

Module F: Child Nutrition

Table of Contents

Overview.....	3
Growth & Development.....	4
Preventing Cavities in Children.....	6
Feeding Children.....	7
MyPlate Recommendations.....	11
Nutrition-Related Problems & Solutions.....	15
Hazards.....	19
Indicators of Nutritional Need.....	22
Progress Check.....	23
Learning Activities.....	25
1. Stages of Early Childhood.....	26
2. Discussion of Child Nutrition Issues.....	28
3. Observations.....	30
4. Case Studies.....	32
5. Role Plays.....	38
Anemia Cut Off Values	40

Overview

Introduction

This module will help you understand the nutritional needs of children 1 to 5 years of age.

Learning Objectives

After completing this module the WIC staff member will be able to:

- Describe normal growth and development of children 1 to 5 years old.
- List factors influencing the growth and appetite for toddlers and pre-school children.
- Describe feeding guidelines for children, including self-feeding, division of responsibility, and food safety.
- Describe common nutrition-related problems for children and identify solutions to these problems.
- Describe choking, lead poisoning, and poison hazards for children and identify prevention or solutions for each.
- Identify indicators of nutritional need and specify conditions for child's WIC eligibility.
- In a case study situation, assess a child's growth pattern, biochemical, clinical and dietary status.
- Use role-play to interview the child's caregiver to assess the child's nutritional status then prioritize their needs and provide individual education.

Growth & Development

Growth	Growth is an increase in the physical size of the body.
Development	Development is the process of learning new skills or maturing.
Normal Growth & Development	Growth is fastest during infancy. A child's growth slows down and appetite decreases at around one year of age. The child's growth is steady between 1 and 5 years.
What Influences Growth?	Growth is fastest during infancy. A child's growth is influenced by: Genetics Hormones Environment Behavior
Stages	Children go through several stages of development as they grow. These stages involve physical, mental, and social changes. The chart on the next page lists and describes average child development from 1 to 5 years. Each child has their own normal pattern of growth. <i>Remember: Children rarely develop at the same pace. Use the chart as a guide only.</i>
Learning Activity	Learning Activity 1: Stages of Early Childhood, found at the end of this module will help you learn more about the stages of childhood.

Continued on next page

Growth & Development (continued)

Stages of Childhood for 1-5 Years of Age

Age	Description
12-15 Months	<ul style="list-style-type: none"> • Walks alone • Begins to climb stairs and to run • Starts pretending • Sings • Says several words • Follows simple commands • Gets first molars • Able to use a spoon and cup
15-18 Months	<ul style="list-style-type: none"> • Walks backwards and in circles • Dances • Scribbles • Says 10-20 words • Makes first sentence • Likes to use fingers to eat
18-24 Months	<ul style="list-style-type: none"> • Jumps • Follows 2-step commands • Draws circles and lines • Says 20-50 words • Makes 3 word sentences • Uses cup well • Has favorite foods
24-36 Months	<ul style="list-style-type: none"> • Gets last primary teeth • Feeds self with spills • Uses fork
36-48 Months	<ul style="list-style-type: none"> • Able to feed self-more easily • Able to chew most foods
48-60 Months	<ul style="list-style-type: none"> • Likes to talk while eating • Influenced by peers • Likes to help prepare foods • Able to use a child-safe knife

Preventing Cavities in Children

1st Dental Appointment

The American Dental Association (ADA) recommendations:

- A child's first visit to the dentist should occur by their first birthday.
- Visits to the dentist help with early detection of potential problems, and
- Help children become comfortable and hopefully have less fear as they grow older.
- After all primary teeth emerge your dentist may apply topical fluoride or the doctor may prescribe fluoride tablets (usually at 2 ½ years).

Fluoride Benefits

The benefits of fluoride include:

- Hardens the tooth enamel.
- Provides a barrier against plaque and harmful sugars.
- Helps to prevent and reduce cavities.
- Healthy baby teeth prepare for healthy permanent teeth.

Fluoride Risks

Excess fluoride can lead to the following problems:

- Mottled teeth (white spotted, yellow or brown stained and sometimes crumbly teeth).
- Fluoridated water with excess toothpaste intake can cause pitting of tooth enamel.
- Affect tooth development in permanent teeth.

Brushing and Flossing

Parents should ensure the child spits the tooth paste out.

- Brushing at least twice a day
- Flossing helps maintain healthy gums
- Toddlers only need a small amount, the size of a pea

Set a Good Example

Parents need to teach children good oral health habits.

- Reinforce daily brushing and flossing
- Provide healthy snacks
- Limit the amount of sweets offered
- Dilute Juice with water

- Say NO to sodas

Feeding Children

Development Influences Feeding

A child's eating behaviors are influenced by the development of:

- Teeth
- Coordination skills
- Independent behaviors

Feeding Guidelines

When feeding children, parents/caregivers should be aware of:

- Self-feeding
- Division of responsibility
- Food safety

Self-Feeding

As children grow and mature, their coordination and feeding skills improve. They go from eating with their fingers to eating with utensils and drinking from a cup.

To support self-feeding:

- Let the child regulate her/his food intake
- Model appropriate eating behaviors
- Provide healthy meals and snacks
- Provide appropriate eating utensils
- Establish eating times and locations(s)

Division of Responsibility

Parent(s)/caregiver(s) and children have different roles (jobs) in feeding. The chart on the following pages lists the responsibilities of the child and the parent/caregiver.

Background Information Food Safety

We cannot tell if food is safe just by the way it looks or smells. Therefore, people who prepare food for children need to be careful when shopping and preparing foods.

To ensure food is safe for children, follow the Food Safety Guidelines in Module A of this Task.

*Continued on next page***Feeding Children** *(continued)***Division of Responsibility in Feeding Children**

Child's Role:	
1. Decide how much to eat.	<p>A child's food intake will generally match her/his needs. The amount of food a child eats is up to the child.</p>
2. Decide what to eat from the foods served.	<p>Young children like:</p> <ul style="list-style-type: none"> • Simple meals with food separated from each other • Finger foods • Foods with bright colors and varied shapes <p>Young children often do NOT like:</p> <ul style="list-style-type: none"> • Highly seasoned food • New foods
3. Decide if they will eat.	<p>A young child should eat only if they want to eat. They should never be forced to eat.</p>

Continued on next page

Feeding Children *(continued)***Division of Responsibility in Feeding Children** *(continued)***Parent/Caregiver's Role:**

1. Decide what food is served.

Buy foods from the 5 food groups (Fruits, Vegetables, Grains, Milk, and Protein).

Prepare meals containing choices from each of the 5 food groups.

Make and offer nutritious snacks.

- Prepare low fat snacks and include whole grains and fruits and vegetables, such as fresh fruit, whole grain cereal, crackers, bread, yogurt, cheese, cottage cheese, milk, or a hard-boiled egg.
- Offer snacks 1 ½ to 2 hours before or after a meal. Young children need to eat every 2-3 hours.
- Provide small portion sizes of food to prevent affecting their appetite at the next meal.
- Do NOT give foods such as soda, chips, fruit drinks, or candy as snacks. These have little nutritional value.

Give the child food they can handle

- Offer meals and snacks in child-size portions
- Cut food into bite-size pieces.
- Cool hot foods before serving.
- Use salt, sugar, pepper and spices in moderation.
- Do NOT offer foods which are round, hard, or could easily slide down a child's throat and cause choking.

2. Decide when food is served.

Meals and snacks should be offered on a regular time schedule. This gives the child a sense of security.

Time meals and snacks so the child eats every 2-3 hours.

Insist the child be present at meals:

- Expect all family members to be present for meals, when possible.
- Eating together as a family encourages talking and sharing.
- This also teaches children to pay attention to their food and eat.

Continued on next page

Feeding Children *(continued)***Division of Responsibility in Feeding Children** *(continued)***Parent/Caregiver's Role:**

3. Decide where food is served.

Model appropriate eating behaviors.

- Focus attention on the food being eaten
- Sit down while eating
- Eat in only 1 or 2 places in the house

Do NOT:

- Have books or toys at the table
- Watch TV while eating
- Force the child to “clean their plate”
- Bribe or reward a child to eat
- Use food as a reward

Reinforce appropriate eating behaviors and ignore inappropriate behaviors.

- Pay attention to, recognize, and praise appropriate eating behaviors.
- Ignore negative behavior.
- Do NOT make special meals for a child if they do not like what is served. Many children are a “picky eater” at some point. A child will not starve.
- Parents should:
 - Offer one new food at a time.
 - Let children help with meal preparation.
 - Ask all adults at the table to be role models and try the offered foods.

Make family meal times pleasant.

- Provide comfortable seating for meals. For young children, use a high chair or sturdy chair allowing the child to sit at the proper height to the table.
- Provide easy-to-use utensils such as:
 - Spoons and forks with short, straight handles and blunt tips.
 - Small, wide-mouthed cups with wide handles, plastic bowls.
 - Dishes with low edges to help the child scoop up food.
 - Divided plates with compartments to keep foods separated.
 - Avoid having arguments or scolding during meals.

Feeding Recommendations

What to Eat

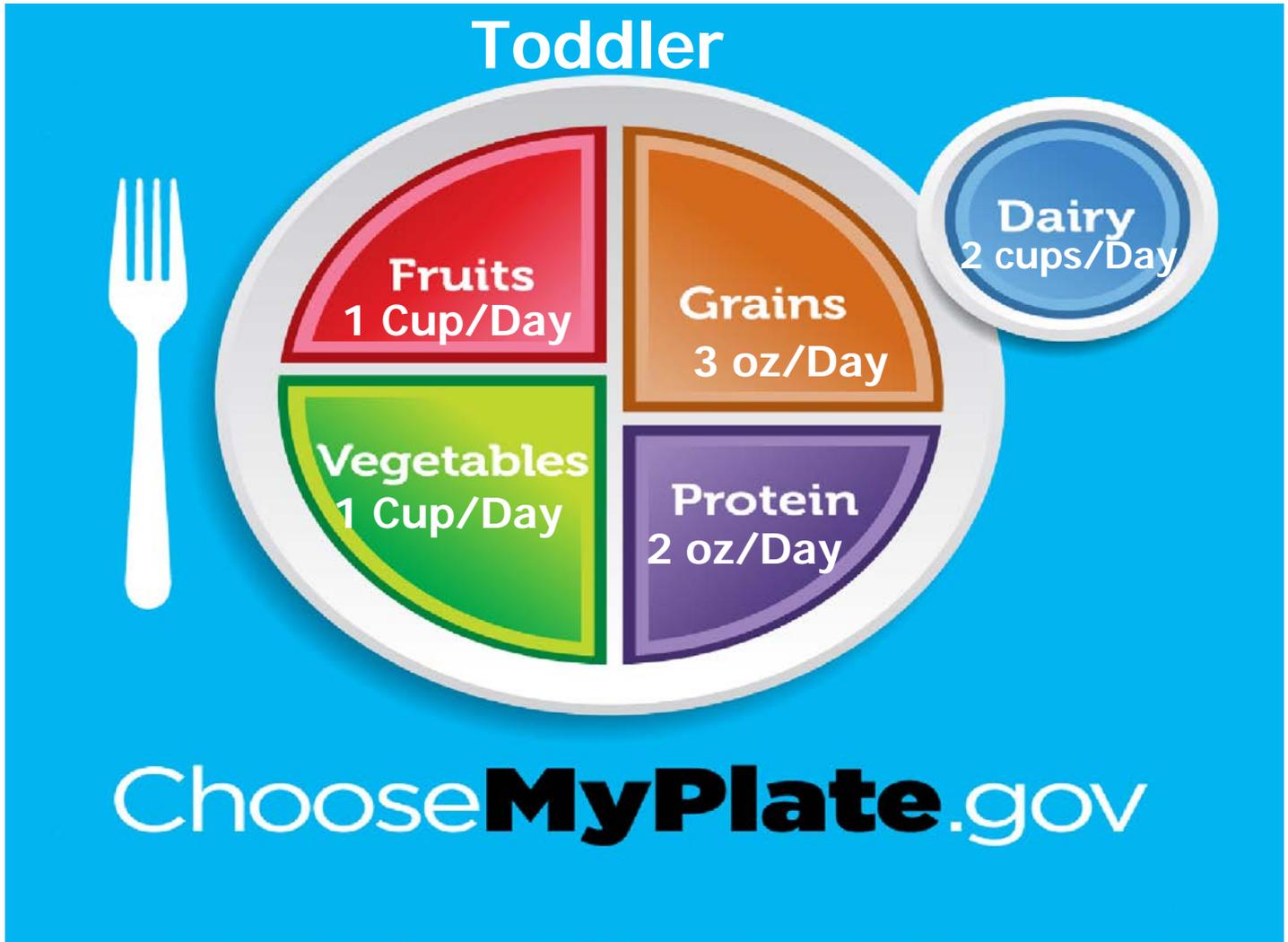
A child will usually take in the right amount of food, but they will not know which foods are best for good health.

Parents and caregivers should offer children a variety of nutritious foods in balanced meals and snacks.

Children who are allowed to graze all day long often have a hard time figuring out when they are truly hungry. This is key to maintain a healthy weight in childhood and later in life. A structured meal and snack schedule is one solution. You offer the meals and snacks at the same times each day, and your children can decide what they want to eat and how much.

MyPlate

Use the MyPlate recommendations to show parents/caregivers what and how much of foods children should be offered ages 1-5. The MyPlate for Toddler's is on the following pages.



Serving Sizes

- Dairy**
- 2 cups cottage cheese
- 8 oz yogurt
- 1 1/2 oz cheese
- 1 cup milk
- Grains:**
- 1 slice bread
- 1/2 cup rice, pasta,
or oatmeal
- 6 inch tortilla
- Protein**
- 1 oz meat, poultry
or fish
- 1/4 cup dry beans
- 1 Tbsp peanut butter
- 1 egg
- 1/4 cup tofu

Vary Your Veggies!

Focus on Fruits!

Half Your Grains Whole!

Go Lean With Protein!

Get Calcium-Rich Foods!

Division of Responsibility

- Toddlers are responsible for:
 - How Much - How much, if any, to take
 - What - Choosing, of the foods offered, what they would like to eat
- Parents and Caregivers are responsible for:
 - What is Offered - Offering healthy foods
 - When Offered - Providing regularly scheduled meals and snack times
 - Where Offered - Offering a pleasant, calm and safe meal setting

Good Choices

- Let your toddler's appetite be the guide for how much to offer
- Whole milk is recommended until your toddler is 2 years old
- Serve milk and juice with meals. Satisfy thirst at other times with water
- NOT Recommended is caffeine-containing drinks (ice tea, sodas, coffee)
- NOT Recommended is sugary or sweetened drinks (sodas, Gatorade, Powerade, Vitamin Water, Hi-C juices, Capri Sun, etc.)

Tips & Tricks

- Let your toddler feed him/herself, switching back and forth between using silverware and using fingers
- Let your toddler learn about foods by touching, smelling, and tasting them. Even if they do not eat it right away.
- Offer new foods at the beginning of meals when toddler is most hungry
- Toddlers tend to go through "food jags" - picking a favorite food and wanting to eat it all the time. It's okay if the food is healthy and soon they will be on to new foods.

We gratefully acknowledge Ellyn Satter's permission to use her work.

Ask your health care provider if you have any problems or questions and always check with your provider before taking any medicine or changing your exercise plan.

Continue on next page

Picky Eaters

Is a picky eater born or made?

- Some toddlers are very sensitive to taste, texture and smell. Which means they can enjoy a food a lot or gag when eating it.
- Parents who are fussy about their own foods will often pass this on to their toddlers.
- Parents who pressure their children to eat can turn their toddlers away from certain foods

What to do about it?

- Let your toddler pick from the foods available at meal time
- DO NOT limit the menu to only food your toddler will eat
- DO NOT withhold dessert or bribe to force him/her to eat
- Let your toddler eat as much or little at meal and snack time and remind them no food will be offered until the next meal or snack time
- Many times toddlers eat poorly because they drink their food rather than eat it.
- TRUST your toddler to eat. Toddlers have the built-in-ability to eat and will eventually come up with a balanced diet.

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Nutrition-Related Problems & Solutions

Nutrition-Related Problems

Several Nutrition-related problems are common in children. There include:

- Anemia
- Constipation
- Overweight
- Short stature
- Underweight

Become familiar with these problems so you can help parents/caregivers identify solutions.

Chart of Nutrition-Related Problems & Solutions

The chart on the following pages lists some common nutrition-related problems for children and possible solutions.

Continue on next page

Nutrition-Related Problems & Solutions *(continued)*

Common Problems & Solutions

Problem	Solution (s)
<p>Anemia (low iron levels in blood) may cause problems such as:</p> <ul style="list-style-type: none"> • Poor appetite • Tiredness • Weakness • Developmental delays • Learning Problems, and growth retardation. <p><i>Also known as Iron Deficiency</i></p> <p><i>A hemoglobin (Hgb) <11.0 (1- <2 years old), <11.1 (2-5 years old) & hematocrit (Hct) of less than 33% indicates anemia in a child</i></p>	<p>Refer to RD/HCP</p> <ul style="list-style-type: none"> • Offer 2-3 iron rich foods (such as meats, beans, and iron fortified cereals) daily, along with vitamin C rich foods (such as orange juice, tomatoes, and broccoli). Vitamin C helps the body with iron absorption. • Cook foods in cast iron cookware • Avoid excess intake of dairy products since they are low in iron and they interfere with the body’s absorption of iron. • If a child still uses a bottle, wean as soon as possible. <p><i>Please refer to the Montana WIC Program Anemia Cut-Off Values at the end of this module for more information.</i></p>
<p>Constipation (less often than usual or difficult bowel movements) may be due to:</p> <ul style="list-style-type: none"> • Being tired • Anxiety • Medications • Inappropriate diet • Lack of physical activity 	<ul style="list-style-type: none"> • Add more fiber to the diet, by offering whole grain breads/cereals, fruits, dried beans/peas, and vegetables. • Give the child plenty of fluids, especially water. • Avoid foods high in sugar or low in fiber. • Encourage the child to play actively. <ul style="list-style-type: none"> • Have regular meal times. • Help the child use the toilet regularly. <ul style="list-style-type: none"> • Do NOT force bowel movements.

Continued on next page

Nutrition-Related Problems & Solutions (*continued*)**Common Problems & Solutions**

Problem	Solution (s)
<p>Overweight ($\geq 95^{\text{th}}$ percentile) may be due to:</p> <ul style="list-style-type: none"> • <24 months, weight for length or weight for height <ul style="list-style-type: none"> • >24 months, BMI for age <ul style="list-style-type: none"> • Overeating • Lack of exercise • Social and/or emotional factors <ul style="list-style-type: none"> • Genetics 	<ul style="list-style-type: none"> • Have child eat nutritiously: <ul style="list-style-type: none"> ○ Offer low-fat milk products (nonfat or low fat milk for children ≥ 2 years old). ○ Offer low-fat protein foods. ○ Offer high-fiber fruits and vegetables. ○ Limit desserts, offer fresh fruit. ○ Offer nutritious, low-fat snacks. ○ Offer water for thirst/avoid sweetened drinks and limit juice. ○ Limit fast foods/fried foods. ○ If eating “fast foods”, choose low-fat foods and limit quantities. ○ Limit milk products to recommended amounts. ○ If child still uses a bottle, wean as soon as possible. • Encourage child to be physically active. • Limit activities such as TV watching and video game playing. • Use food appropriately. <ul style="list-style-type: none"> ○ Schedule snack and meal times. ○ Let child decide how much to eat. ○ Have child feed self when ready. ○ Do NOT put child on low-calorie diet. • Do NOT focus on child’s looks or pressure child to be thin. • Do NOT expect child to lose weight. • Never use foods as a reward or punishment.

Continued on next page

Nutrition-Related Problems & Solutions *(continued)*

Common Problems & Solutions

Problem	Solution (s)
<p>Short Stature (length/height for age: ≤ 2.3rd percentile Birth to <24 months ≤ 5th percentile 2 to 5 years)</p>	<ul style="list-style-type: none"> • Be aware of parent’s stature (if parents are relatively short, child may also be short). • Check growth measurements for at least 1 year. • Encourage good nutrition.
<p>Underweight (≤ 2.3rd percentile Birth to <24 months ≤ 5th percentile 2 to 5 years)</p> <ul style="list-style-type: none"> • <24 months weight for length or weight for height <ul style="list-style-type: none"> • >24 months, BMI for age 	<p>Refer to the RD/HCP if child’s weight for length/height or BMI for age is ≤ 5th percentile.</p> <ul style="list-style-type: none"> • Encourage an appropriate and nutritious diet for the child. • Add calorie-dense foods to the diet. • Encourage frequent meals and snacks where appropriate.

Hazards

Hazards There are several hazards which can cause serious problems in children. These hazards include:

- Choking
- Lead poisoning
- Other hazards

Hazards Chart The following chart lists these hazards and ways to prevent or avoid them.

Hazards & Suggestions for Prevention

Hazard	Suggestions for Prevention
<p>Choking Especially among children 1-2 years old</p>	<ul style="list-style-type: none"> • Cut foods in to bite-sized pieces. • Cut hot dogs and meat sticks into small pieces. • Cut round foods such as grapes and cherries in half and remove seeds. • Have children sit while they eat. • Remove bones from meats. <p>DO NOT:</p> <ul style="list-style-type: none"> • Give hard foods such as raw carrots, nuts, popcorn and hard candy • Give sticky foods such as peanut butter or soft bread • Give foods such as marshmallows (they can swell in the throat) • Allow children to run or play while eating

Continued on next page

Hazards *(continued)*

Hazards & Suggestions for Prevention *(continued)*

Hazard	Suggestions for Prevention
<p>Lead Poisoning (breathing or ingesting lead)</p>	<p>Refer to RD/HCP if child’s blood lead level is ≥ 5 mcg/dl within the past 12 months.</p> <p>Do:</p> <ul style="list-style-type: none"> • Avoid hobbies using lead (such as stained glass work). • Have children wash hands before eating. • Mop floors often to keep them dust-free. • Take off shoes before entering the house. • Give your child enough calcium, iron, and protein and avoid high fat foods (this helps prevent lead absorption). <p>Do NOT:</p> <ul style="list-style-type: none"> • Put cribs, high chairs, and/or beds near peeling or chipping paint areas; especially paint in old houses. • Sand, burn or scrape paint contain lead where children are present. • Use home remedies or cosmetics containing lead (such as Azarcon, Greta, Pay-loo-a, Alkohl or Kohl). • Use hand-made, imported dishes or unglazed pottery for serving, preparing or storing food. • Store food in plastic grocery produce bags or bread wrappers turned inside out (writing on these bags may contain lead).

Continued on next page

Hazards *(continued)***Hazards & Suggestions for Prevention** *(continued)*

Hazard	Suggestions for Prevention
<p>Other</p> <p>Children are naturally curious and like to explore their world. Parents and caregivers can help to keep them safe.</p>	<p>Do:</p> <ul style="list-style-type: none"> • Lock all cabinets containing medicines, household cleaning agents, pesticides and/or any other chemicals. • Keep sharp items (such as knives, scissors, and razor blades) out of reach of children. • To prevent drowning: <ul style="list-style-type: none"> ○ Keep toilet bowls closed ○ Empty buckets of water ○ Lock gates to swimming pools ○ Never leave children alone in a bathtub or near lakes, rivers, or swimming pools • Cover electrical outlets with appropriate covers. • Take cords or strings out of jacket or sweater hoods (they can catch on playground equipment and strangle the child). • Buckle the child into a properly installed child seat every time they ride in a car. • Call the Poison Control Center if your child touches, tastes, or breathes anything harmful. Call 911 for a life-threatening accident/emergency. <p>Do NOT:</p> <ul style="list-style-type: none"> • Hang anything around the child's neck (such as a string holding a pacifier). • Allow children to play with ropes, dog leashes, cords from window blinds, and/or other strangulation hazards. • Give the child iron supplements unless prescribed by a physician. Iron supplement toxicity is one of the most common forms of accidental poisoning for children. Store iron supplements in a child-proof container out of children's reach.

Indicators of Nutritional Need

Indicators of Nutritional Need

The Montana WIC State Plan (WSP) provides policy and procedures on charting “indicators of nutritional need” for participants.

Please refer to Policy 5.2 Certification Procedures, Section V. Risk Codes.

In the WSP under attachments there is a Nutrition Risk Code Table and High Risk Participant Referrals. These can be referred to for category/priority, code number, description of each code, and referral to whom for high risks.

Learning Activity

Learning Activities 2 through 5, found at the end of this module, will help you learn more about providing nutrition education to the parent(s)/caregiver(s) of a child.

Progress Check

1. Name at least 3 factors effecting the growth and development of a young child.

2. Match the ages to the stages of development.

Stage	Age (months)
___ Says first sentence	A. 12-15
___ Uses fork	B. 15-18
___ Follows 2-step commands	C. 18-24
___ Begins to walk	D. 24-36
___ Able to chew most foods	E. 36-48
___ Influenced by peers	F. 48-60

3. Complete the chart below with the servings needed each day for toddlers.

Food Group	Servings Needed Each Day
Fruits	
Vegetables	
Grains	
Protein	
Dairy	

4. Match the nutrition-related problem with a possible solution.

Problem	Solution
___ Anemia	A. Do NOT give a bottle with milk at bedtime.
___ Constipation	B. Give foods high in iron and Vitamin C.
___ Dental Problems	C. Upon participant’s agreement, refer to RD for follow-up.
___ Overweight	D. Increase the amount of fiber in the diet.
___ Short Stature	E. Increase physical activity.
___ Underweight	F. Check parents’ stature.

5. Mark the following as "TRUE" or "FALSE".

- The parent/caregiver is responsible for the amount of food the child eats.
- The child is responsible for whether or not they eat.
- The parent/caregiver should encourage the child to "clean her/his plate".
- Children usually need to eat every 3-5 hours.

- Grapes are a suitable snack for young children if they are cut and their seeds removed.

- Each meal should contain choices from each of the food groups.

6. Put a check mark next to each item which may result in a child getting lead poisoning.

- Licking lead-based paint off of a windowsill.
- Drinking out of a hand-painted cup.
- Cooking with a cast-iron skillet.
- Eating fresh fruits and vegetables.
- Breathing the dust created from sanding painted objects.

7. Identify the following indicator of nutritional need for a child. Write an "A" for anthropometric, "B" for biochemical, "C" for clinical, and "D" for dietary.

- Lactose intolerance
- Overweight
- Very low hemoglobin/hematocrit
- Low vitamin C intake
- Lead poisoning

Learning Activities

The following activities are included and are recommended for interactive learning:

- Learning Activity 1: Stages of Early Childhood
- Learning Activity 2: Discussion of Child Nutrition Issues
- Learning Activity 3: Observations
- Learning Activity 4: Case Studies
- Learning Activity 5: Role Plays

Activity 1: Stages of Early Childhood

Learning Objectives

After completing this activity, the WIC staff member will be able to describe the normal growth and development stages of children 1-5 years of age.

Instructions

1. Make arrangements with your supervisor or mentor to observe several toddlers and preschoolers in the waiting room area of your WIC site.
2. Observe these toddlers and preschoolers as they play and interact with others.
3. Using your observations and what you have learned, fill in the chart on the next page. You may also wish to use the chart on page 5 to guide you.
4. When you are finished, discuss your findings with your mentor or supervisor.

Activity 1: Stages of Early Childhood

Age	Description
1-2 years	
2-3 Years	
3-4 Years	
4-5 Years	

Activity 2: Discussion of Child Nutrition Issues

Learning Objectives

After completing this activity, the WIC staff member will be familiar with some of the child nutrition issues in WIC.

Instructions

1. Have your supervisor or mentor arrange for you to spend about 1 hour with an experienced coworker.
2. Ask your coworker to discuss her/his experiences with child nutrition issues at WIC.
3. Ask such questions as:
 - *What child nutrition problems seem to be most common among the participants you see?*
 - *What are some common indicators of nutritional need for children?*
 - *What are some difficulties you have had in assessing a child's nutritional status?*
 - *What suggestions do you have to prepare new coworkers for addressing the needs of children?*
4. Write down your notes on the next page.
5. When you are finished, discuss your findings with your supervisor.

Activity 2: Discussion of Child Nutrition Issues

Notes:

Activity 3: Observations

Learning Objectives

After completing this activity, the WIC staff member will be able to explain how to:

- Interview the parent(s)/caregiver(s) of a child
- Assess a child's nutritional status
- Prioritize needs
- Provide individual education, taking the parent's concerns into consideration.

Instructions

1. Have your mentor or supervisor arrange for you to observe several individual nutrition education sessions with a parent/caregiver of a child.
2. Observe your coworker as they:
 - Assesses the child's needs/problems
 - Prioritizes these needs/problems
 - Provides individual education, taking the parent's concerns into consideration
3. Write down your notes on the next page.
4. Discuss your observations with your mentor or supervisor.
5. Write down your notes on the next page.

Activity 3: Observations

Notes:

Activity 4: Case Studies

Learning Objectives

After completing this activity, the WIC staff member will be able to:

- Assess a child's growth pattern
- Assess the child's biochemical, clinical, and dietary status.

Instructions

1. Read each of the 5 case studies on the following pages.
2. Identify the child's anthropometric, biochemical, clinical, and dietary status.
3. Complete the assessment for each case study.
4. Talk to your supervisor or mentor if you need help.
5. When you are finished, discuss your responses with your supervisor.

Activity 4: Case Studies

Case Study 1:

Roberto is 18 months old. The following information is available about him:

- He was 8 pounds at birth
- He is now 35 inches long
- He now weighs 29 pounds
- His hemoglobin is 11.6 g/dL
- He is no longer being breastfed
- His diet includes iron-fortified formula from a bottle and some solid foods.
- He also gets soda in a bottle
- He has some tooth decay

Assessment:

What are his **anthropometric** risks?

What are his **biochemical** risks?

What are his **clinical** risks?

What are his **dietary** risks?

Identify any referrals or handouts to offer the participant.

Activity 4: Case Studies

Case Study 2:

Victor is 4 years old. The following information is available about him:

- He was 5 pounds at birth
- He is now 41 inches long
- He now weighs 33.5 pounds
- His hemoglobin is 10.1 g/dL
- He drinks about 8 ounces of milk at every meal and a total of about 24 ounces between meals.
- He eats some vegetables, but no iron rich protein foods or fruit

Assessment:

What are his **anthropometric** risks?

What are his **biochemical** risks?

What are his **clinical** risks?

What are his **dietary** risks?

Identify any referrals or handouts to offer the participant.

Activity 4: Case Studies

Case Study 3:

Maya is 3 years old. The following information is available about her:

- She was 7 pounds, 6 ounces at birth
- She is now 36 inches long
- She now weighs 42 pounds
- Her hemoglobin is 12g/dL
- She often has chips as a snack.
- Her mother says she often allows Maya to watch TV while she takes care of the household.

Assessment:

What are her **anthropometric** risks?

What are her **biochemical** risks?

What are her **clinical** risks?

What are her **dietary** risks?

Identify any referrals or handouts to offer the participant.

Activity 4: Case Studies

Case Study 4:

Maggie is 2 years and 3 months old. The following information is available about her:

- She was 8 pounds at birth
- She is now 34 inches long
- She now weighs 30 pounds
- Her hemoglobin is 13.2 g/dL
- She has been eating solid foods since she turned 7 months old.
- She has been living in a homeless shelter for the last 2 months.

Assessment:

What are her **anthropometric** risks?

What are her **biochemical** risks?

What are her **clinical** risks?

What are her **dietary** risks?

Identify any referrals or handouts to offer the participant.

Activity 4: Case Studies

Case Study 5:

Carlie is 13 months old. The following information is available about her:

- She was 7 pounds, 2 ounces at birth
- She is now 29 inches long
- She now weighs 22.5 pounds
- Her hemoglobin is 11.8 g/dL
- She is being fed iron fortified formula.
- She also eats solid foods such as hot dogs and popcorn.
- Her mother says, "I usually don't cut up her food since she already has a lot of teeth."

Assessment:

What are her **anthropometric** risks?

What are her **biochemical** risks?

What are her **clinical** risks?

What are her **dietary** risks?

Identify any referrals or handouts to offer the participant.

Activity 6: Role Play

Learning Objectives

After completing this activity the WIC staff member will be able to:

- Interview the parent/caregiver of a child.
- Assess a child's nutritional status.
- Prioritize the child's needs.
- Provide individual education to the parent/caregiver of a child, taking the parent's concerns into consideration.

Background

A role play is a scenario in which 2 or more people act out a scene as though it was "real life". Props are not needed but may be helpful.

Instructions

1. Ask you mentor, supervisor, or co-worker to role play any 3 of the 5 roles described on the following page.
2. Using the information you have learned about child nutrition, act out the role of a WIC staff member in a session with these 3 parents/caregivers.
3. Mentor/supervisor/co-worker: Using the role plays as your guide, act out the role of the participant. Try to be as realistic as possible.
4. After each session, ask your co-worker to tell you what they noticed. Make sure to ask for your strengths as well as weaknesses.

Activity 6: Role Plays

5 Participants

- Role Play A Elizabeth Moore's foster daughter Bethany is 15 months old. She weighs 19 pounds and is 30.5 inches long. She has a hemoglobin value of 11 g/dl and a hematocrit of 34%. She was breastfed until she was placed with a foster care family 2 months ago.
- Role Play B Linda Nguyen's son Andrew is 23 months old. Andrew's weight is at the 8th percentile for length. He has hemoglobin of 10.8 g/dl and a hematocrit of 34%. He is no longer being breastfed. He eats a lot of white rice, few vegetables, and does not eat much protein. He drinks non-fat milk and some fruit juices.
- Role Play C Rosemarie Garcia's daughter Michelle is 3 years old. Michelle's weight is at the 50th percentile for height. Michelle often has constipation.
- Role Play D Robert Cole's son Jacob is 4 years old. Jacob is a rather "picky eater." His father says "he doesn't like vegetables."
- Role Play E Patricia Cox's daughter Patrice is 2 years old. Patrice refuses to drink any milk.

Hemoglobin/Hematocrit Cut-Off Values		
At sea-level, non-smoking		
Age	HGB (<g/dL)	HCT (<%)
Infant		
• 6 to 12 mos.	11.0	33
Child		
• 1 to < 2 yrs.	11.0	33
• > 2 to 5 yrs.	11.1	33
Non-Pregnant		
• 12 to < 15 yrs.	11.8	36
• 15 to < 18 yrs.	12.0	36
• > 18 yrs.	12.0	36
Pregnant		
• 1 st Trimester	11.0	33
• 2 nd Trimester	10.5	32
• 3 rd Trimester	11.0	33

INSTRUCTIONS: To use this form use the “at sea-level, non-smoking” values for HGB and HCT initially based on the participants category and age. If the clinic location is at a higher elevation, add the adjustment value from the “adjustment for altitude” table (upper right). If the participant smokes, add the adjustment value from the “adjustment for smoking status” table (lower right).

Montana WIC Program
Anemia Cut-Off Values
 1998 CDC Guidelines



Adjustment for Altitude
 Long-term residency at a high altitude (greater than or equal to 3,000 feet) causes a generalized upward shift in hemoglobin concentration and hematocrit values. The cutoff values should be adjusted for this factor.

Altitude (feet)	HGB (<g/dL)	HCT (<%)
0-2999 ft	-	-
3000-3999 ft	+0.2	+0.5
4000-4999 ft	+0.3	+1.0
5000-5999 ft	+0.5	+1.5
6000-6999 ft	+0.7	+2.0