habits. Mealtime can be uncomfortable if children are not seated properly and securely, the utensils are too large for their small hands, or the surroundings are unpleasant.

### Creating a Positive Eating Environment

The following conditions will provide a positive environment for the child to enjoy meals and form lifelong healthy eating habits:

- 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 handle that fits 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 which 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 set but flexible schedule.
- Let the child decide whether to eat and how much.
- Be patient and understanding if the child makes a mess while he/she learns to feed herself.
- Resist the temptation to prepare a different meal if the child chooses not to eat.
- 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 and snacks. Put stresses of the day aside.
- Be prepared when away from home with nutritious portable snacks.
- Do not insist that the child eat all the foods on her plate before dessert. Consider serving dessert with the meal.

### Common Questions & Answers

**Q:** *"How can you get a child to eat a healthy diet when the parents don't have good eating habits?"*

**A:** It can be difficult to address feeding issues when parents themselves have poor eating habits. It is difficult for parents to teach what they do not practice. The situation may be an opportunity to improve the dietary habits of the entire family. You can use the child's health as a motivator. Some parents may make small changes in their own eating patterns 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 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 for the sake of their baby's health.

If parents are unwilling to make any dietary changes then the situation is more difficult. Here are some tips for creating a positive attitude towards food.

- A positive attitude about food is important. Vegetables are not “yucky.” Instead they are “cool” and will help you grow big and strong.
- Parents and caregivers 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, “Sarah eats breakfast every day before school.”
- Forcing 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 an interest in foods. Think of how Popeye cartoons were created to get kids to eat spinach. Reading books with vegetables as characters or allowing a child to make snacks with healthy foods may help to build interest.
- Help a child develop “ownership” of certain foods. Asking the child to plan a nutritious snack for the family may help.

### Food Issues

Food issues during the preschool years are a common part of development. The following pages take common concerns parents bring up in WIC clinics and offer messages you can share with caregivers.

### Common Questions and Answers

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

**A:** You are not alone. Parents often are concerned about eating patterns in a 2-year-old. Children grow more slowly from ages 1-5 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.

**Q:** *How much should I feed my child?*

**A:** Children usually eat small portions. Perhaps you could try offering small portions from the food groups, and let your child ask for more if she is still hungry. It is the child's job to decide how much to eat from the foods that you offer. Your job is to provide a variety of foods from the food groups throughout the day in regular meals and snacks.

**Q:** *My child sometimes loses interest during meals and doesn't eat. What can I do?*

**A:** It is normal for children to lose interest in an activity, including eating, after a short time. They are also easily distracted. You might try to reduce distractions, such as screens, during meals and snacks. If the child is finished eating, you can remove the food and the child can

wait for the next meal or snack. Providing routine meals and snacks throughout the day are important to children.

**Q:** *What can I do about my child's picky eating?*

**A:** It is common for a child to demand certain foods and not want to eat what the rest of the family eats. Children often do not like new foods and tend to learn to like foods that are repeatedly offered. Your job is to offer meals and snacks at regular times, and it is the child's job to decide how much to eat. Don't feel rejected when the child decides not to eat what you have prepared. They can always eat something at snack time or the next meal. Mealtime is family time. Your child can be asked to sit at the table and keep the family company until the end of the meal.

Try not to be overly concerned about your child's eating at each meal. If your child is energetic and growing, he is probably eating enough. Offer your child food choices and let him decide. Continue to serve a new food even if your child has rejected it multiple times. He may be more inclined to try a new food if he participates in food shopping and preparation.

**Q:** *How should I handle food struggles with my child?*

**A:** You can end food struggles by doing your job of providing nutritious foods at regular times and letting your child decide how much to eat. You get to decide when and what foods to serve for meals and snacks, then let your child do her job of deciding how much.

**Q:** *My child wants to eat only peanut butter sandwiches. What should I do?*

**A:** Food jags in children (when children want to eat a food often) are common. You can try offering smaller servings of the favored food, along with other foods to ensure that your child is offered a variety of foods. Jags rarely last long enough to be harmful. If your child is energetic and growing, he is probably eating enough.

**Q:** *How can I get my child to try new foods?*

**A:** Children are experiencing many things as they mature, including new foods. Make mealtime a fun time. When introducing new foods, offer small portions – perhaps 1 or 2 tablespoons – and let your child ask for more. Try to introduce only one new food at a time, allowing plenty of time for the child to look at and examine the food. She probably won't try new foods if she is tired, irritable, or sick. Don't give up. Continue serving new foods in a variety of ways, knowing that it may take many times before she accepts it.

You could try serving 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. You can be a positive role model by eating new foods yourself. You could 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. Consider cutting foods



into various shapes using cookie cutters or create fun names for foods (for example, “little trees” for broccoli).

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

**A:** Remember that it is your child’s job to decide how much to eat, not yours. Do not make an issue of the child’s rejection. Remember it may take multiple exposures before he accepts the food. You may consider trying to combine the food with other favorite foods. Sometimes preparing a food in different ways (separately, raw, cooked, in a soup, etc.) appeals to him.

*SELF-CHECK: PRACTICE YOUR KNOWLEDGE*

*The answers are located at the end of the Self-Check.*

1. In the list below, put a check mark (✓) by 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

Read the following statements concerning the development of food habits in young children. Place a “T” (for True) or an “F” (for False) in the space to the left of each of the following statements:

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

Circle the letter of the phrase(s) that correctly complete(s) 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 the favored food.
  - b. Offer other foods to ensure the child eats a variety of foods.
  - c. Refuse to give it to the child.

*ANSWERS*

1. You should have checked all four phrases.
2. True
3. False
4. True
5. True
6. True
7. a, c, e
8. a, b, c
9. b
10. a, b

## Section II: Nutritional Recommendations

Children have specific nutritional needs in order to obtain optimal growth and development. Because no single food provides all the necessary nutrients and minerals for growth, it is important that children eat a variety of healthy foods daily.

### What Foods Should A Child Eat Daily?






The *Nutrition Guide for Children Age 1 to 5* is a nutrition guide with five food groups: Milk, Meat, Vegetable, Fruit, and Grain Group. The foods in each of these groups are good sources of vitamins and minerals. Each food group has a recommended amount per day to eat. The amounts given are suggested and younger children may eat smaller amounts, but more frequently; an older child needs larger servings, but less often. If parents want to know exactly how much their child needs from each food group, refer them to the interactive website [www.ChooseMyPlate.gov](http://www.ChooseMyPlate.gov). For children eating less than the amount listed on the Nutrition Guide, discuss ways parents can add in these foods into their eating patterns.

### A Word about Serving Sizes

Serving sizes are smaller for young children than for adults and they are usually about one-half the size of an adult portion. Children have small stomachs and will “fill up” faster with smaller amounts of food. In order 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. If given an adult-sized serving, such as an eight-ounce glass of milk, the child may “fill up,” losing his/her appetite for the other foods.

# Children's Nutrition Guide

for children 1 – 5 years old

Food Group	Amount per day	What counts as 1 cup or 1 ounce	EXAMPLES
 <p><b>VEGETABLE</b></p>	1 – 1½ cups	<p>What counts as 1 cup:                      1 cup raw, cooked, or canned                      1 cup vegetable juice                      2 cups raw leafy vegetables</p> <p>Typical serving size: ¼ cup</p>	<p><b>Vary your veggies</b></p> <p>Dark Green: Broccoli, brussel sprouts, leaf lettuce, spinach                      Orange: Carrots, sweet potatoes, pumpkin, squash (acorn or butternut)                      Starchy: Potatoes, yams, and corn                      Other: Eggplant, tomatoes, peppers, mushrooms, onions, cauliflower, cabbage, greens beans, zucchini</p> <p><b>Nutrition Tip:</b> Eat dark green and orange vegetables every day. Try fresh, frozen, or canned vegetables.</p>
 <p><b>FRUIT</b></p>	1 – 1½ cups	<p>What counts as 1 cup:                      1 cup raw or 1 small piece                      1 cup canned                      1 cup 100% juice                      ½ cup dried fruit</p> <p>Typical serving size: ¼ cup</p>	<p><b>Focus on fruits</b></p> <p>Oranges, grapefruit, citrus juices, melons, berries</p> <p>Apples, bananas, pears, plums, grapes, pineapple, peaches, apricots, applesauce, 100% juice, raisins, other dried fruit**</p> <p><b>Nutrition Tip:</b> Encourage whole fruit instead of juice and serve fresh fruit that is in season.</p>
 <p><b>MILK</b></p>	2 cups	<p>What counts as 1 cup:                      1 cup milk or yogurt                      1½ oz cheese                      1 cup pudding                      2 cups cottage cheese</p> <p>Typical serving size: ½ cup (4oz milk)</p>	<p><b>Get your calcium-rich foods</b></p> <p>Milk, yogurt, cheese, cottage cheese                      Milk-based soups, pudding, ice milk, frozen yogurt</p> <p><b>Nutrition Tip:</b> Serve whole milk to a 1-year old and switch to fat-free (skim) or low-fat (1%) milk after your child turns 2.</p>
 <p><b>GRAIN</b></p>	3 – 5 ounces	<p>What counts as 1 ounce:                      1 slice bread or 6" tortilla                      1 cup ready-to-eat cereal                      ½ cup cooked rice, pasta, or cereal                      5 to 7 crackers</p> <p>Typical serving size: ½ oz</p>	<p><b>Make half your grains whole</b></p> <p>100% whole grain bread, cereal, crackers, and pasta                      Rice, noodles, tortillas, oatmeal, bagels, English muffins, popcorn**</p> <p><b>Nutrition Tip:</b> Just because bread is brown doesn't mean it's whole grain. Look for the words "whole wheat" or "whole grain" before the first ingredient, or "100% whole" grain or wheat on the label.</p>
 <p><b>MEAT</b></p>	2 – 4 ounces	<p>What counts as 1 ounce:                      1 oz meat, poultry, or fish                      ¼ cup cooked beans or peas                      1 egg                      1 Tbsp peanut butter or ½ oz nuts</p> <p>Typical serving size: 1 – 2 oz</p>	<p><b>Go lean with protein</b></p> <p>Lean beef, pork, chicken, or turkey                      Fish including canned salmon and tuna (limit canned tuna to 6oz/week)                      Split peas, pinto beans, black beans, kidney beans, lentils, other beans                      Eggs, peanut butter, nuts, seeds**</p>

**Nutrition Tip:** Peanut butter sticks to the mouth and may be hard to swallow. Do not let your child eat peanut butter from a spoon. Instead, spread it thinly on bread, crackers, or toast.

The following is a further discussion of the different food groups as they apply to children ages 1 to 5 years of age.

**Milk Group**

At least two cups (16 ounces) of milk or the equivalent amount of milk products are necessary each day for the preschool child (2 ½ cups for children ages 4-8). These dairy products provide calcium, protein, riboflavin (a B vitamin), vitamin B<sub>12</sub>, vitamin D, zinc, and other nutrients.

<u>Milk and Milk Products</u>	
Some Food Choices	Typical Serving Size for Children
Whole Milk	½ cup
Fat- Free (skim)* or Low Fat (1%)* Milk	½ cup
Nonfat Powdered Milk*Canned Evaporated	3 tablespoons ¼ cup
Cheese - Natural	1 ounce
Cheese - Processed	1 ounce
Ice Cream or Frozen	¾ cup
Yogurt	½ cup
Buttermilk*	½ cup
Yogurt/Cottage Cheese	¾ cup
* It is recommended that children from 1 year to their 2 <sup>nd</sup> birthday old drink only whole milk to ensure adequate fat intake.	

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

- Yogurt
- Milk
- Cheese Sticks
- Cottage Cheese
- Custards and Puddings

Although ice cream provides some calcium, the amount is lower in comparison with other dairy products. Also, ice cream is high in both fat and sugar. An occasional serving of ice cream is okay. Cream cheese is considered a fat, is a poor source of protein and calcium, and is not considered a member of the milk, yogurt, and cheese group.

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

For children who won't drink milk, there are other suggestions to offer, such as:

- Serve other calcium-rich foods such as broccoli and turnip greens.
- Serve calcium-fortified foods (e.g., orange juice, tofu, or cereals).
- Serve dairy foods for snacks, such as cheese, yogurt, and frozen yogurt.

*SELF-CHECK: PRACTICE YOUR KNOWLEDGE*

Fill in the blanks to correctly complete the statements:

1. Name at least two nutrients supplied by the milk, yogurt, and cheese group:  
\_\_\_\_\_  
\_\_\_\_\_

2. A preschool child needs at least \_\_\_\_\_ cups of milk each day.

3. Two milk products, which may be substituted for fluid milk, are \_\_\_\_\_ and \_\_\_\_\_.

4. Serving sizes are \_\_\_\_\_ for young children than for adults.

*ANSWERS*

1. Any two of the following: Calcium, Protein, Riboflavin, Vitamin B<sub>12</sub>, Vitamin D, Zinc.
2. Two.
3. Any two of the following: yogurt, cheese, cottage cheese, custard, pudding, nonfat dry or evaporated whole milk (used in casseroles, soups, or alone).
4. Smaller or half the size.

### Meat Group

Meat and meat alternatives, besides providing protein, provide iron, zinc, niacin (B vitamin), and other nutrients. Children need 2 – 4 ounces of protein-rich foods each day.

Meat	
Some Food Choices	Typical Serving Size for Children
Tuna Salad	1/4 cup
Hot Dog*	1
Cooked Meat, Fish, and Poultry	1 ounce: 1/2 small hamburger 1/2 chicken leg 1/2 lean chop 1 slice meat
Egg	1
Nuts*	2 tablespoons
Seeds*	4 tablespoons
Sunflower	
Sesame	
Pumpkin	
Cooked Beans, Lentils, Dried Peas	1/2 cup
Peanut Butter*	2 tablespoons
Tofu	1/2 cup
* These foods can cause choking in young children.	

Remember that plant sources of protein, such as peanut butter or dried beans and peas, are nutritious, tasty, and affordable.

Some protein-rich foods that are often popular with children are:

- Meatloaf
- Baked Chicken
- Bean Burrito
- Tuna Sandwiches
- Peanut Butter and celery



*SELF-CHECK: PRACTICE YOUR KNOWLEDGE*

Fill in the blanks to correctly complete the statements:

1. \_\_\_\_\_ ounces of protein-rich foods are needed each day for 1 to 5-years old.
2. Name two plant sources of protein:
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
3. Name two nutrients that protein-rich foods provide:
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
4. Two protein-rich foods that are often popular with children are \_\_\_\_\_ and \_\_\_\_\_.

*ANSWERS*

1. 2-4
2. Peanut butter, dried beans and peas
3. Any two of the following: protein, zinc, iron, niacin (there are other acceptable answers not covered in this module).
4. Any two of the following: peanut butter, tuna, meatloaf, dried beans, hamburgers, chicken.

## Grain Group

Whole grain or enriched bread, rice, pasta, and cereal products contain thiamin, riboflavin, folate, and niacin (B vitamins), and iron. They also supply an inexpensive source of energy (calories). Whole grain products are preferable to enriched, and especially non-enriched products, as they 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 helps make us full and keeps things moving in the digestive tract. Eating foods that are good sources of fiber may help prevent constipation. Children (1 -5 years old) need 3-5 ounces of grain products daily.

### What does “enriched” mean?

You’ll see the word “enriched” mostly on flour, breads, tortillas and pasta. What this means is that during the refining process, valuable nutrients were lost. Manufacturers add back some of the lost nutrients, but fiber is not added back.

### How much fiber do children need?

A simple way to make sure children are getting enough fiber is by making healthful food choices. If your children are eating at least 5 servings of fruits and vegetables each day along with other foods that are good sources of fiber, there is really no need to count fiber grams. If caregivers find it helpful to keep track of numbers, add 5 to your children’s age. For example, a 4-year-old would need about 9 grams of fiber each day. Note: The total daily recommended amount of up to 25 grams for adults can be used as a general guideline for children.

Bread, Cereal, Rice and Pasta Group	
Some Food Choices	Typical Serving Size for Children
Bread	½ slice
Tortilla (6”)	½
English Muffin, Bagel	¼
Pancake/Waffle (5”)	½
Roll, Muffin	½
Hot Dog/Hamburger Bun	¼
Cooked Hot Cereal	¼ cup
Cold Cereal	½ cup
Rice, Noodles, Pasta	¼ cup
Wheat Germ	2 tablespoons
Popped Corn*	¾ cup
Crackers	1 graham 5 animal or wheat

\* This food can cause choking in young children.

The bread, cereal, rice, and pasta group is generally well liked. A few of the popular choices of preschool children are:

- Cereal
- Pancakes
- Bread
- Tortillas
- Crackers

However, a few words of caution regarding the bread, cereal, rice, and pasta group:

- Encourage the use of lightly- or non-sugared cereals.
  - Limit sweet rolls, cookies, cakes, and other snack foods because they are typically higher in fat and sugar, compared to the other nutrients provided by them.
- Limit added butter, oils, and margarine to rice, pasta and bread.
- Use only small amounts of syrup and jelly on pancakes, waffles, or bread. Or top pancakes and waffles with small pieces of fruit.

Adding sugars and fats to the grain foods changes an otherwise nutritious grain food to a less nutritious food.

*SELF-CHECK: PRACTICE YOUR KNOWLEDGE*

1. Whole grain or enriched grain products are good sources of which of the following:  
(Circle all the correct answers.)

Vitamin C  
Energy (Calories)

B Vitamins  
Calcium

Iron

Fill in the blanks to accurately complete the statements.

2. \_\_\_\_\_, found in whole grain products, helps keep you full and prevent constipation.
3. Children, age 1 to 5 need \_\_\_\_\_ ounces of grain products each day.
4. Name a favorite food for children from the grain group: \_\_\_\_\_

*ANSWERS*

1. You should have circled Iron, B Vitamins, and Energy (Calories).
2. Fiber
3. 3-5

4. Any of the following: cereal, pancakes, bread, tortillas or crackers

### Fruit Group and Vegetable Group

Fruits and vegetables are good sources of vitamins A and C. In addition, they provide vitamin E, folate, iron, and fiber. It is important to provide a variety of colors of fruit and vegetables to children to ensure adequate intake of fiber, vitamins and minerals.

A total of 1- 1 ½ cups of vegetables and fruits are the recommended daily amounts for the 1 to 5 years old:

- One serving of vegetables should be dark green.
- One serving of vegetables should be orange.
- The remaining vegetable servings can be from other vegetables.
- Limit 100% fruit juice to 4 oz per day in toddlers 1 through 3 years of age, and 4-6 oz per day for children 4 through 6 years of age.

<b>Typical Serving Size for Children</b>		
½ medium raw vegetable/fruit		¼ cup raw vegetables/fruits
¼ cup cooked vegetables		½ cup juice (4 oz)
(Exceptions to these serving sizes are indicated in parentheses after the foods in the following lists.)		
<b><u>Dark Green Vegetables</u></b>	<b><u>Orange Vegetables</u></b>	<b><u>Starchy Vegetables</u></b>
Broccoli	Carrots	Potatoes
Brussels Sprouts	Sweet Potatoes	Yam (Taro)
Collard Greens	Pumpkin	Corn*
Spinach	Squash	
<b><u>Other Vegetables</u></b>		
Avocado	Okra	Zucchini
Bamboo Shoots	Onion	Lettuce
Asparagus	Peas*	Mushrooms
Beets	Squash	Yucca (Cassava)
Bok Choy	Tomato	Cucumber
Cabbage	Turnip	Wax (Yellow) Beans
Eggplant		Celery*
<b><u>Fruit</u></b>		
Apple	Grapes*	Pears
Apricots	Honey Dew Melon	Plantain
Banana	Mango (¼)	Pineapple
Cantaloupe (⅛)	Persimmons	Raisins*
Cherries (Pitted)*	Papaya (¼)	Tangerine
	Peach	Watermelon
*These foods can cause choking in young children. Refer to the following section for more details on choking.		

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 appealing to children by serving them raw, or 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.

Favorite vegetables and fruits of young children may include: 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 are ways children can enjoy eating vegetables because of the tomato sauce.

Here are some other tips to help children eat more fruits and vegetables:

- Set a good example or be a role model for children by eating fruits and vegetables with meals and snacks.
- Depending on their age, children can help shop for, clean, peel, or cut up fruit and vegetables.
- While shopping, let children to pick out a new fruit or vegetable to try later at home.

### **Vitamin and Mineral Supplementation**

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

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

### **An Important Message about Choking**

Many babies and children die each year from choking. Most choking-related deaths occur in children two years of age or younger. Inappropriate foods given to babies 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 2 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. Parents must also be cautious of choking hazards for children ages 2-5 years, as their rotary chewing motion continues to develop. Foods most often named as causing fatal choking are those that are

round or that can “ball up” in the airway because of their texture. Choking hazards for toddlers and preschoolers include:

- Whole hot dogs and other sausage-shaped meats
- Hot dogs or sausages sliced into rounds, like quarters
- Raw carrots, grapes and apple pieces
- Hot bread-type biscuits
- Peanut butter given alone or in sandwiches
- Popcorn
- Gum drops
- Nuts
- Seeds
- Beans, peas
- Chewing gum
- Round-shaped candies

**To prevent food-related choking:**

- Always supervise feeding of preschool-age children so you are aware of any difficulty they have in swallowing food. If a child is choking, he/she may not be able to make sound. A clear view of children’s faces while eating is an important prevention measure.
- 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. Lightly mash cooked beans and peas.
- Moisten smooth peanut butter with 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, e.g., 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: PRACTICE YOUR KNOWLEDGE*

Fill in the blanks for questions 1-4.

1. Vegetables and fruits are especially good sources of vitamins \_\_\_\_\_ and \_\_\_\_\_.
2. Certain raw vegetables and fruits, 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.

---

---

4. Children 1-5 years of age need a total of at least \_\_\_\_\_ cups each of vegetables and fruits each day.

5. In the blank to the left of the sentence, put a "T" if the statement is true or "F" if it is false.

\_\_\_\_\_ Parents should force their children to eat their vegetables.

6. Name two tips to help children eat more fruits and vegetables.

---

---

7. Who should parents talk to about vitamin and mineral supplementation needs of their child?



*ANSWERS*

1. Vitamin A, Vitamin C
2. Choking
3. Any two of the following are correct: Solid foods that require a lot of chewing can be:
  - a) cooked,
  - b) pureed,
  - c) mashed,
  - d) finely chopped, or
  - e) diced;
  - f) cut hot dogs into two or more lengthwise pieces;
  - g) moisten smooth peanut butter with juice or applesauce;
  - h) cut round-shaped foods such as raw carrots and grapes into small pieces.
4. 2 cups
5. False. Parents should not over-react to a child's refusal to eat or to his/her food dislikes.
6. Tips to help children eat more fruits and vegetables: Caregivers act as a role model and eat fruits and vegetables themselves. Ask children help with shopping and preparation of fruits and vegetables. Try preparing fruits and vegetables in different ways.
7. Their health care provider.

### Meal Planning for Young Children

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

The following is a sample meal pattern for young children. Study the meal pattern and familiarize yourself with the suggested food combinations that provide all the essential nutrients for children ages 1 to 5 years. Try to develop a menu with specific foods from this meal pattern.

<b>Sample Meal Pattern</b>		<b># of Servings</b>
Breakfast	Fruit group	1
	Bread, cereal, rice, and pasta group	2
	Milk, yogurt, and cheese group	1-2
Snack	Milk, yogurt, and cheese group	1
	Bread, cereal, rice, and pasta group	1
	Fruit group or vegetable group	1
Noon Meal	Meat, poultry, fish, dry beans, eggs, and nuts group	1
	Vegetable group	1
	Fruit group	1
	Bread, cereal, rice, and pasta group	1
	Milk, yogurt, and cheese group	1
Snack	Milk, yogurt, and cheese group	1
	Bread, cereal, rice, and pasta group	1
Evening Meal	Meat, poultry, fish, dry beans, eggs, and nuts group	1
	Vegetable group	1
	Fruit group	1
	Bread, cereal, rice, and pasta group	1
	Milk, yogurt, and cheese group	1

### What Should Children Drink?

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

Children should consume about 2 cups (16 oz. total) of milk per day (2 ½ cups for children ages 4-8). About what the child’s WIC food package provides. Drinking more than this may reduce the child’s appetite for other healthy foods.

Children between the ages of 1 and 2 years of age should drink whole milk. Older children can drink low fat (1%) or fat-free milk.

Limit juice – 4 oz a day in toddlers 1 through 3 years of age, and 4 to 6 oz a day for children 4 through 6 years of age. Drinking more than this can reduce the child’s appetite for other healthy foods. Serve 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 lead to early childhood caries.

Sports drinks, soda, and fruit drinks provide sugar, 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 meant for young children. Non-herbal teas have tannins in them and should not be offered to children because it can interfere with iron absorption. These teas can also contain caffeine which children do not need.

**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. 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 may be sensitive to textures, flavors and temperatures. Check out the table below for suggestions on what to serve.

<b>Meat</b>	<b>Hot Cereal, Mashed Potatoes</b>	<b>Raw Vegetables</b>
Serve: Moist, Soft	Serve: Smooth	Serve: Crisp
Avoid: Dry or Tough	Avoid Lumpy or Sticky	Avoid: Mushy

<b>Cheese</b>	<b>Milk</b>
Serve: Milk Flavor	Serve: Cold
Avoid: Spicy or Strong	Avoid: Very Hot/Very Cold

**Common Questions and Answers**

**Q:** *What would you say to a caregiver who prepares at least two main choices at a meal to make sure there is a food her child will eat?*

**A:** This is an understandable situation. When preparing meals, we usually try to cook what people like. However, it can set up a situation where caregivers become short-order cooks and the family does not get introduced to a variety of foods.

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

One good strategy to consider discussing 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 serving herself, and take the focus off what is on the plate. If the child whines that she doesn't like the food choices, the 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.

Caregivers should not break down and ask, "What will you eat?" This is what sets up the role as the short-order cook.

Additional suggestions to help introduce new foods to children include:

- Ask the child to 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.
- Explore the food with the child by talking about how it is made or grown.
- Be casual if food is refused and offer it again another time.
- Be a good role model and show your child that you enjoy trying new foods.

### *SELF-CHECK: PRACTICE YOUR KNOWLEDGE*

1. In the list below, put a check mark (✓) in the blank next to the foods and methods of food preparation which 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

In the blank to the left of the statement, put a "T" if the statement is true, or an "F" if the statement is false.

2. \_\_\_ Caregivers should offer at least 12 ounces of juice a day to their child.

3. \_\_\_ Sports drinks are an appropriate beverage for young children.

### ANSWERS

1. You should have checked (✓): bite-sized pieces of food; bright-colored foods; and crisp vegetables.
2. False. Caregivers should offer no more than 4-6 ounces a day of juice, depending on age, if at all.
3. False. Sports drinks are inappropriate for young children.

### Snacks

Snacks play an important role in the eating patterns of a young child. Snacks can supplement meals, providing nutrients which were not eaten at mealtime. For example, a child who does not drink milk at lunch could be served cheese and crackers for his afternoon snack. In this way, snacks can be planned to meet almost any nutrition need.

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. Snacks are often served 2-3 hours after a meal. Snacks can be simple. Create a “snack spot” in the refrigerator or a corner in the cupboard where snacks are kept.

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, milk, peanut butter, yogurt, cheese, and cottage cheese.
- Food that is low in sugar
- Small amounts of food that don't spoil the appetite for meals
- Food that are not among the ones listed in the previous list that may cause choking

Here are some suggestions for snacks which supplement meals:

To add protein:

Offer some hard-cooked eggs, chunks of tuna, pieces of cheese, or slices of leftover meat. Serve crackers with peanut butter, tuna, or cheese. Let the child use their fingers to eat these snacks.

To add fruits and vegetables:

Serve fruit raw. Cut the rind off melon and serve wedges the child can pick up. Peaches, small chunks of cantaloupe or orange slices are another way to add vitamin A to snack time. Try serving small pieces of broccoli and carrots with cottage cheese or ranch dip. Many children prefer raw vegetables to cooked. Besides the ones already mentioned, you might try raw green beans, snap peas, green pepper slices, and spinach, chard, or other greens.

### **Common Questions and Answers:**

**Q:** *When are appropriate snack times?*

**A:** “Snack Time!” These words can be magic to a child’s ear. Yet parents’ 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 a healthy snack.

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 3-4 times out of the 6 times they are offered food. Therefore, it isn’t so unsettling when a child refuses to eat if there is a planned snack in 2-3 hours.

### **An Important Reminder about Sugar**

Some parents 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 linking sugar to hyperactivity. There are many foods containing sugar that also contain caffeine as well, such as, chocolate candies, certain soda drinks. It may be the caffeine which 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 Questions and Answers:**

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

**A:** This can be a real problem for parents and can happen when children who are too busy in play or other activities to stop and eat. Here are a few suggestions to offer parents:

- 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/pause screens, including 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. If a child refuses to eat, parents can tell them, “That’s okay, you don’t have to eat. Just stay 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. Assure 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, it may be helpful if children are not 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.

*Q: Why is it better for a child to have 3 meals and 2-3 snacks than to graze all day long? (How does it affect caloric intake, especially for a child with inadequate growth?)*

**A:** 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 overeat.
- Eat food out of boredom.
- Not consume a daily balance of nutrients, and
- Be at to a greater risk of cavities.

## What We See

A parent may 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 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 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 these differences can lead to eating when not hungry and perhaps to overeating. We also know that children who graze, often drink more juice and other beverages containing sugar and may not get enough 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 a healthy eating habit.

**Here are some tips to share with parents:**

Meals and snacks should be planned. Encourage parents 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 (for example, 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 eating when hungry. Children should have a snack and be done with it. Furthermore, frequent nibbling can increase the chance of cavities because of the constant presence of food on the teeth.

Limit the outside cues that might remind the child to eat. Help the parent to identify outside cues such as having a cookie jar on the counter or eating in front of the television.

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

*SELF-CHECK: PRACTICE YOUR KNOWLEDGE*

In the blank to the left of the statement, put a "T" if the statement is true or an "F" if the statement is false.

\_\_\_ Snacks can be nutritious supplements to the preschooler's diet.

Name two good snacks from each of the following groups of food:

Milk, Yogurt, and Cheese Group

- a.
- b.

Vegetables and Fruits

- a.
- b.

Bread, Cereal, Rice, and Pasta Group

- a.
- b.

Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts Group

- a.
- b.



## ANSWERS

1. True. Snacks can be nutritious additions to the diet. Snacks should be served in small amounts so that appetite for meals won't be spoiled.
2. Any foods listed in the appropriate charts of the five food groups or any foods suggested in the section on "snacks" are correct answers.

### 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. You can support caregivers of vegetarian children by sharing nutrition information to help ensure that an adequate variety of food is offered for optimal growth and development.

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

- Lacto-ovo: These individuals eat grains, legumes, nuts, seeds, fruits, vegetables, dairy products, and eggs. Meat, poultry, and fish are typically avoided.
- Lacto: These individuals eat foods like lacto-ovo vegetarians except eggs are also avoided.
- Vegan: These individuals eat 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 and/or poorly planned vegetarian diets.

For the caregiver who identifies their child as a vegetarian, you will need to assess what foods the caregiver is offering and what foods they are avoiding. This will give you 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, zinc, iron, vitamin D and vitamin B<sub>12</sub>.

Energy needs are sometimes difficult to meet if the child is eating a diet high in fiber. You can encourage 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, you can recommend plant fat sources such as nuts and nut butters (for example, peanuts, peanut butter, almonds, almond butter, seeds (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. Amino acids combine to form protein in the body. Examples of protein containing plant foods are grains (barley, cornmeal, couscous, millet, oats, quinoa, and rice), legumes (canned or dried beans), soy products (soy milk, tofu, and soy hot dogs), imitation meat products, nuts and seeds (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 beverage and orange juice, tofu prepared with calcium, dark leafy greens, such as collard greens, kale, and mustard greens.

Iron can be a concern in the vegetarian diet and good food sources include dried fruits, spinach, and dried fruit and legumes. Since vitamin C promotes iron absorption, citrus fruits, broccoli, strawberries and cabbage help absorption.

Vegetarians need more zinc than non-vegetarians because the body does not absorb this mineral as easily from plants as from animal products. Vegetarians who eat dairy products will find them a good source of zinc. Zinc can be found in whole grains, legumes, wheat germ and soy products.

Vitamin B<sub>12</sub> is a concern primarily for vegan children because it is found mainly in animal products, including dairy products. Sources of vitamin B<sub>12</sub> for the vegan child include vitamin B<sub>12</sub> fortified foods such as some brands of soy beverage, imitation meat products, fortified nutritional yeast, and breakfast cereals. Families of vegan children may want to talk with their health care provider to see if a B<sub>12</sub> supplement is needed.

## Desserts

While snacks are eaten between meals, desserts are typically eaten at the end of a meal. Even though desserts are sweet, they don't have to add only "empty calories." Desserts, like snacks, can also be nutritious, supplying necessary nutrients for the child. Examples of nutritious desserts are fruit, frozen fruit juice on a stick, frozen yogurt, fruit-and-nut breads.

## Common Questions and Answers

**Q:** *How would you reply to a parent who states, "He eats much better at a meal when I tell him he can have a candy when he's done."*

**A:** It sounds like you really want your child to eat better at mealtime. Did you know that you don't need to be concerned about how much your child eats? Your job is to decide when and what to feed your child. He has the job of deciding how much to eat.

Coaxing a child to eat more with a promise of a sweet treat or dessert may encourage him to overeat and that the sweet treat or dessert is the only desirable part of the meal.

Some desserts can be nutritious, such as 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 allowed to choose whether they want dessert. The main point is to keep the focus off any one food being a “reward.”

Although desserts can be nutritious, it may be a good habit to not provide desserts after every meal. It is easy to develop a “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 a problem of overweight in the child. Habits established early in life are hard to break, so it is best to offer desserts only sometimes.

*SELF-CHECK: PRACTICE YOUR KNOWLEDGE*

For questions 1-3, put “T” in the blank to the left of the statement if the statement is true, or “F” in the blank if it is false.

1. \_\_\_\_ Offering desserts after every meal may establish a difficult habit to break.
2. \_\_\_\_ Children should be rewarded with dessert after they clean their plates.
3. \_\_\_\_ Some desserts can be nutritious and provide and a healthy part of the overall diet.
4. List two nutritious desserts:
  - a.
  - b.
5. List three plant sources of protein:
  - a.
  - b.
  - c.

*ANSWERS*

1. True. The dessert “habit” is hard to break.
2. False. Desserts should **not** be used to bribe or reward.
3. True.
4. Any two of the following: fruit, frozen fruit juice on a stick, custard, pudding frozen yogurt, fruit-and-nut breads.
5. Any three of the following: grains, legumes, soy products, meat analogs, nuts, and seeds.

## Section III: Inappropriate Nutrition Practices for Children

Now that you have learned about the nutritional and developmental needs of the preschool child and a few positive feeding practices, we can now look at nutrition risks related to inappropriate feeding practices. You will assign risks for children related to impaired nutrient intake, disease and health problems. Some are high risk conditions and require a referral to a Registered Dietitian for nutrition counseling.

The format for this section includes the number associated with the risk code, examples, background information and your role in providing nutrition services to clients and care givers.

When approaching families follow these discussion guidelines:

- Establish rapport with genuine interest and a caring smile.
- Approach families with sensitivity and concern when discussing nutrition and health issues.
- Try to understand the client's perspective before offering nutrition education and resources.
- Inquire about recommendations or instructions they received from their health care provider.

### Nutrition Risks

#### 425.01 Routine Ingestion of Inappropriate Beverages as Milk Source

Examples:

- Non-fat or reduced fat milk between 12 and 24 months, unless child for whom overweight or obesity is a concern, health care provider recommends 2% milk, or family history is positive for obesity, dyslipidemia, or cardiovascular disease.
- Sweetened condensed milk
- Unfortified or inadequately fortified goat's milk, sheep's milk, imitation or substitute milks such as rice, almond, non-dairy creamers or other "homemade concoctions".

#### Background information:

Sweetened condensed milk, unfortified or inadequately fortified goat's milk, sheep's milk, imitation milks and substitute milks do not contain nutrients in amounts appropriate as a primary milk source for children. Non-fat-free or reduced fat milks are not recommended for children less than 2 years of age because of the lower calorie density compared with whole-fat products. The low-calorie, low-fat content of these milks requires an increase in caloric intake to meet energy needs.

Children under 2 years of age using reduced fat milk gain weight at a slower growth rate, lose body fat as evidenced by skin fold thickness, lose energy reserves, and are at risk of inadequate intake of essential fatty acids.

**Your Role:**

- Oftentimes parents and caregivers are not aware of the importance of the types of milk appropriate for children or that the type of milk could contribute to nutritional issues.
- Consider asking them to identify the types of milk being provided to the child and why.
- If the parent or caregiver is not aware of the potential nutritional implications, offer to explain what is appropriate for their child, i.e. whole milk for 1-year of age and reduced fat milks for children 2 years and older.
- Consider asking the parent or caregiver if they are interested in knowing why this is important. If they are interested, share with them that reduced fat milks are not recommended for children less than 2-years of age because of the need for fat and cholesterol necessary for brain development. Explain to the parent or caregiver to offer whole milk to children 1 year of age.
- If the parent or caregiver is currently providing sweetened condensed milk explain that it should be used for cooking purposes only, and not as a source of milk.
- If the parent or caregiver is interested and wants to know more, provide nutrition information about milk and/or milk substitutes appropriate for their child.
- If interested, discuss the importance of providing low-fat milk as a heart healthy choice, because higher fat milks are higher in saturated fat. This can lead to higher levels of blood cholesterol and contribute to heart disease later in life.

**425.02 Routine Ingestion of Sugar Containing Fluids**

Examples:

- Soda/pop
- Soft drinks
- Gelatin water
- Corn syrup solutions
- Sweetened tea

**Background Information:**

Routine consumption of sugar containing fluids is the major dietary factor affecting dental caries prevalence and progression. Consumption of foods high in sugar also increases the risk of early childhood overweight and obesity.

**Your Role:**

- If a parent or caregiver shares concerns about the child routinely drinking a sweetened beverage acknowledge their concerns using reflections and affirmations.
- Consider that the parent or caregiver may be feeding a sweetened beverage because the child won't drink milk or water.
- If the parent or caregiver is not aware of the health issues related to routine consumption of sugar containing fluids, offer to explain the association between sugar sweetened beverages and dental caries.

- Sugar containing fluids contain significant amounts of “empty” calories and can contribute to excess weight.
- Sports drinks are not needed and not made for children.
- Water can be offered frequently during the day.
- Types of sugar containing fluids include fruit drinks and sports drinks.
- If the parent or caregiver has tried water and their child refuses, suggest continuing to offer water and try alternatives (e.g. unsweetened beverages).

#### **425.03 Routinely Using Nursing Bottles, Cups, or Pacifiers Improperly**

- Using a bottle to feed
  - Fruit juice or
  - Diluted cereal or other solid foods.
- Allowing the child to fall asleep or put to bed with a bottle at naps or bedtime.
- Allowing the child to use the bottle without restrictions (e.g., walking around with a bottle) or as a pacifier.
- Use of 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 training cup.

#### **Background information:**

The fermentation of carbohydrates on the surface of teeth produces acids demineralize and destroy the tooth’s enamel. This leads to tooth decay. If inappropriate use of nursing bottles, cups, or pacifier persists, the child is at risk of toothaches, costly dental treatment, loss of primary teeth, and development lags on eating and chewing. Solid foods such as cereal should not be put into a bottle for feeding.

#### **Your Role:**

- Complete a thorough assessment of how the child is being fed with a bottle and/or using a pacifier.
- Ask the caregiver if they have questions or concerns about when to wean their child from a bottle and/or pacifier.
- If the parent or caregiver is aware of the risks of bottle use but hesitant to work towards changing health behaviors, due to the child’s resistance, offer encouragement and support.
- If interested, offer resources regarding weaning the child at a young age (by 14 months of age) to prevent tooth decay.

#### **425.04 Inappropriate Feeding Practices for Children that Disregard Developmental Needs, any of the following:**

- Routinely using feeding practices that disregard developmental needs of child such as:
  - Not supporting growing independence with spoon
  - No finger feeding
  - Forcing food
  - Not feeding when hungry
  - Not supporting self-feeding

- Not feeding texture appropriate foods
- Putting at risk of choking
- Not supporting a child's need for growing independence with self-feeding (e.g. spoon-feeding a child who is able and ready to finger-feed and/or try self-feeding with appropriate utensils.
- Feeding inappropriate consistency size or shape to <4year old.
- Feeding or offering a child primarily pureed or liquid food when the child is ready and capable of eating foods of an appropriate texture (mashed, chopped or appropriate finger foods.)

**Background information:**

The interactions and communication between a caregiver and child during feeding and eating influence a child's ability to progress in eating skills and consume a nutritionally adequate diet. A dysfunctional feeding relationship, which could be characterized by a caregiver misinterpreting, ignoring, or overruling a young child's innate capability to regulate food intake based on hunger, appetite and satiety, can result in poor dietary intake and impaired growth.

Parents who consistently attempt to control their children's food intake may give children few opportunities to learn to control their own food intake. This could result in inadequate or excessive food intake, future problems with food regulation, and problems with growth and nutritional status. Children should not be offered baby foods or pureed foods unless they have a medical condition that affects their feeding ability.

**Your Role:**

- Complete a thorough assessment of what types of foods are offered to the child on a regular basis and how the feeding relationship is progressing.
- Ask the parent/caregiver if they have questions or concerns about mealtime and snack time with their child.
- Offer support and resources for:
  - Healthy eating habits for children and types of foods and quantities appropriate for the child's age.
  - Age-appropriate feeding skills and helping their child learn to consume a variety of textures for normal development.
  - Division of responsibility during meals and snacks - Parents choose the foods provided, where and when; children decide how much.

**425.05 Feeding Potentially Unsafe Foods**

Examples of potentially harmful foods for a child:

- 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)

**Background information:**

All foods listed with 425.05 have been implicated in selected outbreaks of food-borne illness. These foods can contain harmful bacteria that put children at risk for contracting serious food-borne illnesses, such as Salmonella, Listeria, and E. coli.

**Your Role:**

- Complete a thorough assessment as to whether the foods listed are offered to the child.
- If interested, provide the caregiver information regarding potentially harmful foods:
  - Do not drink unpasteurized fruit or vegetable juices. Look on label to ensure that it is labeled pasteurized. This includes unpasteurized apple cider from the local cider mill.
  - Do not drink raw milk or eat cheese or other foods made with unpasteurized milk.
  - Do not eat soft cheese such as feta, Brie, Camembert, blue-veined cheeses and Mexican style cheese such as queso Blanco, queso fresco, or Panela unless made with pasteurized milk.
  - Fully cook meat, poultry and seafood. Use a meat thermometer to ensure meats are cooked to safe temperatures.
  - Do not eat raw sprouts.
  - Heat hot dogs, luncheon and deli meats to steaming hot before eating.
- If the child has symptoms of food-borne illness recommend the caregiver consult their health care provider, as appropriate.

**425.06 Highly Restrictive Diets, any of the following:**

- Severely limited intake of calories and important food sources of essential nutrients (example: fruit and nut diet)
- High risk eating pattern

**Vegan Diets, ALL the following:**

- Consuming only foods of plant origin
- No animal products (no meat, poultry, fish, eggs, milk, cheese or other dairy products)
- Avoidance of foods made with animal product ingredients.

**Background information:**

Highly restrictive diets prevent adequate intake of nutrients, interfere with growth and development, and may lead to other adverse physiological effects. Well-balanced vegetarian diets with dairy products and eggs are generally associated with good health. However, strict vegan diets may be inadequate in calories, vitamin B12, vitamin D, calcium, iron, protein and essential amino acids needed for growth and development. The more limited the diet, the greater the health risk.

**Your Role:**

- Complete an assessment of the child's eating patterns.
- Offer support and resources about healthy eating habits for children and the types of foods and quantities appropriate for their child's age.
- Ask the caregiver if they are interested in discussing appropriate calorie and food intake for their child.

- Offer support and resources about their child's need for nutrients that are eliminated or reduced by the restriction, including alternative foods.
- Suggest the caregiver discuss child's dietary practices with their health care provider.

#### 425.07 Inappropriate or Excessive Intake of Dietary Supplements

- Routinely taking inappropriate or excessive amounts of any dietary supplements not prescribed by a physician with potentially harmful consequences, including but not limited to ingestion of unprescribed or excessive or toxic:
  - Herbal remedies or botanical supplement/remedies/teas
  - Mineral supplements
  - Multi or single vitamins

##### **Background information:**

A child consuming inappropriate or excessive amounts of single or multivitamins or mineral or herbal remedies not prescribed by a physician is at risk for a variety of adverse effects including harmful nutrient interactions, toxicity, and teratogenicity.

##### **Your Role:**

- Complete an assessment and offer to discuss dietary supplement use.
- Offer support and resources to caregivers about:
  - Avoiding teas, remedies, and supplements that are potentially harmful.
  - Following their health care providers recommendations regarding vitamin and mineral supplements.
  - The risks associated with excessive supplement use.
- Suggest the caregiver discuss the supplementation with their child's health care provider.

#### 425.08 Vitamin/Mineral Supplementation

- Client not routinely taking a dietary supplement recognized as essential by national public health policy makers because diet alone cannot meet nutrient requirements.
- Examples include but are not limited to:
- When water supply contains less than 0.3 ppm fluoride and:
  - Children age 6 months through 35 months not taking 0.25 mg of fluoride daily.
  - Children 36 to 60 months not taking 0.5 mg of fluoride daily.
  - Children who are taking less than 1 quart per day of Vitamin D-fortified milk and are not taking 400IU supplement of Vitamin D. Note: For children 2 years and older the recommendation is 2 cups (16 oz.) low-fat milk per day.

##### **Background information:**

Fluoride is found naturally in water and helps prevent and even reverse the early stages of tooth decay. Fluoride supplements may be of benefit in reducing dental decay for children living in fluoride-deficient areas. Vitamin D is an essential nutrient in bone health. The best sources of vitamin D are direct exposure of skin to sunlight, fortified milk, fish oils, egg yolk, liver and vitamin D supplements.

**Your Role:**

- Complete an assessment and discuss what type of water their child drinks (city, well, bottled, etc.)
- The local agency should contact their health department to learn the fluoridation level in their municipal water supply and the geographical region it encompasses.
- If the caregiver uses well water, ask if their water has been treated and tested. If the answer is “no” or “I don’t know” recommend the caregiver to talk with their health care provider or dentist and have the well water checked if fluoride content is unknown.
- Offer information and resources about fluoride in water, such as:
  - Most bottled waters lack fluoride, but fluoridated bottled water is available. If fluoride is added, the manufacturer is required to list the amount.
- Make a referral to the dentist and/or health care provider for fluoride supplementation recommendations.
- If their child is not receiving enough vitamin D through food or supplements encourage the caregiver to discuss supplementation with their health care provider.

**425.09 Routine Ingestion of Non-Food Items - Pica:**

- **Current craving for or consumption of non-food substances such as:**
  - Ashes
  - Baking soda
  - Carpet fibers
  - Cigarettes or cigarette butts
  - Chalk
  - Clay or dirt
  - Dust
  - Coffee grounds
  - Foam rubber
  - Ice
  - Paint chips
  - Soil
  - Starch (laundry or cornstarch)
  - Wood

**Background information:**

Pica is the craving for or ingestion of nonfood substances. Pica is linked to lead poisoning, anemia, excess calories or displacement of calories, gastric and small bowel obstructions, as well as parasitic infections (for example, if dirt is ingested). It can also contribute to nutrient deficiencies by either inhibiting absorption or by displacing nutrient-dense foods.

**Your Role:**

- Complete an assessment of what nonfood substances the child consumes.
- Determine if the practice is linked to cultural beliefs and assess the child’s dietary intake.
- Offer information and resources to the parent or caregiver about pica.
- Offer to assist the parent or caregiver in developing a plan to modify the child’s behavior.

**428.01 Inappropriate 4-23 mo. old Feeding (Dietary Risk Associated with Complementary Feeding Practices)**

Use for 4-23 months after a complete nutrition assessment is performed.

- This criterion may only be assigned after a complete assessment has been performed to assess for risk (including 411.1 – 411.11, Inappropriate Feeding Practices for Infants or 425.1 – 425.9 Inappropriate Nutrition Practices for Children and no other risk is identified.

**Background information:**

A child  $\geq 12$  to  $< 24$  months of age 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 be based on the *Dietary Guidelines for Americans*, and is at risk of inappropriate complementary feeding. The process of adding complementary food should reflect the physical, intellectual, and behavioral stages as well as the nutrient needs of the child. Caregiver often do not recognize signs of developmental readiness and, therefore, offer foods and beverages that may be inappropriate in type, amount, consistency, or texture.

**Your Role:** This risk should only be assigned if no other risks apply.

## Section IV: Growth and Weight Related Concerns in Children

One of the functions of the WIC Program is to monitor stature and weight status of clients. Childhood is a critical time for normal growth and development and nutrition plays a key role in the process. By tracking the changes in stature and weight over time, a clear picture is obtained in the overall health of the child. Both over and under nutrition are health concerns that need to be addressed. This section covers growth and weight related concerns in preschool children.

### Birth Weight:

Children born with a low or very low birth weight need optimal nutrient intake to survive, to meet the needs of an extended period of relatively rapid growth after they are born and complete their growth and development. For children, this risk is only risked prior to 24 months of age.

#### 141.01+ Low Birth Weight (LBW) and Currently Under 24 Months of Age

- Birth weight at or less than 25 gm. (at or less than 5 lb. 8 oz.)

#### Very Low Birth Weight (VLBW) for Infants and Children Under 24 Months of Age

- Birth weight defined as at or less than 1500 gm. (at or less than 3 lb. 5 oz.)

### Your Role:

- Ensure accurate birth measurements are obtained.
- Coordinate services with the health care provider to determine the best practices for feeding breast milk and/or formula past one year of age.
- Offer information and resources with the caregiver regarding healthy eating habits for children, including the types of foods and quantities appropriate for the child's age.
- If interested, assist the caregiver in developing a plan to improve their child's eating behaviors, food habits, and physical activity.

### Short Stature and At Risk of Short Stature

Abnormal short stature in children is widely recognized as a response to a limited nutrient supply at the cellular level. Short stature is related to a lack of total dietary energy and to poor dietary quality that provides inadequate protein, particularly animal protein and inadequate amounts of certain nutrients such as zinc, vitamin A, iron, copper, iodine, calcium and phosphorus.

### **121.01 Short Stature**

- C1 - Birth to less than 24 months: At or below 2/3<sup>rd</sup> percentile length-for-age (CDC charts).
- C2-C4 - At or below the 5<sup>th</sup> percentile length or stature-for age (WHO charts).

### **121.02 At Risk of Short Stature**

- C1 - Birth to less than 24 months: At or above 2.3<sup>rd</sup> percentile and at or below 5<sup>th</sup> percentile for length-for-age (CDC charts).
- C2 - C4 - At or above 5<sup>th</sup> percentile and at or below 10<sup>th</sup> percentile length or stature-for-age. (WHO charts).

### **Background**

Abnormally short stature suggests possible stunted growth due to prolonged undernutrition, repeated illness, or medical conditions. Genetic/ethnic stature differences decrease with adequate energy, protein, and micronutrients. Abnormally short stature in children is widely recognized as a response to an inadequate nutrient supply at the cellular level. This indicator can help identify children whose growth is stunted due to prolonged undernutrition or repeated illness.

### **Your Role:**

- Ensure accurate length and height measurements are obtained.
- If nutritional inadequacies are present, ask the caregiver if they are interested in discussing factors that might be contributing to poor intake.
- Offer information and resources related to healthy eating habits for children and recommend types of foods and quantities appropriate for the child's age.
- Offer to discuss eating behaviors and food habits that promote a healthy appetite such as regular meal/snack times.
- Consider asking the height of child's biological parents to consider as a variable that may help explain short stature in some infants and children.

### **Underweight and at Risk of Underweight**

Participation in WIC has been associated with improved growth in both weight and height in children. A child determined to be underweight at WIC certification should be monitored regularly as determined by the Registered Dietitian.

### **103.01+ High Risk Underweight**

- C1 - C4 - Birth to less than 24 months. At or below the 2.3<sup>rd</sup> percentile for weight-for-length (WHO charts).
- C2 - C4 - Children at or above 24 months: At or below the 5<sup>th</sup> percentile Body Mass Index (MBI)-for-age (CDC charts).

### 103.02 At Risk of Underweight

- C1 – C4 – Birth to less than 24 months: Above the 2.3<sup>rd</sup> percentile for weight-for-length and at or below the 5<sup>th</sup> percentile for weight-for-length (WHO charts).
- Children at or above 24 months: Above the 5<sup>th</sup> percentile and at or below the 10<sup>th</sup> percentile Body Mass Index (BMI)-for-age (CDC charts).

Notes: If manually plotted, all anthropometric percentiles should be rounded down to the whole number. This does not apply to measurements.

### Inadequate Growth

Failure to thrive and inadequate growth in children are serious medical concerns that can relate to nutrition related practices. The presence of failure to thrive (FTT) must be diagnosed, documented and/or reported by a health care provider. A self-reported diagnosis should be confirmed and validated by you. FTT is a serious growth problem with often complex causes. Physical growth delay can proxy undernutrition effects on immune function, organ and brain development, and hormonal function.

#### Your Role:

- Assure that accurate height and weight measurements are obtained.
- Refer high risk underweight children to a Registered Dietitian for counseling within 30 days of the risk determination.
- Offer to discuss with the caregiver:
  - Factors that might be contributing to or directly causing the child to be underweight, such as illness.
  - Potential problems of being underweight.
  - General eating behaviors/issues that can lead to inadequate caloric intake.
- If interested, review healthy eating habits for children and recommend types of foods and quantities appropriate for the child's age.
- Offer information and resources related to eating behaviors and food habits which promote a healthy appetite such as regular meal/snack time, creating a calm, relaxed meal atmosphere.
- Listen to the caregiver to learn what they would like to work on.
- Work together with the caregiver to learn what they would like to plan to do to improve their child's weight.

### Overweight and Obesity

#### Background

Overweight and obesity are major health problems in the United States and childhood obesity puts children at risk for health problems. Children of families on lower incomes are more affected by obesity. Excess body weight causes many health problems that limit a person's quality of life, increases risk of chronic diseases, and causes huge medical costs for the United States.

Obesity results from a complex combination of many factors related to genetics, lifestyle behaviors, and the environment we live in. These factors impact critical periods in the life course that determine a child's risk of obesity: the period before a mom becomes pregnant, during pregnancy, and during the earliest years of a child's life.

Obesity for children in the WIC Program is defined as a BMI for age or weight for stature greater than or equal to the 95<sup>th</sup> percentile for children ages 2-5 years.

Overweight for children in the WIC Program is defined as a BMI for age or weight for stature  $\geq 85^{\text{th}}$  and  $< 95^{\text{th}}$  percentile for children ages 2-4 years.

At Risk of Overweight for children 12 months and older in the WIC Program is assigned if the biological mom has a BMI  $\geq 30$  at the time of certification. If the mom is pregnant or has had a baby within the past 6 months, preconception weight is used to determine risk

Nobody wants to be overweight, especially children. Children don't typically think about the health consequences of overweight, but they experience emotional pain related to negative perceptions of obesity by society.

When a group of children were shown a picture of an overweight child and asked to describe the him, 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 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 painful.

Besides social difficulties, overweight and obesity can cause physical problems for children. One in five overweight children experience 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, joint problems, difficulty moving, trouble sleeping, and trouble breathing. These conditions not only cause problems for the child, but also start the development of heart disease, diabetes and cancer they are likely to experience later in childhood or 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. 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.

When we think about developing food habits early in life, we are not just talking about manners, or using a knife or fork correctly. We are also referring to why, when, and what children eat. A baby or child who is exposed to a limited number of foods while growing up



might only eat a limited number of foods as an adult. A child, who learns to graze through the day, eating for reasons not related to hunger, will likely continue to do so as an adult. A child who learns to eat when he is bored 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 age range that children are enrolled in WIC! The younger the child the easier it is to change habits.

### **Related Nutrition Risks:**

#### **113.01+ C2 - C4 Obese**

High Risk (+) requires a referral to a Registered Dietitian within 30 days of risk assignment

- At or above the 95<sup>th</sup> percentile Body Mass Index (BMI)-for-age or ≥95<sup>th</sup> percentile weight-for-stature.

The WIC Program plays an important role in public health efforts to reduce the prevalence of obesity by actively identifying and enrolling young children who may be obese or at risk of overweight/obesity in later childhood or adolescence. When identifying this risk, it is important to communicate with parents/caregivers in a way that is supportive and nonjudgmental, and with a careful choice of words that convey an empathetic attitude and minimize embarrassment or harm to a child's self-esteem. Use more neutral terms (e.g., *weight disproportional to height, excess weight, BMI*) when discussing a child's weight with a parent/caregiver.

BMI is calculated and plotted on growth charts at each WIC certification. However, growth charts are meant to be used as a screening tool and comprise only one aspect of the overall growth assessment. A clinical assessment to determine if a child is at a healthy weight is more complex.

The goal in WIC nutrition counseling is to help the child achieve recommended rates of growth and development. WIC staff can frame the discussion to make achieving normal growth a shared goal of the WIC Program and the parent/caregiver. Parents/caregivers of children may need education on recognition of satiety cues.

The foods provided by the WIC Program are intended to address the supplemental nutritional needs of the Program's target population and can be tailored to meet the needs of individual clients. Emphasis can be placed on promoting food choices of high nutritional quality while avoiding unnecessary or excessive amounts of calorie rich foods and beverages and reducing inactivity.

Beliefs about what is an attractive or healthy weight, the importance of physical activity, what foods are desirable or appropriate for parents to provide to children, family mealtime routines, and many other lifestyle habits are influenced by different cultures, and should be considered during the nutrition assessment and counseling (6).

### **114.01 Overweight or At Risk of Overweight**

- C1 – C4 Children at or above 24 months of age: at or above the 85<sup>th</sup> and below the 95<sup>th</sup> percentile Body Mass Index (BMI)-for-age (CDC charts).

Have one or more risks for being at-risk of becoming overweight. The risks are limited to:

- Children at or over 12 months of age, obese mother. Biological mother with BMI at or over 30 at the time of certification (BMI must be based on self-reported, by the mother, weight and height or on a weight and height measurements taken by staff at time of certification. If the mother is pregnant or has had a baby within the past 6 months, use her pre-pregnancy weight to assess for obesity since her current weight will be influenced by pregnancy related weight gain, see BMI Table).
- Children, obese father. Biological father with a BMI at or above 30 at the time of certification (BMI must be based on self-reported, by father, weight and height or on weight and height measurements taken by staff at the time of certification, see BMI Table).

#### **Overweight**

- 2-4 years:  $\geq 85^{\text{th}}$  percentile and  $< 95^{\text{th}}$  percentile BMI-for-age

### **115.01 C1 High Weight-for-Length**

- At or above 97.7<sup>th</sup> percentile weight-for-length (WHO chart).

#### **WIC's Role with Overweight Children**

Many factors contribute to a person being overweight; some cannot be changed, but many can. Our role in WIC is to help clients with what 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. By changing food and activity behaviors of a child, the child may gradually grow into their weight. The goal is to teach children to have healthy habits for a healthy life.

When working with the caregiver of a child use sensitivity when discussing health benefits from a balanced diet and being physically active. It is important not to single the child out as a "problem" or a reason for change. Rarely are the food or activity habits of a child a problem just for them. The entire family often needs to look at changing their habits. Look at the eating patterns and activity habits of the family and consider:

- Childhood is the time to establish good food habits that will impact the health of the child both now and later in life;
- 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;
- Eating a variety of foods make a child more likely to eat a healthy diet;

- The benefits to the family if they can turn off screens and eat dinner with family conversation; and
- The heart-healthy benefits of physical activity for the entire family.

Changes in family eating and activity habits can be a challenge. When ready, parents and caregivers should be encouraged to start with very small changes. Consider asking the parent or caregiver if they are ready to make changes, what types of changes would work for their family, and what are some of the roadblocks are to making changes.

Children whose BMI-for-age is between the 85<sup>th</sup> and 95<sup>th</sup> percentile are considered “overweight” and are not high risk. WIC nutrition education generally focuses on strategies to prevent further weight gain. There may be times when a child should be referred to the Registered Dietitian for high risk nutrition counseling even when their BMI-for-age is below the 95<sup>th</sup> percentile. If the child has shown a rapid increase in weight for length (2 full channels in a 6-month period), if the child is having health difficulties because of their weight, or if the parent has concerns about the child’s weight you may want to refer them for a nutrition assessment by the Registered Dietitian.

When a child’s BMI-for-age is greater than or equal to the 95<sup>th</sup> percentile they are considered high risk. These children are referred to the Registered Dietitian after the first visit. Children with a BMI-for-age greater than or equal to the 95<sup>th</sup> percentile may have medical or physical problems as a result of their obese condition. The Registered Dietitian will assess the child and work with the parent or caregiver to complete a care plan.

It is important when referring children to the Registered Dietitian to make the child and the caregiver feel good about the referral. Explain to the caregiver that all kids grow at different rates and that some grow faster than others. Try to help the caregiver to understand that an appointment with the Registered Dietitian is an extra benefit of the WIC Program. The Registered Dietitian can supply more specific information, assessment, and answer questions.

### **Lifestyle Habits Associated with Overweight**

Listed below are some of the nutrition, activity and lifestyle habits that may contribute to overweight and obesity.

- **Use of a bottle.** Bottle use is not recommended beyond the age of 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 giving up the bottle will resolve the overweight condition.
- **Excess caloric beverages.** When a child is given too many caloric beverages (milk, juice, sports drinks, soda, 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 get a more nutritionally balanced eating pattern.

- **Meals and snacks low in fruits and vegetables.** Fruits and vegetables contain many nutrients and other substance needed by the body. Many research studies show that eating patterns high in fruits and vegetables help prevent many other 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. When eating more fruits and vegetables, daily calorie consumption tends to be lower.
- **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 the child should not eat these foods while the rest of the family does. The key is to offer these foods in moderation.
- **Frequency of eating out at restaurants or consuming fast food.** The more a child eats out or consumes fast food, the more foods they will eat that are high in fat, sugar and calories. Encourage parents to make healthy choices when eating outside the home by choosing foods such as milk versus soda or juice, grilled versus fried, apple wedges versus French fries.
- **Consumption of excessive portion sizes.** Children are often served portion sizes much larger than the recommended “serving size.” For example, a child may be provided a 16 oz. portion of juice, but that is 4 servings! It is important to review with caregivers the recommended serving size for their child so that they do not consume excess calories that can lead to an overweight child.
- **Inconsistent availability of food.** A child needs three meals a day plus 2-3 snacks. A child should not be restricted to less than this even if they are overweight. Food should not be available any time 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.** Families who have structured meals tend to eat healthier. They are more likely to have a cooked meal with vegetables and other healthy foods. When the family eats whenever, without some sort of schedule, they may tend to eat more fast foods and junk 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 emotional reasons rather than because they are hungry or need nutrients.
- **Unresponsive feeding practices.** Adults have the responsibility to decide what healthy foods will be served and when. Children have the responsibility to choose if and how much to eat. Forcing children to eat when they are not hungry interferes with their ability to determine whether they are hungry or full.
- **Lack of sleep:** Poor sleep habits resulting in too little sleep may result in changes in metabolism which results in appetite changes and weight gain.
- **Too much “screen” or television time:** Excessive screen time is a problem for three reasons: 1) It is a sedentary activity, 2) Ads or commercials expose children to marketing of unhealthy foods, 3) Unnecessary snacking occurs while children watch television.
- **Lack of physical activity:** For many reasons, children are not as active as they should be. While many children consume too many calories from sources that contain little nutrition, they also burn fewer calories if they are less active.

## Sleep Guidelines

In 2016 the American Academy of Pediatrics (AAP) has issued a Statement of Endorsement supporting the American Academy of Sleep Medicine (AASM) guidelines. These guidelines outline recommended sleep duration for children from infants to teens. The consensus group recommends the following sleep hours for children ages 1 to 5:

- Children 1 to 2 years of age should sleep 11 to 14 hours per 24 hours (including naps) on a regular basis to promote optimal health.
- Children 3 to 5 years of age should sleep 10 to 13 hours per 24 hours (including naps) on a regular basis to promote optimal health.

## Physical Activity

While WIC is primarily a nutrition program, physical activity is an important part of health. In terms of overweight, it may be as important to set goals around increasing activity level as it is to change food habits. When talking to the caregiver, look for barriers to activity. Here are some examples:

- How much screen time does the child have each day? If the child is watching television or “screen time” for several hours per day then you may want to suggest limiting the time. Be prepared though to help the caregiver think of other ways to fill time for the child. Many caregivers use television or “screens” as a babysitter when they are overwhelmed or need time off.
- Consider asking the parent or caregiver about how much time the child spends confined to a car seat or playpen? Because a parent may be stressed for time or overwhelmed, may keep the child in a carrier or playpen as a form of relief. Suggest the caregiver think of other ways to get relief and allow the child to be more active.
  - Are there ways to make parts of the house more childproof?
  - What kinds of active games does the child like to play?

Playtime is important for a child’s development both physically and mentally. Talk with the parents about how important play is for the development of their child. Encourage caregivers to enjoy playing with their child.

*SELF-CHECK: PRACTICE YOUR KNOWLEDGE*

Fill in the blank to complete the following statement:

1. Obesity in children may be defined when BMI-for-Age are plotted on a growth chart. A weight for height equal to or above the \_\_\_\_ the percentile may indicate obesity.

Place a "T" (for True) and an "F" (for False) in the space to the left of the following statement.

2. \_\_\_\_\_ Inappropriate eating patterns and too little activity are the most common reasons why people become and remain overweight.

3. List four habits that are associated with overweight:

- a.
- b.
- c.
- d.

*ANSWERS*

1. A child whose BMI-for-age is *equal to or greater than the 95<sup>th</sup> percentile* may be obese.
2. True
3. Any four: use of a bottle after 14 months of age; drinking excess calories from beverages; consuming a high-fat diet or excess desserts; frequency of eating out; consumption of excessive portion sizes; poor meal structure or lack of meal structure; inconsistent availability of food, use of food as a reward or punishment.

## Section V: Iron and Lead

### Iron Deficiency

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.

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 (hemoglobin screening) that requires only a prick of the finger.

Iron-deficiency anemia is the most common nutritional deficiency in children from 6 months to 3 years of age. It is especially common among low-income preschool children.

### Cause

Iron deficiency is by far the most common cause of anemia in children. It may be caused by a diet low in iron, insufficient assimilation of iron from the diet, increased iron requirements due to growth or blood loss. Anemia can impair energy metabolism, temperature regulation, immune function and work performance. Even mild anemia may delay mental and motor development in children. The risk increases with the duration and severity of anemia, and early damages are unlikely to be reversed through later therapy.

A common cause of iron-deficiency anemia in the 1 to 2- year-old is due to too much milk intake. Milk is a poor source of dietary iron. However, some parents encourage their children to drink more milk, especially when the child isn't eating that much food. This combination of eating too little while drinking more 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.

### Treatment

Some ideas for parents and caregivers to consider changing with their child:

- Increase 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 beans and peas.
- Remember one way to increase the absorption of iron from plant sources (vegetables and grains) is to eat a vitamin C-rich food at the same meal. For example, serve orange slices or orange juice along with iron-fortified cereal at breakfast.
- Eat more WIC cereals for mealtime and snacks.
- Decrease the use of tea since it blocks iron absorption.
- Drink no more than 24 ounces of milk a day since milk is a poor source of iron and the calcium in milk blocks the absorption of iron in other foods.

- Limit iron-poor foods (soft drinks, candy, pastries, and snack foods).

### **Related Nutrition Risks:**

#### **201.01 Low Hematocrit\Low Hemoglobin Cutoff Value:**

At the time the blood test was taken, any value less the blood values listed below (%Hct. /Hgb gm.)

- C1 - <33.0 % Hct. Or <11.0 Hgb. gm.
- C2 - C4 - <33.0 %Hct. Or <11.1 Hgb. gm.
  
- Hemoglobin or Hematocrit levels low enough to necessitate a medical referral may be necessary. The greatest risk to children with low hemoglobin\hematocrit (mild and severe) is a delay in mental and motor development. Children with a low hemoglobin\hematocrit are less successful on specific cognitive processes than children with adequate iron stores.

#### **Your Role:**

- Approach parents and caregivers with concern and sensitivity when discussing healthy eating habits for children and recommend types of foods and quantities appropriate for their child's age.
- Consider the following:
  - Identify if the child is consuming an excessive amount of milk and snacking on or eating foods low in iron.
  - Discuss iron's importance and foods sources with the parent or caregiver.
  - Discuss the relationship between non-heme iron and the ability of vitamin C to enhance absorption if meats are not routinely eaten.
- If interested, assist the parent or caregiver in identifying ways to incorporate iron into their eating patterns, such as, eating more WIC iron-fortified cereals and protein foods.
- Offer information and resources about iron in foods and iron absorption for improved nutrition and health.



### **211.01+ Elevated Blood Lead Levels**

- High Risk (+) Requires a referral to a Registered Dietitian within 30 days.
- Venous blood lead level at or above 5 micrograms per deciliter with the past 12 months.

Lead poisoning occurs in children primarily because of their hand-to-mouth activities. The most common cause of lead poisoning is dust and chips from old paint. Other sources are dust, soil, jewelry and ceramics. In some cases, lead may be elevated in the water supply. The effects of lead poisoning are debilitating. Adequate nutrient intake is known to decrease children's susceptibility to the toxic effects of lead.

#### **Your Role:**

- Offer the discuss with the parent or caregiver ways to improve eating habits and reduce lead absorption.
  - Eating more foods high in calcium, iron and Vitamin C.
  - Eating regular meals and snacks. Lead is better absorbed on an empty stomach.
- If interested, discuss healthy eating habits for children and recommend types of foods and quantities appropriate for their child's age.
- Refer the parent or caregiver to lead treatment programs, if their child has an elevated blood lead level.

#### **Medical Conditions**

A medical condition is a nutrition risk if it causes, contributes to, or results from an inability to obtain adequate nutrition for growth and development of the child or the maintenance of health. Dental problems are one of the medical conditions.

All medical conditions require a referral to a Registered Dietitian within 30 days, except risk code 381 Oral Health Conditions.

There may be times when a child with dental problems should be referred to the Registered Dietitian. If the child is having chewing difficulty because of their oral health issues, or if the parent or caregiver has concerns about the child's ability to consume food in adequate quantity or quality you may want to refer them to a Registered Dietitian for a complete assessment and care plan.

*SELF-CHECK: PRACTICE YOUR KNOWLEDGE*

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 preschool-age children are:
  - a.
  - b.
  - c.
  
3. Which of the following contains the most iron? (Circle the letter of the correct answer.)
  - a. one egg
  - b. one slice whole wheat bread
  - c. ½ cup of “greens”
  - d. one ounce of a highly fortified cereal, e.g., a WIC cereal.

*ANSWERS*

1. 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).
  
2.
  - a. Limit daily milk intake to a maximum of 24 ounces.
  - b. Limit iron-poor foods (soft drinks, candy, pastries, and snack foods).
  - c. Increased 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. d

## Section VI: Oral Health in Children

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 help with chewing of food.

Most people will have two sets of teeth during their lifetime. The first set of teeth begins to form well before birth. 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 thirty-two permanent (or second teeth). Twenty of them replace the first teeth when the child is somewhere between 6 and 13 years old. Twelve additional teeth also erupt through the gums. The four wisdom teeth typically do not appear until early adulthood. The permanent teeth must last a lifetime, so consistent care is needed for them.

### Oral Disease and Tooth Decay

Oral disease, also known as tooth decay, has complicated causes with no single solution. Many factors affect a child's susceptibility, including the mom's or primary caregiver's oral health, the family's preventive practices, access to dental insurance and care close to home as well as community water fluoridation. Individual eating patterns, bacteria levels in the mouth and the child's overall health also matter, as well as, each child's history of oral disease. Previous tooth decay is a predictor of future dental problems.

Dental caries, commonly called "cavities," is the decay of the tooth. Dental caries are the most common 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.

The bacteria, *Streptococcus mutans*, cause tooth decay. People who don't take good care of their teeth 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. Parents and caregivers can spread the bacteria to their babies' mouth (such as 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, particularly the "sticky" type (i.e., sweets, dried fruits) that will stick to the teeth. It has been found that it's 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 (for example, liquid or sticky candy) that affects cavity production. The more often a person eats sugar, the more often acids form on the teeth.

Carbohydrates 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.

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 a bacterial infection.

### **Periodontal Disease**

Periodontal (gum) disease is another type of dental problem. This affects a large proportion of the world's population. Periodontal disease results in the destruction of both the connective tissues that attach the tooth to the bone and the bone itself.

One of the factors that is known to cause periodontal disease is bacterial plaque. Plaque acts as an irritant to the gums causing them to swell and bleed. If the plaque is not removed, it collects on the teeth below the gum line and develops pockets where infection can occur. It is this infection which leads to the eventual destruction of the supportive bone.

### **How to Control Bacteria**

Bacteria are always present in the mouth. Food particles left on the teeth after eating provide energy for bacteria to grow. Following these guidelines may prevent cavities:

#### **Proper cleaning of teeth:**

- Brush teeth thoroughly twice per day (morning and night) or as directed by a dentist or physician.
- 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 tartar. Tartar can't be brushed off but must be removed by the dentist.
- As soon as teeth appear, parents and caregivers should begin brushing the teeth by using fluoride toothpaste in an amount no more than a smear or the size of a grain of rice for babies and children younger than 3 years of age. Use a pea-size amount of fluoride toothpaste for children 3 to 6 years old.
- 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.

- Parents and caregivers should watch their child brush to be sure they use a pea-sized amount of toothpaste and always spit it out rather than swallow. They should help their child brush until they have good brushing skills.
- Floss teeth once a day. Flossing helps:
  - Dislodge food from between teeth
  - Helps remove plaque
  - Controls plaque build-up
  - Helps to prevent gum disease

### Healthy Habits:

- All children should visit the dentist by their first birthday to spot signs of dental problems early.
- Parents and caregivers should talk to the dentist about putting fluoride varnish on their child's teeth as soon as the first tooth appears or by their first birthday.
- Parents and caregivers should start brushing their child's teeth twice a day with a soft, small-bristled toothbrush and plain water as soon as they erupt.
- Wean children from the bottle and pacifier 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 leading to cavities.
- Avoid snacking on foods high in sugar, especially between meals. Avoid snacks that contain sugar and stick to the teeth, like gum drops.
- 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.
- Eat snacks that are not as likely to promote tooth decay. Select snack foods from the fruit, vegetable or meat. Vegetables 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.
- Ask your child's dentist to apply dental sealants when appropriate. Dental sealants can prevent cavities for many years. Applying dental sealants to the chewing surfaces of the back teeth prevent up to 80% of cavities.
- If the child hasn't yet seen a dentist, provide a dental referral for an appointment as soon as possible. If the family dentist is reluctant to see a young child, refer clients to a pediatric dentist.

### Common Questions and Answers:

**Q:** *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?*

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

## Dangers

Explain to the parents or caregivers the possible effects 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. You may be able to explain these with stories and pictures of children with early childhood caries.

## Dealing with the "Mess"

Since the biggest issue seems to be the mess, ask the parent or caregivers to brainstorm with ways to reduce the mess while using a cup. Most likely they *know* what they can do. If interested, offer a few suggestions: "Do you think you could give your child an empty cup to hold? Or a no spill cup? In that way he can get used to the feel of a cup before you put liquids in it." Or, relate stories of other success stories such as, "Last week I talked to a mom who's going through what you are. She put a plastic mat under the highchair, put a bib on her child, and gave him a cup. That way there was very little mess."

Parents or caregivers 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 or caregiver that the messy stage won't last forever. Keep in mind that your role is to offer suggestions and support.

Sometimes children are reluctant to give up the bottle because it is a means of comfort. You can offer to discuss ways the parent or caregiver can provide comfort replacement. Possible interventions include:

- Keep bottles out of sight and replace with bright, fun cups.
- Offer a favorite toy or soft blanket.
- Remember to give lots of love - more hugs, more playtime, more story time.

## Related Nutrition Risks:

### 381 Dental Problems

- Diagnosed dental problem or adequate documentation by CPA. Includes, but not limited to:
  - Presence of nursing or baby bottle tooth decay.
  - Smooth surface decay of maxillary anterior teeth and primary molars.
  - Tooth decay.
  - Periodontal disease
  - Tooth loss and/or ineffectively replaced teeth which impair ability to ingest food in adequate quantity or quality.

*SELF-CHECK: PRACTICE YOUR KNOWLEDGE*

Read through the following statements and put a check mark (✓) in front of those statements that are true for 1-7.

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 a baby is between 4 and 8 months old.
3. Which are proper guidelines for cleaning the teeth of a preschooler?
  - a. Brush the teeth at least twice a day.
  - b. As soon as teeth appear, children can use small amount of 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.
4. Plaque is the name given to the colonies of \_\_\_\_\_ that adhere to teeth.
5. Plaque and sugar form acid which attacks the \_\_\_\_\_ causing \_\_\_\_\_.
6. 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 the sugar is eaten.
  - d. All the above.

*ANSWERS*

1. True
2. True
3. a, b, d
4. Bacteria
5. Tooth, cavities
6. The correct answer is “**all the above.**” The amount, frequency, and form of the sugar eaten are factors in the relationship of sugar to dental disease

## Section VII: Social Indicators of Nutrition Risk

Some children are at nutritional risk based upon their living situations and/or the ability of the parent or caregiver to take care of themselves and their family. Situations where the WIC Program identifies children as being at nutritional risk based on social indicators include homelessness, migrancy, and inability of the parent or caregiver to make appropriate feeding decisions or recent placement in foster care. Generally, in situations where shelter is temporary, a person is less able to ensure that she has access to adequate nutritious food, food storage, and cooking facilities.

### Related nutrition risk

#### 801.01 Homelessness, any of the following:

- A child who lacks a fixed and regular nighttime residence.
- A child 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) designated 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.
- A public or private place not designed for, or ordinarily used as, a regular sleeping accommodation for human beings.

#### Background

Homeless individuals comprise a very vulnerable population with many special needs. Today's homeless population contains many women and children.

#### Your Role:

- Offer to discuss nutrition education to homeless persons after gaining an understanding of the participant's transient lifestyle.
- If interested, offer to discuss the parent or 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.

#### 802.01 Migrant

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



### **Background**

Migrant children have significantly higher rates of malnutrition and parasitic disease than among the general U.S. population.

#### **Your Role:**

- Offer parents and caregivers help with finding food resources in their community.
- If interested, discuss how to use WIC, what foods can be purchased through and how to use the foods.

### **901.01 Recipient of Abuse**

- Child abuse and/or neglect within the past 6 months.

Child abuse/neglect is defined as “any recent act or failure to act resulting in imminent risk or serious harm, death, serious physical or emotional harm, sexual abuse, or exploitation or an infant or child by a parent or caregiver.

- Refer to Michigan WIC Policy 6.02 Referrals for additional information.

### **Background**

Serious neglect and physical, emotional, or sexual abuse have short- and long-term physical, emotional, and functional consequences for children. Nutritional neglect is the most common cause of poor growth.

### **902.01 Woman or Infant/Child or Primary Caregiver with Limited Ability to Make Feeding Decisions and/or Prepare Food**

- Child whose primary caregiver is assessed to have a limited ability to make appropriate feeding decisions and/or prepare food. Examples include, but are not limited to, a child of a caregiver with the following:
  - Documentation or self-report of misuse of alcohol, use of illegal substances, use of marijuana, or misuse of prescription medications.
  - Mental illness, including clinical depression diagnosed, documented, or reported by a physician or psychologist or someone working under a physician’s order, or as self-reported by applicant/participant/caregiver.
  - Intellectual disability diagnosed, documented, or reported by a physician or psychologist or someone working under a physician’s order, or as self-reported by applicant/participant/caregiver.
  - Physically disabled to a degree which impairs ability to feed child or limits food preparation abilities;

### **Background**

Cognitive limitation in a parent or primary caregiver has been recognized as a risk for abuse and neglect. Maternal mental illnesses such as severe depression and maternal chemical dependency are strongly associated with abuse and neglect. Education, referrals and service coordination with WIC will aid the caregiver in developing skills, knowledge and/or assistance to properly care for a total dependent.

**Your Role:**

- Offer to discuss ways the caregiver can receive assistance from the WIC Program to meet their child's nutritional needs.
- If interested, provide education, referrals, and coordinate services to help the parent or caregiver develop the skills and locate the resources to assist her/him in caring for the child.

**903.01 Foster Care, any of the following:**

- Entering the foster care system during the previous 6 months.
- Moving from one foster home to another foster home during the previous 6 months.

**Background**

Foster children are among the most vulnerable individuals in the welfare system. They are sicker than homeless children and children living in the poorest sections of inner cities. Foster children have higher rates of chronic conditions such as asthma, diabetes and seizure disorders. They are also more likely to have birth defects, inadequate nutrition and growth retardation including short stature.

A high proportion of foster care children have suffered from neglect, abuse or abandonment and the health problems associated with these, entry into foster care or moving from one foster care home to another during the previous six months is a nutritional risk for certification in the WIC Program.

**Your Role:**

- Foster children have a high frequency of mental and physical problems that are often the result of abuse and neglect happening before foster care. They are often more likely to have inadequate nutrition.
- Offer to provide a baseline nutritional assessment of the child.
- If interested, provide nutrition education, as well as make referrals to resources to support the foster parent and child's ability to be healthy.

**904.01 Exposure to Environmental Tobacco Smoke**

Environmental tobacco smoke (ETS) exposure is defined (for WIC eligibility purposes) as exposure to smoke from tobacco products inside the home. (Also known as passive, secondhand or involuntary smoke).

- Exposure to smoke from tobacco products inside the home or car.
  - Note: ETS is also known as passive, secondhand, or involuntary smoke.

**Background**

ETS is a mixture of the smoke given off by a burning cigarette, pipe, or cigar (sidestream smoke), and smoke exhaled by smokers (mainstream smoke). ETS is a mixture of about

## Section VII: Social Indicators of Nutritional Need

---

85% sidestream and 15% mainstream smoke made up of over 4,000 chemicals, including Polycyclic Aromatic Hydrocarbons (PAHs) and carbon monoxide.

ETS is a known human carcinogen. Prenatal or postnatal ETS exposure is related to numerous adverse health outcomes among infants and children, including sudden infant death syndrome (SIDS), upper respiratory infections, periodontal disease, increased severity of asthma/wheezing, metabolic syndrome, decreased cognitive function, lower birth weight and smaller head circumference.

### **Your Role:**

- Offer to discuss environmental tobacco smoke exposure.
- If interested, provide information about the specific risks involved with secondhand smoke.
- Offer to discuss ways that the parent or caregiver can protect the child from secondhand smoke (i.e. smoke outside; don't smoke in the car, etc.).

*SELF-CHECK: PRACTICE YOUR KNOWLEDGE*

1. Put a check (✓) next to the nutrition risks for children 2 years and older.

- a.  Anemia
- b.  Underweight
- c.  Overweight
- d.  Failure to Meet Dietary Guidelines
- e.  Pica
- f.  Substance Abuse
- g.  Complications of Delivery
- h.  Medical Conditions
- i.  Prematurity
- j.  Low birth weight
- k.  Short stature
- l.  Inadequate or Potentially Inadequate Growth
- m.  Migrancy

Place a "T" for true or an "F" for false in the space to the left of each of the following statements:

- 2.  Children who are at the 85<sup>th</sup> percentile BMI-for-age are considered high risk.
- 3.  Children who are below the 5<sup>th</sup> percentile BMI-for-age are not considered high risk.

*ANSWERS*

- 1. a, b, c, d, e, h, k, l, and m should be checked.
- 2. False.
- 3. False. This is a high-risk condition.

## Section VIII: Case Studies

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

### 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 mom tells you that Mary is a very picky eater and will hardly eat anything, including vegetables. Mary's mom says that the only way she can get Mary to eat her vegetables is to offer her favorite dessert if she eats all the vegetables on her plate.

#### Discussion topics with Mary's mom may include:

- Reassure Mary's mom that Mary's growth is *normal* and that it is common for children to be picky about their food.
- Ask permission with Mary's mom to discuss why Mary may not eat anything. If her mom agrees, offer the following information:
  - After a child reaches one year of age, changes in her food intake occur. The child's rate of growth slows, and her appetite decreases or is erratic.
  - 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.
  - Mary's serving size is different from an adult's serving size.
  - *Continue* to offer vegetables, prepare them in a variety of ways, and set an example for Mary by eating and enjoying vegetables.
  - Reassure her that children often need to be exposed to new foods many times before they decide to eat them.
- Ask Mary's mom to if she would like you to brainstorm with her, ways to make vegetables appealing for Mary. Ideas may include:
  - Try serving raw vegetables with low-fat dips, or offer a vegetable main dish, such as broccoli cheese casserole.
  - 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).

#### Offer to discuss with Mary's mom:

- Why rewarding Mary with dessert may not be a good idea.
  - It may be encouraging Mary to overeat.
  - It also may be reinforcing the idea that vegetables are bad and sweets are good.
- Snacks times throughout the day should be established and consistent. If Mary snacks throughout the day, she may not be hungry at mealtime.

**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 her to Registered Dietitian for further assessment.

### 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 consists of noodles, hamburger patties, and carrots. The children are each given a glass of milk. Mrs. Pollard knows from experience that Sandra doesn't like cooked carrots, but she does like noodles and milk and will generally eat hamburger. Toward the end of the meal, Sandra hasn't eaten much. She has eaten some noodles and has drank 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. If Mrs. Pollard described this situation to you in WIC clinic the next day, what would you say to her?

#### **The following are discussion topics with Mrs. Pollard:**

- You could affirm to Mrs. Pollard that she did well by including at least two foods in the meal she knew Sandra would eat, and that she didn't limit the menu to only those things Sandra likes.
- You may want to point out that Sandra may not be hungry.
- Affirm with Mrs. Pollard that she did well by not offering to fix Sandra something else for dinner when she decided not to eat the hamburger and carrots.
- Encourage Mr. Pollard that if Sandra is done with her dinner, that's fine, but that she should be asked to stay at the table to enjoy mealtime with the rest of the family.

### Case Study #3

A father tells you that his 3-year-old son Jason only eats sweets. Below are discussion ideas share with Jason's father:

- Encourage the father that he it is good that he realizes eating sweets to not a nutritious eating pattern. Ask the father if he would like your help to brainstorm ways to change Jason's eating patterns.
  - Suggest that parents are responsible for what types of foods are in the home.
  - Suggest the father determine whether he is using sweets as a reward with his son.
  - Suggest substituting other foods for desserts, such as peanut butter, fruit, or yogurt, or other nutritious foods Jason likes and make them available.

### Case Study #4

Mr. and Mrs. Eastman come into your WIC clinic for their nutrition education appointment. They tell you that they have been trying to follow your advice about serving well-balanced meals, but their 2-year-old, Jennifer, is so active that she won't sit down at the table to eat meals. She ends up missing a lot of meals.

Ideas for discussion are:

- Affirm with the Eastman's that they are doing a good job by serving nutritious meals and it can be difficult with an active 2-year-old.
- Ask permission to help the Eastman's brainstorm ideas to get Jennifer to come to the table at mealtime, at least for a while. Ideas may include:
  - A brief rest period before meals might help Jennifer calm down, (e.g., reading or looking at a book).
  - Reduce distractions (such as TV or loud music) that may be making it hard for Jennifer to settle down.
  - Provide snacks at times that are not *too close* to mealtime.

## Training Activity

Once you have completed this module, please take the Child Nutrition Module post- test.