

**Nutrition and Physical Activity in Child Care
Training Module
Version 5
(Last updated 3/1/13)**

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NOTE TO TRAINER

This Module presents information about nutrition and physical activity in the child care environment. The Toolkit contains a Trainer’s Guide to leading training sessions, PowerPoint slides, and materials for participants’ packets.

For more information about using the NTI materials, please read “Guidelines for Using the NTI Curriculum Materials,” available in the “Curriculum” section of the NTI Resources Website (accessed by entering your NTI username and password at <http://sakai.unc.edu>).

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LEARNING OBJECTIVES

After reading this Module, Trainers will be able to do the following:

- Critically review the content of a written nutrition plan developed by a qualified nutritionist/registered dietician in collaboration with the child care staff,
- Describe good institutional food management practices including safe selection, storage, and preparation of food; handwashing; and cleaning and sanitizing;
- Describe nutritional needs for healthy growth and development in infants and children,
- Describe how child care caregivers/teachers can support breastfeeding for infants in their care,
- Evaluate child care menus, considering age and development of children, nutritional content and variety of foods, cultural or ethnic differences, number of hours children are on site, and the Child and Adult Care Food Program (CACFP) requirements;
- Identify areas where the child care health consultant (CCHC) can advocate for quality nutrition programs for infants and children in child care,
- Identify the nutrition education needs of children, caregivers/teachers, parents/guardians, and the community;
- Describe ways to provide a safe and pleasant physical and emotional environment at mealtime,
- List benefits of regular physical activity for children,
- Critically review the content of a written physical activity policy developed by a qualified child care nutritionist/registered dietician and the child care staff,
- Describe how to provide a safe play environment for children,
- List reasons to limit screen viewing time for infants and young children,
- List strategies to promote lifelong healthy eating habits and physical activity in children,
- Describe how caregivers/teachers can participate in the CACFP, and
- Identify the physical activity education needs of children, caregivers/teachers, parents/guardians, and the community.

INTRODUCTION: THE ROLE OF THE CCHC

Eating healthy foods and being active are important behaviors throughout life. They are key factors for growth and development of infants and children, as well as vital in preventing obesity. Caregivers/teachers can play a unique role by giving children the opportunity to develop lifelong healthy eating habits at an early age. The prevalence of obesity among preschool-aged children in the U.S. is at an all-time high, (CDC, 2009); therefore the influence of the child care setting has never been more important.

The purpose of this Module is to empower the child care health consultant (CCHC) with the information and skills needed to assist child care staff and families in providing children the nutrients and energy they need to grow healthy and strong, opportunities for appropriate and regular physical activity, and lifelong healthy eating and physical activity habits.

Nutrition

Nutrition and feeding are fundamental and required activities in every child care facility. *Caring for Our Children (CFOC*, 3rd ed., 2011) notes that “nourishing and attractive food is the cornerstone for health, growth, and development as well as developmentally appropriate learning experiences” (p. 152).^{4.2.0.1} Since growth and development of children are more rapid during the first few years of life than at any other time, the child's home and the facility together must provide food adequate in nutrients to meet the metabolic growth and energy needs of each child.^{4.2.0.1}

In the area of child care nutrition, three of the following elements are critically important:

1. *The food and beverages served must be safe.* All food and beverages, including human milk, should be stored, prepared and presented in a safe and sanitary way (ADA, 2011). Even a small amount of improperly stored or prepared food can cause serious infection to children.
2. *The food served must meet children's nutritional needs.* The CACFP¹ Meal Pattern^{4.2.0.3} and *MyPlate* (2011)^{Appendix Q, Appendix R} resources, both administered by the U.S. Department of Agriculture, provide guidelines for nutritious meal and snack planning. (These guidelines can be accessed via the Internet. The appropriate resources are listed in “Where to Find More Information” at the end of this section.) Because children can ingest only small servings of food at a time, they require “nutrient dense” food to be healthy, rather than foods and beverages that are high in sugar and fat with few nutrients. The CACFP Meal Pattern guidelines are accessible here:
http://www.fns.usda.gov/cnd/care/programbasics/meals/meal_patterns.htm.

¹ The CACFP, administered by the U.S. Department of Agriculture, support good nutrition and quality child care in eligible child care homes and centers by providing reimbursement for meals served that meet certain nutrition standards. Facilities follow a meal pattern and can claim up to two meals and one snack per day for reimbursement. Meals served to children ages birth through twelve years may be claimed by all participating facilities.

3. *The nutrition program must promote a healthy eating environment.* Encourage children to try new foods and familiar foods prepared in new ways. Children who eat a variety of foods at a young age may continue to eat a wide variety of foods and, in doing so, are more likely to meet their nutritional needs. By making meals fun, colorful, and participatory, the caregiver/teacher contributes to the current and future health of children in care.

Physical Activity

Participating in physical activity or active play are important for children to develop gross motor skills and self-confidence and to provide the foundation for developing healthy eating habits during childhood and beyond (McWilliams, 2010; NASPE, 2009). Because the majority of young children in the U.S. are enrolled in child care, it is an important setting to provide children of all abilities with opportunities for physical activity and to develop life-long habits (McWilliams et al., 2010).

State licensing and regulations may include physical activity standards for child care facilities. Among states there is a considerable variation in regulations related to physical activity (Cradock et al., 2010). A review of state regulations to promote physical activity standards for child care facilities found that, on average, state regulations fully addressed about one-third of CFOC standards in centers and about one quarter for family child care homes (Cradock et al., 2010).

Obesity Prevention

Obesity affects even the very young U.S. population. Among preschool children aged 2-5, obesity increased from 5.0% to 10.4% between 1976 -1980 and 2007-2008 (Ogden & Carroll, 2010). An estimated 20% of children 2 – 5 year old are overweight or obese (Ogden et al., 2010). An estimated three quarters of children less than six years of age participate in organized child care making it an important opportunity for obesity prevention. The information presented in this curriculum about providing healthy meals and snacks, supporting breastfeeding, promoting physical activity and limiting screen time are all strategies that can prevent childhood obesity.

CARING FOR OUR CHILDREN NATIONAL STANDARDS (3rd ed., 2011)

Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Early Care and Education Programs (CFOC) is a set of 686 attainable standards that are intended for use by health care professionals, trainers, regulators, caregivers/teachers, academics and researchers, parents/guardians, and others “who work toward the goal of ensuring that all children from day one have the opportunity to grow and develop appropriately, to thrive in healthy and safe environments, and to develop healthy and safe behaviors that will last a lifetime” (*CFOC* 3rd ed., 2011, p. xxi). These standards, supported by the Maternal and Child Health Bureau, were developed by the American Academy of Pediatrics, the American Public Health Association, and the National Resource Center for Health and Safety in Child Care and Early Education.

This Module will highlight the *Caring for Our Children (CFOC) national guidelines* (3rd ed., 2011) for nutrition and physical activity in out-of-home child care facilities and describe ways the CCHC can help the child care staff adhere to sound food management practices.

A subset of *CFOC* standards (*Preventing Childhood Obesity in Early Care and Education Programs [PCO, 2010]*) describing evidence-based best practices in nutrition, physical activity and screen time for early care and education programs is available here:

http://nrckids.org/CFOC3/PDFVersion/preventing_obesity.pdf. Since its publication, new research was developed and currently appears in the *CFOC* (3rd Ed., 2011). Please refer to the following webpage to note differences between the two publications:

http://nrckids.org/CFOC3/PREVENTING_OBESITY/ComparisonPCOandCFOC3.html.

The following is a list of standards relating to nutrition and physical activity in child care, along with a short description and the page number in *CFOC* on which the standard can be found. All listed standards are referenced throughout this Module.

[1.6.0.2](#) - Frequency of Child Care Health Consultation Visits, p. 36

Delineates difference between frequency of visits for certain early childhood programs and the needs of the program that should be met by those visits.

[2.1.1.1](#) - Written Daily Activity Plan and Statement of Principles, p. 49

Describes the objectives of a daily activity plan and the five elements of the statement of principles.

[2.1.3.3](#) - Selection of Equipment for Three- to Five-Year-Olds, p. 61

Outlines the importance of selecting developmentally appropriate play and learning materials.

[2.2.0.2](#) - Limiting Infant/Toddler Time in Crib, High Chair, Car Seat, Etc., p. 66

Highlights the need to keep infants and toddlers in least restrictive environment at all times.

[2.2.0.3](#) - Limiting Screen Time – Media, Computer Time, p. 66

States that media viewing and computer use in early care and education settings should not be permitted for children younger than two years and not more than thirty minutes for children two years and older.

[3.1.3.1](#) - Active Opportunities for Physical Activity, p. 90

Provides best practices for how often physical activity opportunities should be provided to children birth to six years each day, and the total time allotted for outdoor play and moderate to vigorous indoor or outdoor physical activity based on age.

[3.1.3.2](#) - Playing Outdoors, p. 93

States that all children should play outdoors when conditions do not pose a safety or health risk.

[3.2.2.1](#) - Situations that Require Hand Hygiene, p. 110

Lists situations which require proper hand hygiene.

[3.2.2.2](#) - Handwashing Procedure, p. 111

Delineates eight steps for maintaining proper hand hygiene for children and staff members.

[3.2.2.4](#) - Training and Monitoring for Hand Hygiene, p. 112

Articulates that programs ensure that staff members and children who are developmentally able to learn personal hygiene are instructed in, and monitored on performing hand hygiene as specified in Standard [3.2.2.2](#).

[3.3.0.1](#) - Routine Cleaning, Sanitizing, and Disinfecting, p. 116

Outlines the importance of keeping objects and surfaces in a child care setting as clean and free of pathogens as possible.

[3.3.0.2](#) – Cleaning and Sanitizing Toys, p. 117

States that toys that cannot be cleaned and sanitized should not be used. Also states that toys that children have placed in their mouths or that are otherwise contaminated by body secretion or excretion should be set aside until they are cleaned and sanitized.

[3.3.0.3](#) – Cleaning and Sanitizing Objects Intended for the Mouth, p. 118

States that thermometers, pacifiers, teething toys, and similar objects should be cleaned, and reusable parts should be sanitized between uses.

[3.6.3.1](#) - Medication Administration, p. 141

Describes kinds of medications to be administered in child care facilities and best practices for proper documentation.

[4.2.0.1](#) - Written Nutrition Plan, p. 152

Outlines personnel involved in creating nutrition plan, as well as content and modifications that should be included for infants/toddlers and food allergies.

[4.2.0.3](#) - Use of USDA – CACFP Guidelines, p. 153

States that all meals and snacks and their preparation, service, and storage should meet the requirements for meals of the child care component of the U.S. Department of Agriculture (USDA), Child and Adult Care Food Program (CACFP), and the 7 Code of Federal Regulations (CFR) Part 226.20 (1,5).

[4.2.0.4](#) - Categories of Foods, p. 155

Describes seven food groups, aligned with USDA and *CFOC* guidelines, from which food should be chosen and offered to children in care.

[4.2.0.5](#) - Meal and Snack Patterns, p. 156

Outlines six variations on meal and snack patterns for child care facilities.

[4.2.0.6](#) – Availability of Drinking Water, p. 157

States that clean, sanitary drinking water should be readily available, in indoor and outdoor areas, throughout the day.

[4.2.0.7](#) - 100% Fruit Juice, p. 157

Describes that the facility should serve only full-strength (100%) pasteurized fruit juice or full-strength fruit juice diluted with water from a cup to children twelve months of age or older.

[4.2.0.8](#) - Feeding Plans and Dietary Modifications, p. 158

Outlines importance of written history for all children entering facility, including special nutrition needs and eight components of written dietary modifications.

[4.2.0.9](#) - Written Menus and Introduction of New Foods, p. 159

Outlines timeline for development of facility menu and proper procedure for the introduction of new foods for children under 18 months.

[4.3.1.1](#) - General Plan for Feeding Infants, p. 162

Highlights minimum content for infant feeding plan including CACFP meal and snack patterns, support of breastfeeding and introduction of solid foods.

[4.3.1.2](#) - Feeding Infants on Cue by a Consistent Caregiver/Teacher, p. 164

States that caregivers/teachers should feed infants on the infant's cue unless the parent/guardian and the child's primary care provider give written instructions otherwise.

[4.3.1.3](#) - Preparing, Feeding and Storing Human Milk, p. 165

Details best practices on the use of human milk in child care facilities including acceptable bottles, temperatures related to varying storage locations and the transition from bottle to cup.

[4.3.1.5](#) - Preparing, Feeding and Storing Infant Formula, p. 167

Details best practices on the use of infant formula in child care facilities including the mixing of formula with other foods, proper documentation and labeling and use of specialized formula for infants with food allergies.

[4.3.1.7](#) - Feeding Cow's Milk, p. 169

States that the facility should not serve cow's milk to infants from birth to twelve months of age, unless provided with a written exception and direction from the child's primary care provider and parents/guardians.

[4.3.1.8](#) - Techniques for Bottle Feeding, p. 170

Outlines five key components of bottle feeding and the number of infants that staff can feed at one time.

[4.3.1.9](#) - Warming Bottles and Infant Foods, p. 171

Outlines proper procedure and various tools for warming infant foods and bottles including microwave ovens, cold, running water and slow cookers.

[4.3.1.10](#) - Cleaning and Sanitizing Equipment Used for Bottle Feeding, p. 172

Highlights that bottles, bottle caps, nipples and other equipment used for bottle feeding should not be reused without first being cleaned and sanitized by washing in a dishwasher or by washing, rinsing, and boiling them for one minute.

[4.3.1.11](#) - Introduction of Age-Appropriate Solid Foods to Infants, p. 172

Outlines that a plan to introduce age-appropriate solid foods (complementary foods) to infants should be made in consultation with the child's parent/guardian and primary care provider.

[4.3.1.12](#) - Feeding Age-Appropriate Solid Foods to Infants, p. 173

Provides proper methods of serving, storing and discarding solid foods for infants.

[4.3.2.1](#) - Meal and Snack Patterns for Toddlers and Preschoolers, p. 174

Directs the reader to relevant CACFP meal and snack patterns on the web.

[4.3.2.2](#) - Serving Size for Toddlers and Preschoolers, p. 174

Describes that the facility should serve toddlers and preschoolers small-sized, age-appropriate portions and should permit children to have one or more additional servings of the nutrition foods as needed to meet the caloric needs of the individual child.

[4.4.0.2](#) - Use of Nutritionist/Registered Dietician, p. 176

Highlights that a local nutritionist/registered dietician, knowledgeable of the specific needs of infants and children, should work with the on-site food service expert and the architect or engineer on the design of the parts of the facility involved in food service.

[4.5.0.1](#) - Developmentally Appropriate Seating and Utensils for Meals, p. 177

States that all furniture and eating utensils that a child care facility uses should make it possible for children to eat at their best skill level and to increase their eating skill.

[4.5.0.2](#) - Tableware and Feeding Utensils, p. 178

Delineates eight requirements for tableware and utensils in a child care facility.

[4.5.0.3](#) - Activities that Are Incompatible with Eating, p. 178

Recommends that caregivers/teachers should ensure that children do not eat when standing, walking, running, playing, lying down, watching TV, playing on the computer, or riding in vehicles.

[4.5.0.4](#) - Socialization During Meals, p. 179

Explains importance of family style meal service, modeling by caregivers/teachers, and encouragement of interaction and growth of vocabulary during meals.

[4.5.0.6](#) - Adult Supervision of Children Who Are Learning to Feed Themselves, p. 180

Explains importance of children in mid-infancy who are learning to feed themselves who should be supervised by an adult seated within arm's reach of them at all times while they are being fed. Children over twelve months of age who can feed themselves should be supervised by an adult who is seated at the same table or within arm's reach of the child's highchair or feeding table.

[4.5.0.7](#) - Participation of Older Children and Staff in Mealtime Activities, p. 180

States that both older children and staff should be actively involved in serving food and other mealtime activities, such as setting and cleaning the table. Staff should supervise and assist children with appropriate handwashing procedures before and after meals and sanitizing of eating surfaces and utensils to prevent cross contamination.

[4.5.0.8](#) - Experience with Familiar and New Foods, p. 181

Explains that, in consultation with the family and the nutritionist/registered dietician, caregivers/teachers should offer children familiar foods that are typical of the child's culture and religious preferences and

should also introduce a variety of healthful foods that may not be familiar, but meet a child's nutritional needs.

[4.5.0.10](#) - Foods that Are Choking Hazards, p. 181

Provides extensive list of foods that are associated with young children's (under the age of four years) choking incidents.

[4.5.0.11](#) - Prohibited Uses of Food, p. 182

States that caregivers/teachers should not force or bribe children to eat nor use food as a reward or punishment.

[4.6.0.1](#) - Selection and Preparation of Food Brought From Home, p. 182

Explains that parents/guardians may provide meals for the child upon written agreement between the parent/guardian and the staff.

[4.6.0.2](#) - Nutritional Quality of Food Brought From Home, p. 183

States that the facility should provide parents/guardians with written guidelines that articulate that they have established a comprehensive plan to meet the nutritional requirements of the children in the facility's care. It should also suggest ways parents/guardians can assist the facility in meeting these guidelines.

[4.7.0.1](#) - Nutrition Learning Experiences for Children, p. 183

Details that facility should have a nutrition plan that integrates the introduction of food and feeding experiences with facility activities and home feeding. The plan should include opportunities for children to develop the knowledge and skills necessary to make appropriate food choices.

[4.7.0.2](#) - Nutrition Education for Parents/Caregivers, p. 185

States that parents/guardians should be informed of nutrition learning activities provided by the facility including, but not limited to, formal training under the guidance of a nutritionist/registered dietician and informal "teachable moments" that will occur throughout the year.

[4.8.0.2](#) - Design of Food Service Equipment, p. 186

Outlines that food service equipment should be designed, installed, operated, and maintained according to the manufacturer's instructions and in a way that meets the performance, health, and safety standards of national and local authorities.

[4.8.0.3](#) - Maintenance of Food Service Surfaces and Equipment, p. 186

Highlights level of quality, appearance, cleanliness, and sanitization for all kitchen surfaces and equipment.

[4.8.0.4](#) - Food Preparation Sinks, p. 187

States that the sink used for food preparation should not be used for handwashing or any other purpose.

[4.8.0.5](#) - Handwashing Sink Separate From Food Zones, p. 187

States that programs provide a separate handwashing sink in the food preparation area of the facility. It should have an eight-inch-high splash guard or have eighteen inches of space between the handwashing sink and any open food zones (such as preparation tables and food sink).

[4.9.0.1](#) - Compliance with U.S. Food and Drug Administration Food Sanitation Standards, State and Local Rules, p. 188

Highlights the importance of following FDA model food sanitation standards and affirms the jurisdiction of the local health authority.

[4.9.0.2](#) - Staff Restricted from Food Preparation and Handling, p. 188

Articulates that anyone who has signs or symptoms of illness, or who potentially or actually is infected with bacteria, viruses, or parasites that can be carried in food, should be excluded from food preparation and handling.

[4.9.0.3](#) - Precautions for a Safe Food Supply, p. 189

States that all foods stored, prepared, or served should be safe for human consumption by observation and smell. A list of fifteen precautions to be observed for a safe food supply are included.

[4.9.0.4](#) – Leftovers, p. 191

This standard provides best practices for how to handle food leftover from meal service and unserved perishable food, and the proper storage of hot foods.

[4.9.0.5](#) - Preparation for Storage of Food in the Refrigerator, p. 191

Details that all food stored in the refrigerator should be tightly covered, wrapped, or otherwise protected from direct contact with other food.

[4.9.0.6](#) - Storage of Foods Not Requiring Refrigeration, p. 192

States that foods not requiring refrigeration should be stored at least six inches above the floor in clean, dry, well-ventilated storerooms or other approved areas. Food products should be stored in such a way (such as in nonporous containers off the floor) as to prevent insects and rodents from entering the products.

[4.9.0.7](#) - Storage of Dry Bulk Foods, p. 192

Outlines the proper containers for dry bulk foods and the fact that all bulk food containers should be labeled and dated, and placed out of children's reach.

[4.9.0.9](#) - Cleaning Food Areas and Equipment, p. 193

States that all food preparation and service areas and equipment should be cleaned and sanitized after each use.

[4.9.0.11](#) - Dishwashing in Centers, p. 193

States that centers should provide a three-compartment dishwashing area with dual integral drain boards or approved dishwasher capable of sanitizing multi-use utensils.

[4.9.0.12](#) - Dishwashing in Small and Large Family Child Care Homes, p. 194

States that small and large family child care homes should provide a three-compartment dishwasher and at least a two-compartment sink to use in conjunction with the dishwasher.

[4.9.0.13](#) - Method for Washing Dishes by Hand, p. 194

Outlines proper procedure for clearing, cleaning and sanitizing dishes by hand, using both detergent and sanitizing solutions.

[4.10.0.1](#) - Approved Off-Site Food Services, p. 195

Describes that Food provided by a central kitchen or vendor to off-site locations be obtained from sources approved and inspected by the local health authority.

[4.10.0.2](#) - Food Safety During Transport, p. 195

Outlines proper containers for transport of food and temperatures at which food should be maintained during transport.

[5.2.1.14](#) - Water Heating Devices and Temperatures Allowed, p. 216

Highlights devices connected to facility water supply system and proper temperature for sinks and dishwashers.

[5.2.9.1](#) - Use and Storage of Toxic Substances, p. 228

Outlines labeling, storage and documentation for a range of toxic substances.

[5.3.1.3](#) - Size of Furniture, p. 238

States that furniture should be durable and child-sized or adapted for children's use. Tables should be between waist and mid-chest level of the intended child-user and allow the child's feet to rest on a firm surface while seated for eating.

[5.3.1.8](#) - High Chair Requirements, p. 241

Highlights proper components of a safe, adequate high chair including locking tray, safety strap and availability of manufacturer's instructions.

[5.7.0.2](#) - Removal of Hazards From Outdoor Areas, p. 259

States that all outdoor activity areas should be maintained in a clean and safe condition.

[6.1.0.1](#) - Size and Location of Outdoor Play Area, p. 265

Details the exceptions to the space requirements for play areas and the age ranges which require separate areas of play.

[6.1.0.2](#) - Size and Requirements of Indoor Play Area, p. 265

Lists the four requirements for an indoor play area to be used in place of an outdoor play area.

[6.1.0.8](#) - Enclosures for Outdoor Play Areas, p. 268

Highlights the importance of using a fence or gate to enclose outdoor play areas and the unique requirements of each form of barrier.

[6.2.1.1](#) - Play Equipment Requirements, p. 269

Directs the reader to Consumer Product Safety Commission (CPSC) and ASTM International (ASTM) regulations for playground equipment. Also highlights the benefits of working with a Certified Playground Safety Inspector (CPSI).

[6.2.5.1](#) - Inspection of Indoor and Outdoor Play Areas and Equipment, p. 277

States that the indoor and outdoor play areas and equipment should be inspected daily for a variety of safety hazards.

[9.2.3.1](#) - Policies and Practices that Promote Physical Activity, p. 353

Articulates that the facility should have written policies on the promotion of physical activity and the removal of potential barriers to physical activity participation; lists components of this policy and appropriate clothing for both children and caregivers/teachers.

[9.2.3.9](#) - Written Policy on Use of Medications, p. 358

Highlights proper medication policy, including nine major required components and steps to take for documenting medication administration.

[9.2.3.11](#) - Food and Nutrition Service Policies and Plans, p. 361

Outlines twelve components of proper food and nutrition policies and plans and the role of a nutritionist/registered dietician.

[9.2.3.12](#) - Infant Feeding Policy, p. 361

Outlines twelve components of an infant feeding policy and the importance that each policy be crafted for each individual infant.

[10.3.4.3](#) - Support for Consultants to Provide Technical Assistance to Facilities, p. 403

Recommends that state agencies should encourage the arrangement and coordination of and the fiscal support for consultants from the local community to provide technical assistant for program development and maintenance.

[Appendix C](#) - Nutritionist Specialist, Registered Dietician, Licensed Nutritionist, Consultant, and Food Service Staff Qualifications, p. 427

Delineates the level of professional responsibility, and education and experience for each title.

[Appendix J](#) - Selecting an Appropriate Sanitizer or Disinfectant, p. 440

Presents the difference between a sanitizer and a disinfectant, and how to safely prepare bleach solutions.

[Appendix Q](#) - Getting Started with *MyPlate*, p. 459

Provides an introduction to *MyPlate*.

[Appendix R](#) - choose MyPlate: 10 tips to a great plate, p. 460

Provides ten tips to making food choices for a healthy lifestyle.

[Appendix JJ](#) - Our Child Care Center Supports Breastfeeding, p. 501

Provides a flyer that a child care center could use to communicate how they support breastfeeding mothers.

WHAT THE CCHC SHOULD KNOW: THE NUTRITION PLAN

Every child care facility should have a written nutrition plan. [4.2.0.1](#), [9.2.3.11](#)

In keeping with the three key elements of child care nutrition, the child care program's written nutrition plan should include the following topics: [9.2.3.11](#)

- kitchen layout,
- food budget,
- food procurement and storage, preparation, and service;
- menu and meal planning,
- kitchen and meal services staffing,
- nutrition education for children, staff, and parents/guardians;
- emergency preparedness for nutrition services,
- food brought from home including food brought for celebrations,
- age-appropriate portion sizes, eating utensils and tableware; and
- promotion of breastfeeding and provision of community resources to support breastfeeding mothers.

The CCHC should review the facility's nutrition plan and assist in its development if necessary. The CCHC should also be aware of available child care nutritionist/registered dietitian and other nutrition services in the area for consultation. The child care nutritionist/registered dietitian for a particular community or area may be located by contacting one of the following agencies:

- state health department (ask for the *designated State Nutrition Director*),
- state office of the Child and Adult Care Food Program (CACFP),
- state Extension Services, or
- nutritionists in local public health agencies and WIC programs.

Child Care Nutrition Specialist

A child care nutritionist/registered dietitian should have expertise in the following areas [10.3.4.3](#).

- infant and child development,
- child food service,
- nutrition and nutrition education methods.

The child care nutritionist/registered dietitian supplies guidance and consultation to the child care program director and in-service training to the facility's staff. [9.2.3.11](#), [10.3.4.3](#), [4.4.0.2](#), [APPENDIX C](#)

Child care programs should be able to consult with a child care nutritionist/registered dietitian on a regular basis to ensure that meals and snacks are age appropriate, with appropriate serving sizes, and nutritionally adequate; that foods are selected and prepared in ways that are nutritious and appealing; that food handling is safe and sanitary; and that children are engaged in effective nutrition learning experiences (ADA, 2011). *CFOC* states that this should consultation occur as

needed based on the needs of the program for training, support, and monitoring of the child health and safety needs. [1.6.0.2](#)

State and County Child Care Regulatory Agencies

The nutrition plan should also be reviewed by a state, county or local child care regulatory agency to ensure that it meets any nutrition or food service requirements that are part of licensing. For example, some states/counties have special requirements regarding foods brought from home, the handling of food allergies and preferences (e.g., vegetarian diet), and training of personnel for food service in child care.

Action Items for the CCHC

The CCHC should

- periodically review the nutrition plan with the child care staff, and assist with its development, if necessary; and
- be aware of available nutritionists/registered dieticians with expertise in child care and other nutrition services in the area for consultation.

WHAT THE CCHC SHOULD KNOW: REQUIREMENTS FOR FOOD SAFETY

Food served in child care centers and family child care homes should be stored, prepared, and presented in a safe and sanitary environment (ADA, 2011). Minimum food standards are often required by state law and seek to prevent food borne illness. [4.9.0.1](#)

Safe Selection/Storage/Preparation of Food

Selecting Food

The caregiver/teacher is responsible for selecting safe, clean and wholesome food, with recognition of parental inputs. The following standards and suggestions can be used to help the child care staff provide the most nutritious and appropriate foods for children.

- All food stored, prepared, or served should be safe for human consumption by observation and smell. [4.9.0.3](#) Foods selected must be clean and wholesome, appropriate for the age and developmental abilities of the children, and unlikely to cause harm in any way (e.g., choking, allergic reaction).
- Foods from dented, rusted, bulging or leaking cans; and food from cans without labels should not be used. [4.9.0.3](#)
- Meat should be government-inspected or approved by the local health authority. [4.9.0.3](#)
- Human milk should be handled as outlined later in this Module and commercial infant formula as per label instructions.
- For children older than 12 months who are not on human milk or prescribed formula, pasteurized and Grade A milk products (preferably fortified with Vitamins A and D) should be used. Best practice indicates that children ages 12-24 months be served whole or 2% milk and children over the age of 2 be served 1% and skim milk. [4.3.1.7](#), [4.9.0.3](#) For children between the age of 12 and 24 months who are at increased risk for overweight or obesity, reduced fat milk (2%) can be served. [4.3.1.7](#), [4.9.0.3](#) Raw, unpasteurized milk or milk products and unpasteurized juices are not permitted. [4.9.0.3](#)
- Reconstituted milk products may be used for cooking purposes only and should be prepared, refrigerated, and stored in a sanitary manner. [4.9.0.3](#) Containers should be labeled (preparation date and contents) and used or discarded within 24 hours.
- Foods that are considered high-risk for children under age four (choking hazards) should be avoided. [4.5.0.10](#) Examples of foods on this list include: hot dogs (whole or sliced into rounds), raw carrot rounds, whole grapes, hard candy, nuts, seeds, raw peas, hard pretzels, chips, peanuts, popcorn, rice cakes, marshmallows, spoonfuls of peanut butter, and large chunks of meat.

The suggestions below can help make foods safer for children under the age of four.

Change Foods to Make Them Safe

How to change foods to make them safer for children under the age of 4:

- Hot dogs: Cut in quarters lengthwise, then into small pieces if a more nutritious food is not available.
- Grapes: Cut in half lengthwise.
- Nuts: Chop finely.
- Raw carrots: Chop finely or cut them into strips.
- Peanut butter: Spread thinly on crackers; mix with applesauce and cinnamon and spread thinly on bread. (Bread should be served with water or another type of beverage.)
- Fish and other meat: Remove bones and cut into small pieces.

(Holt et al., 2011)

Children should always be seated when eating to reduce choking hazards. Children should be supervised while eating to monitor the size of food and that they are eating appropriately. [4.5.0.10](#)

Storage and Preparation

Foods should be stored properly both before and after cooking, and properly cleaned before refrigeration to prevent food borne illness.

Refrigeration

Temperature plays an important role in preserving the safety of food. The favorable temperature for bacteria to grow rapidly, often referred to as *the danger zone*, is between 40° F and 140° F (USDA Food Safety and Inspection Service, 2010). If food is stored in this temperature range, bacterial growth can increase to the point of causing food borne illness. By storing foods properly in the refrigerator or freezer, bacterial growth is inhibited. Refrigerators should maintain temperatures below 40° F, and freezers below 0° F, to minimize bacterial growth. A thermometer should be kept in the refrigerator to make sure all parts of the food storage area are below 40° F in the refrigerator and below 0° F in the freezer (Holt et al., 2011). The thermometer should be placed near the refrigerator door, the warmest part of the refrigerator or freezer and should be checked daily.

Refrigerator Storage

All food stored in the refrigerator should be covered or wrapped tightly to avoid contamination. [4.9.0.5](#) Meat, poultry, fish, eggs, dairy products, and foods containing these should be stored in the coldest part of the refrigerator, usually toward the back. Raw foods should be stored below cooked or ready-to-eat foods. [4.9.0.5](#) Programs are encouraged to consult CFOC for additional information on how different foods, including infant formula, should be labeled, dated and stored in a refrigerator. [4.3.1.5](#), [4.9.0.3](#)

Freezing Foods

If kept frozen, foods retain most of their nutrient value and remain safe indefinitely. However, the quality (taste, color, consistency) of frozen foods can deteriorate over time (USDA Food Safety and Inspection Service, 2010). The length of time foods can be frozen without noticeable decline in quality depends upon the food itself and the quality of the food at the time it was frozen (Payne-Palacio and Theis, 2011). The USDA Food Safety and Inspection Service (2010) provides information about safe freezer times for protecting the food quality of various types of foods.

Thawing Foods

Thawing meat and poultry products at room temperature or partially cooking them encourages bacterial growth by keeping them in the danger zone (40°-140° F) for a prolonged period. [4.9.0.3](#) Bacteria that produce heat-resistant toxins is a problem that further cooking *can't* fix (USDA Food Safety and Inspection Service, 2010). Foods can be properly defrosted by placing them in the refrigerator, putting them under cold running water, cooking them, or using the defrost setting of the microwave oven. [4.9.0.3](#) Do not thaw foods by soaking them in water in the sink, or any other method not described above. However, once the food is thawed, bacteria become active again and multiply. Food, including meat and poultry, that is *defrosted in the refrigerator* may be refrozen before or after cooking. If thawed by other methods, food must be cooked before refreezing (USDA Food Safety Inspection Service, 2010).

Frozen human milk should be thawed under cold running tap water or in the refrigerator, never in the microwave oven. [4.3.1.3](#), [4.3.1.9](#) Once thawed, human milk should not be refrozen.

Bacteria can grow in most foods, but they are particularly prolific in protein-rich foods [such as unpasteurized milk, cheese, uncooked eggs, raw seafood, sandwiches and hamburgers] and moist foods maintained and served at room temperatures [such as salad bar items] (USDA, 2011). Food should be served immediately after it has been cooked or prepared. [4.9.0.3](#) Meats and poultry need to be cooked to an internal temperature of 165° F for safety. At this stage beef is brown/gray in color and the juices run clear. A meat thermometer should be used to determine the temperature of cooked meat (Holt et al., 2011) by placing the thermometer in the center of the meat.

Cooling and Reheating

Improper cooling of cooked foods also causes food borne illness. Hot food should not be left to cool at room temperature before being stored in the refrigerator. Instead it should be quickly cooled in an ice bath and stirred frequently before refrigeration. Also, food should be placed in shallow containers (less than 3 inches deep) to cool more quickly in the refrigerator. [4.9.0.5](#) Cooked foods stored in the refrigerator should be served within 24 hours. [4.9.0.4](#) Any open containers of ready-to-feed formula should be covered, refrigerated, and used or discarded after 48 hours. [4.3.1.5](#)

Food reheated in a microwave should be covered and rotated so that it heats evenly. The food should stand for at least two minutes before serving to reduce risk of burns upon eating.

Leftovers should be reheated and used only once. (Human milk, formula and infant food should not be reheated.)

Whole, pasteurized milk given in bottles should be poured from the original container into clean, labeled and dated bottles or disposable sterile bottles, although children should not consume cow's milk prior to one year of age.^{4.3.1.7} Children over one year of age should drink from a child-appropriate cup.

Bottles of formula or human milk should be warmed by placing them in a pan of hot (not boiling) water for 5 minutes or until it reaches the desired temperature. Overheating can destroy important human milk components. Infant formula and human milk should never be heated in a microwave. Microwave ovens do not heat evenly and can scald an infant (by creating "pockets" of very hot liquid) or damage important proteins or vitamins in the milk through excessive heating (American Academy of Pediatrics, 2001). Regardless of whether the bottle contains human milk or formula and the method of warming, the temperature of the liquid should always be tested to reduce the risk of burns upon feeding.^{4.3.1.3, 4.3.1.5}

Clean-up and Leftovers

To avoid contamination, food should be served from a dish, not factory-sealed containers^{2, 4.3.1.12}. Bottles made of plastics containing *Bisphenol A* (BPA) or phthalates should also be avoided (those labeled with #3, #6, or #7). Glass bottles or plastic bottles labeled BPA-free or with #1, #2, #4, or #5 are acceptable.^{4.3.1.3} After meals and snacks, any leftover food that has already been served should be discarded, not put back into its original containers.^{4.3.1.12, 4.9.0.4} This includes baby food, human milk or formula, or food from family-style serving dishes or from individual plates.^{4.3.1.5, 4.3.1.12, 4.9.0.4, 4.3.1.3} (Foods that have not been served may be kept if they are maintained at the appropriate temperature levels.) A "Guidelines for Storage of Human Milk" chart can be found at the end of Standard [4.3.1.3](#) of CFOC (pg. 166). Foods must be checked daily for spoilage, following the adage, "When in doubt, throw it out!"

Storing Dry Foods

Dry foods should be stored at least 6 inches above the floor in a clean, dry, well-ventilated storeroom.^{4.9.0.6} Dry ingredients should be stored in containers that have tight-fitting lids and no holes, and that are intended for food storage purposes. This helps keep insects and rodents out.^{4.9.0.6, 4.9.0.7} The food storage area should be arranged so that it is easily accessible for cleaning^{4.9.0.6}. The food should be stored away from cleaning supplies and pesticides. The maximum storage time for canned food products is one year (Payne-Palacio et al., 2011).

Food Brought From Home

Child care facilities should include specific policies on food brought from home in the comprehensive plan to meet the nutritional requirements of the children in their care.^{4.6.0.2} Foods appropriately brought from home, including human milk, formula, and other foods, should be clearly labeled with the child's full name, the date, and the contents, and be stored properly.^{4.6.0.1}

² Some state or county child care regulations prohibit the serving of food from an outside source, i.e. parent, restaurant, etc. In addition, the CACFP does not allow food to be brought from home unless there is a documented medical need for a particular child.

Food brought from home for one child should not be shared with other children.^{4.6.0.1} When foods are brought to the facility from home or elsewhere, these foods should be limited to those listed in the facility's written policy on nutritional quality.^{4.6.0.1}

If food is brought from home on a regular basis the caregiver/teacher should

- use the program's menu as a guide for helping parents/guardians understand how to meet their child's daily food needs,^{4.2.0.9, 4.6.0.2}
- ask the parents/guardians to send foods that meet requirements for meals the child will eat while in child care,^{4.6.0.2}
- ask the parents/guardians to wrap and label the food that is brought from home (child's name, the date, and type of food),^{4.6.0.1}
- understand the proper use and feeding,
- have a written and dated agreement between the parents/guardians and the facility, and
- make certain the food brought from home satisfies the daily nutritional needs of the child.

If not, the facility should supplement it with appropriate foods in order to meet meal pattern requirements. If the situation of inadequate food from home is chronic, the caregiver/teacher should also refer the parents/guardians to the child's health care provider^{4.6.0.2} or to a local child care nutritionist/registered dietitian. A local nutritionist/registered dietitian may be located through the community WIC program or the local Child Care Resource and Referral Agency.

Prepared Food Purchased from Outside Sources

If any food is purchased from a central kitchen or vendor, the kitchen or vendor should be inspected and approved by the local health authority.^{4.10.0.1} Freshly prepared food must be transported in clean, covered, and temperature-controlled containers.^{4.10.0.2}

Hand washing

One of the best ways to prevent the spread of germs is by washing hands.

REVIEW: HOW to Wash Hands: Eight Easy Steps [3.2.2.2](#)

1. Check to be sure a clean, disposable paper (or single-use cloth) towel is available.
2. Turn on warm water, between 60°F and 120°F, to a comfortable temperature.
3. Moisten hands with water and apply soap* to hands.
4. With hands out of the water stream, rub hands together vigorously until soap lather appears. Continue for at least 20 seconds. Rub areas between fingers, around nailbeds, under fingernails, jewelry, and back of hands. Nails should be kept short; acrylic nails should not be worn.
5. Rinse hands under running water until they are free of soap and dirt. Leave the water running while drying hands.
6. Dry hands with the clean, disposable paper or single-use cloth towel.
7. If taps do not shut off automatically, turn taps off with a disposable paper or single-use cloth towel.
8. Throw the disposable paper towel into a lined trash container, or place single-use cloth towels in the laundry hamper, or hang individually labeled cloth towels to dry. Use hand lotion to prevention chapping of hands, if desired.

**It is the physical action of hand washing that removes soil, not the type of soap. However, it is advisable for children to use liquid soap because they do not have the dexterity to handle bar soap. The use of antimicrobial soap is not recommended.* [3.2.2.2](#)

REVIEW: WHEN to Wash Hands: Staff and Children [3.2.2.1](#)

Hands should be washed:

- a) Upon arrival for the day, after breaks, or when moving from one child care group to another;
- b) Before and after:
 - 1) Preparing food or beverages;
 - 2) Eating, handling food, or feeding a child;
 - 3) Giving medication or applying a medical ointment or cream in which a break in the skin (e.g., sores, cuts, or scrapes) may be encountered;
 - 4) Playing in water (including swimming) that is used by more than one person;
 - 5) Diapering;
- c) After:
 - 1) Using the toilet or helping a child use the toilet;
 - 2) Handling bodily fluid (mucus, blood, vomit), from sneezing, wiping and blowing noses, from mouth or from sores;
 - 3) Handling animals or cleaning up animal waste;
 - 4) Playing in sand, on wooden play sets, and outdoors;
 - 5) Cleaning or handling the garbage.

REVIEW: WHERE to Wash Hands

- Never wash hands in a sink where food is prepared. A sink used for food preparation should not be used for handwashing or any other purpose. [4.8.0.4](#), [4.8.0.5](#)
- If only one sink, wash your hands first. Then clean the sink thoroughly before preparing food.
- Make sure the sink faucet, liquid soap, and paper towels are easily accessible for children.

Sanitation of Food Preparation, Storage, and Dining Areas

In a group setting such as child care, cleaning and sanitizing food storage, preparation, and service areas are as important as hand washing in reducing the spread of germs. Methods for cleaning and sanitizing equipment and food preparation materials are described below.

REVIEW: Cleaning versus Sanitizing versus Disinfecting [3.3.0.1](#)

To clean something is to physically remove all dirt and contamination.

Use a single-use, disposable paper towel or cloth and soap and hot water to clean surfaces. This removes the visible dirt.

To sanitize something is to reduce the germs to levels considered safe by public health codes or regulations.

Spray the area with a sanitizer registered with the Environmental Protection Agency (EPA) or bleach and water dilution. For the EPA-registered sanitizer, follow the directions on the manufacturer's label. For the bleach and water solution, allow the surface to air dry or wait two minutes and wipe it dry with a disposable paper towel. [Appendix J](#)

To disinfect something is to destroy or inactivate most germs.

Spray the area with an EPA-registered disinfectant or bleach and water dilution. For an EPA-registered disinfectant, follow the directions on the manufacturer's label. For the bleach and water dilution, allow the surface to air dry or wait two minutes and wipe it dry with a disposable paper towel. [Appendix J](#)

REVIEW: Preparing the Sanitizing Bleach and Water Dilution for Items Intended for the Mouth [3.3.0.2](#), [3.3.0.3](#), [Appendix J](#)

The following steps should be followed to prepare the bleach and water sanitizing dilution for mouthed items:

1. Select an opaque spray bottle.
2. Make sure that the room is well ventilated.
3. Wear gloves and eye protection, and use a funnel.
4. Add bleach to the water rather than the water to bleach to reduce fumes.
5. Prepare the solution daily; label the bottle with contents and where it is to be used, [5.2.9.1](#) and the date mixed.
6. Store the solution separate from foods and in a cabinet inaccessible to children. [5.2.9.1](#)
7. Toys that children have placed in their mouths or that are otherwise contaminated by body secretion or excretion can also be sanitized in a mechanical dishwasher that meets certain requirements. [4.9.0.11-4.9.0.13](#)

Kitchen Surfaces

Kitchen surfaces should be cleaned and sanitized before and after food preparation and meals and when visibly soiled. [4.9.0.9](#)

Sinks, Dishwashing Area, Refrigerators, and Stoves

All kitchen equipment, sinks, dishwashing areas, refrigerators, and stoves, should be designed, installed, operated, and maintained to meet standards determined by the National Sanitation Foundation or applicable State or local public health authority. [4.8.0.2](#) Equipment should be sanitized daily or as needed following the steps described in the box above.

Like all other kitchen equipment, refrigerators and freezers should be maintained in a clean and sanitary condition. [4.9.0.9](#)

Heating units such as stoves, warmers, and steam tables should be sanitized daily according to the manufacturer's guidelines for maintenance and operation. [4.8.0.3](#)

Utensils, Dishes, and Containers

Children's food should be served on plates or other sanitized holders and not placed on a bare table. [4.5.0.2](#) Dishes should be checked for cracks or chips. If imported ceramic dishware or pottery is used, a regulatory health authority should determine its safety. All food preparation and serving utensils should be cleaned and sanitized before and after each use and stored in a clean and sanitary manner. [4.9.0.9](#) Reusable bottles, bottle caps, and nipples should be cleaned and sanitized in the dishwasher or by boiling for 5 minutes or more just prior to filling. [4.3.1.10](#) Reusable utensils and equipment should be cleaned thoroughly in hot soapy water, rinsed, and then sanitized. [4.9.0.13](#) To sanitize, water in the dishwasher should be at least 140° F. [5.2.1.14](#)

Single-service eating supplies that are discarded after each use (i.e., napkins, paper placemats, paper tablecloths, and paper towels) may be used. [4.5.0.2](#), [4.9.0.11](#), [4.9.0.12](#) Styrofoam cups and plates, however, are not acceptable because pieces of the Styrofoam can break off and pose a choking hazard for children under the age of 4. [4.5.0.2](#)

Dining Areas

Dining tables and chairs and high chairs should be cleaned and sanitized before and after each use. Washable napkins, bibs, placemats, and tablecloths (when allowed by the regulatory agency) should be cleaned after each use. [4.5.0.2](#)

Food Personnel Precautions

It is inadvisable for food service staff to also assume responsibilities for changing diapers. Similarly, staff caring for diapered children should not be responsible for preparing or serving food to children. If this separation of responsibilities is not possible (e.g., a family child care setting), staff who care for diapered children should prepare and serve food only after thorough handwashing. [4.9.0.2](#) Anyone who is ill or has open or infected injuries can easily communicate germs to others by contaminating food, and should therefore not be responsible for handling food. [4.9.0.2](#)

Action Items for the CCHC

The CCHC should

- periodically review with the child care staff
 - steps for sanitizing/disinfecting the food environment and food related items in the child care facility,
 - essential features of safe selection, storage, and preparation of food,
 - how, when, and where to wash hands; and

- encourage caregivers/teachers to teach children and parents/guardians how, when, and where to wash hands by setting a good example. [2.4.1.2](#), [2.4.3.1](#)

WHAT THE CCHC SHOULD KNOW: MEETING CHILDREN'S NUTRITIONAL NEEDS

Dietary Trends Among Children

The following examples are indicative of current dietary trends among children:

- Only 20% of young people (age 2-19) eat the recommended 5 or more servings of fruits and vegetables each day (CDC, 2004).
- Children younger than 12 comprise 18% of the U.S. population, but consume 28% of all juice and juice drinks (American Academy of Pediatrics, 2001).
- For children 2-18 years, intake of dark green vegetables, orange vegetables and legumes is very low (IOM, 2011).
- For children 2-18, mean daily intakes of calories for solid fats and added sugars are very high. The largest contributor to children's intake of added sugar (45% of the total amount) is regular soda and noncarbonated sweetened drinks (IOM, 2011).
- While the majority of mothers initiate breastfeeding, continuation at the levels recommended by *Healthy People 2020* (2009) is below the U.S. goal, with only 24% of mothers continuing breastfeeding up to 12 months of age (CDC, 2011). This may be due to lack of support for continued breastfeeding or human milk feeding.

Nutrition and Growth

During infancy, physical growth occurs at a faster rate than at any other time in life. By one year of age most infants have increased body length by 55%, head circumference by 40%, and tripled their birth weight. The first year is also a period of rapid growth of the brain and human milk is best suited to meet these needs. Also during this period, adverse conditions, such as nutritional deficiencies, are likely to have a greater effect. During the preschool years (2-6), the rate of physical growth slows from its high rate in infancy and stabilizes to a fairly constant rate around 5 years of age. The brain continues to grow rapidly, however, and more than triples its birth weight by 6 years of age (Samour and Lang, 2012; Worthington-Roberts and Williams, 2000).

Measuring Nutritional Status

Since physical growth depends on caloric intake, as well as the variety of nutrients in the food a child eats, a common method of measuring a child's nutritional status is through assessment of physical growth.

The most common measures of growth in infants and children up to 2 years of age are length and weight. Beginning at age 2 years, the Centers for Disease Control (CDC) and the American Academy of Pediatrics (AAP, 2008) recommend the use of Body Mass Index (BMI) to screen for overweight and obesity for children. BMI is calculated from a child's weight and length. BMI does not measure body fat directly, but is an alternative for direct measures of body fat. The BMI is calculated as weight in kilograms divided by height in meters squared. Examples of BMI growth charts for boys and girls ages 2 to 20 are included in Appendix A.

The growth charts commonly used in the U.S. for comparing growth patterns of children (length/stature, weight, and BMI) are those developed by the World Health Organization (WHO) for children birth to age two and from the National Center for Health Statistics at the CDC for children older than two (2000, 2009). These charts and a new online training module around use of the WHO growth charts can be accessed via the CDC webpage at: <http://www.cdc.gov/growthcharts>.

Meeting the Nutritional Needs of Infants

During the first year of life, a child experiences more changes in diet than at any other time. While exclusive breastfeeding is recommended for the first 6 months, different types and amounts of food and feeding practices are needed after 6 months of age to support rapid growth and development. In addition, when a caregiver/teacher feeds an infant, the infant receives much more than nourishment through the touch and care of an adult.^{4.3.1.2} In order to ensure that each infant receives the food and care needed, the caregiver/teacher and infant's parents/guardians should have a written policy explaining the child's needs.^{4.2.0.8} The policy should include times to feed, which foods to serve, the amounts to serve, and how to serve them.

Human Milk and Formula

The American Academy of Pediatrics (AAP) strongly recommends breastfeeding as the preferred feeding for all infants (AAP, 2005). If breastfeeding is not possible, iron-fortified infant formulas are the most appropriate substitutes for feeding healthy, full-term infants until 12 months of age (AAP, 2005). The nutrient content of human milk and infant formula meet all the nutritional needs of an infant from birth until about 6 months of age.

Supporting Breastfeeding Mothers

There are a number of things that child care staff can do to help mothers continue to breastfeed once they return to work. They should include ^{4.3.1.1}, [Appendix JJ](#)

- providing a breastfeeding-friendly environment, welcoming mothers to nurse their babies at the facility;
- displaying posters and brochures that support breastfeeding and show best practices,
- teaching clients to properly store and label their milk for child care facility use,
- contacting and coordinating with local skilled breastfeeding support and actively referring,
- continually updating facility information and learn about breastfeeding support,
- training all staff to handle and feed human milk properly.

Expressed human milk should be placed in a clean and sanitary bottle with a nipple that fits tightly or into an equivalent clean and sanitary sealed container to prevent spilling during transport to home or to the facility. Only cleaned and sanitized bottles, or their equivalent, and nipples should be used in feeding. The bottle or container should be properly labeled with the infant's full name and the date and time the milk was expressed. The bottle or container should immediately be stored in the refrigerator on arrival.^{4.3.1.3}

The caregiver/teacher should always hold the infant during feeding time. In fact, this is a requirement of some states. Bottle propping and children carrying bottles should not be allowed. Prolonged bottle propping can result in otitis media (ear infection), orthodontic and other dental problems, speech disorders, and possible psychological problems. [4.3.1.8](#)

For infants who are not breastfed, the CACFP Meal Pattern and the AAP recommend only iron-fortified infant formula for infants up to 12 months of age. Participation in the CACFP requires that child care facilities offer at least one type of infant formula; although parents/guardians should make the decision to accept or decline the caregiver's offer of formula. If provided by the facility, formula should be factory-sealed and mixed according to the manufacturer's instructions. [4.3.1.5](#) Whether using human milk or formula, infants should be fed whenever they are hungry, unless parents/guardians provide authorized medical instructions otherwise. [4.3.1.2](#)

CFOC (3rd ed., 2011) states that fruit juice should not be offered in the first twelve months of life. [4.2.0.7](#) Children ages 1-6 years should consume no more than 4 to 6 ounces of 100% pasteurized fruit juice per day. [4.2.0.7](#) Juice should have no added sweeteners. Caregivers/teachers should offer juice in a cup, rather than a bottle for all infants and toddlers.

Solid Foods for Infants

Solid food should not be introduced to infants younger than 6 months of age for the following reasons:

- it interferes with the intake of human milk or commercial formula that is needed to promote growth during the earliest months, and
 - infants' digestive, immune, oral and neuromuscular systems are not developmentally ready to handle solid food before about 6 months. [4.3.1.11](#)
- (USDA Team Nutrition, 2002)

The introduction of solid foods depends on the infant's individual nutritional and developmental needs. If a child has difficulty with a change in food consistency, the reason may be developmental. Consultation with a health care professional (e.g., speech pathologist) may be required to learn techniques to help the child accept new consistencies. When solid foods are introduced, they should be offered slowly (one new food at a time at least one week apart) to assist in the detection and prevention of food allergies. (See section on Food Allergies in this Module.) By trying new solid foods, the infant will become familiar with different textures, sizes, shapes, smells, and tastes. Moreover, around 8-10 months, finger feeding provides the opportunity for the infant to develop eye-hand skills and coordination. At this time it is especially important that foods are cut up in pieces no larger than 1/4 inch pieces to prevent choking. [4.5.0.10](#)

CACFP Infant Feeding Chart

For information on the CACFP nutrition requirements [4.2.0.3](#) for infants and to learn about the developmental sequence of feeding skills, two additional readings are recommended:

1) *CACFP Requirements for Infants* available at:
http://www.fns.usda.gov/cnd/care/ProgramBasics/Meals/Meal_Patterns.htm.

2) *Developmental Sequence of Feeding Skills* in Appendix B.

Meeting the Nutritional Needs of Toddlers and Preschoolers

Eating Characteristics

Toddlers express their independence in relation to eating through their physical skills that allow them to self-feed and through acquiring language skills that enable them to verbally express eating preference and needs. All children need to consume adequate calories for the energy needed for active play, and drink plenty of fluids, preferably water, (before, during, and after play) to reduce the risk of dehydration (Kleinman, 2009). Water is one of the best drink choices when trying to prevent dehydration. Therefore, clean and sanitary drinking water should be readily available, in indoor and outdoor areas, throughout the day. [4.2.0.6](#)

Children have smaller stomachs than adults and therefore need to eat more frequently. The facility should serve toddlers and preschoolers small-sized, age-appropriate portions and should permit children to have one or more additional servings of the nutritious foods that are low in fat, sugar, and sodium as needed to meet the caloric needs of the individual child. Serving small portions and permitting toddlers and preschoolers to have additional servings will help meet individual needs. [4.3.2.2](#)

Children should be offered meals and snacks in accordance with the number of hours present in care according to the following table [4.2.0.5](#):

Hours in Care	# of Meals / Snacks
8 hours	1 meal /2 snacks OR 2 meals/ 1 snack
9 or more hours	2 meals/2 snacks

The meal/snack schedule should be regular enough for children to learn what to expect, but flexible enough to meet their needs. For example, if children are hungry, lunch can be served a little earlier than scheduled.

Children at this age may eat more at one time than another, may like a food one day, but not the next, and may resist trying new foods. Acceptance of new foods may not be immediate and may occur only after 8 to 10 exposures to those foods in a non-coercive manner (Kleinman, 2009). Regardless of individual children's eating patterns and preferences, the child care staff should be consistent with rules about eating a variety of foods. There are activities within this Module that explore situations involving young children with choosy eating habits. Forcing children to try new foods or eat more of any food creates an unhealthy

eating environment. (NOTE: Trainers can also reference their “Tips for Picky Eaters” handout from the on-site training.)

Portion Sizes for Toddlers and Preschoolers

Offer child-appropriate portions. Proper use of the CACFP Program and *MyPlate* [Appendix Q](#), [Appendix R](#) (USDA, 2011) requires accurate estimation of recommended portion sizes.

Recommended portion sizes can be found at the *MyPlate* website:

<http://www.choosemyplate.gov/>.

Research indicates that both adults and children commonly make large errors when asked to estimate food amounts—even when their estimates are based on direct observation (Foster et al., 2006; Matheson et al., 2002). CCHCs should demonstrate how to measure accurate portions and should alert child care staff to the potential for portion distortion in child care settings.

Nutrition Requirements for Toddlers and Preschoolers

During the first six months of life, human milk or iron-fortified formula provides all of the necessary nutrients for a growing infant. The toddler years, especially between the ages of 12 to 24 months, are a time of transition when young children begin to eat food from the table and seek out nutrients from new foods with different tastes and textures. Nutrients include vitamins, minerals, protein, carbohydrate or starch, and fats ^{4.1}. While toddlers and preschoolers grow more slowly than they did during their infancy, proper nutrition remains a top priority. Depending on their age, size, and activity level, toddlers need about 1,000-1,400 calories a day (USDA and USDHHS, 2010). These calories should come from a variety of food groups (explained in greater detail in the following section, *CACFP and MyPlate*), which include fruits, vegetables, grains, proteins, and dairy.

Caregivers/teachers have a unique opportunity to support the healthy development of young children in their care and provide guidance to parents/guardians by ensuring that plans are in place to meet toddlers and preschoolers’ nutritional requirements. An important goal of early childhood nutrition is to ensure children’s present and future health by fostering the development of healthy eating behaviors. Early food and eating experiences form the foundation of attitudes about food, eating behavior, and consequently, food habits. Sound food habits are supported at an early age by the parent/guardian and built upon a foundation of eating and enjoying a variety of healthful foods. ^{4.1} Caregivers/teachers are responsible for providing a variety of nutritious foods, defining the structure and timing of meals and creating a mealtime environment that facilitates eating and social exchange. Children should be encouraged to participate in choices with adults about food selection and the amount consumed at each eating occasion. ^{4.3.1.11} Caregivers/teachers impact the nutrition habits of the children under their care, not only by making choices regarding the types of foods that are available but by influencing children’s attitudes and beliefs about that. Young children often learn more through experiencing an activity and observing behavior, thus, modeling of healthy eating behavior by early care and education staff is an effective way to demonstrate healthy eating habits for young children ^{2.4.1.2}.

CACFP and MyPlate [Appendix O](#), [Appendix R](#)

One of the most important guides for meals and snacks served in a child care facility is the CACFP Requirements for Children Ages 1 through 12. This program specifies the types of food and serving sizes appropriate for children during the time they are typically in child care. As mentioned earlier, for children aged 1 through 12 this normally corresponds to two meals and one snack or one meal and two snacks during child care hours. [4.2.0.5](#) The current CACFP requirements for toddlers and preschoolers can be found at:

http://www.fns.usda.gov/cnd/care/ProgramBasics/Meals/Meal_Patterns.htm.

As research in nutrition progresses, the CACFP requirements may undergo updating and revision. To remain current, users of the program should check the status of the guidelines at least two times per year.

MyPlate (USDA, 2011) is designed as part of a larger communications initiative based on the *Dietary Guidelines for Americans, 2010* to aid in selecting a variety of foods with an array of different colors, textures, shapes, and sizes for children. [4.7.0.1](#) *MyPlate* emphasizes the five major groups of food (fruits, vegetables, grains, proteins, and dairy) and specifies the amounts/servings of foods from each of the categories a child needs during a 24 hour period. The *Dietary Guidelines for Americans, 2010* also provides recommendations for the use of oils and solid fats/added sugar for children from ages two to eighteen. Although more servings are required in some food groups than in others, all food groups are equally important. *MyPlate* also recommends serving sizes. However, since it pertains to a 24 hour period, the child care staff should rely on the CACFP requirements for appropriate serving sizes during the child care day.

Sweets and Fats

The *Dietary Guidelines for Americans, 2010* (USDA and USDHHS) recommend a diet that is low in the use of sugar in both foods and beverages and “low in saturated fat and cholesterol and moderate in total fat” (p. 28). Sugar and fat are often added to enhance flavor so children will eat their food. However, because children’s taste buds are in their cheeks, on the roof of their mouths, and on their tongues, they are much more sensitive to sweet tastes and do not need extra flavoring (ADA, 2011). Sugar also promotes tooth decay and, therefore, sweets (doughnuts, toaster pastries, sweet cereals, cookies, cake, brownies, etc.) should be limited to twice per week (or less!).

Fat intake should only be restricted for children older than 2 years of age (Holt et al, 2011). When a high fat food (e.g., potato salad) is served in a meal, it should be balanced by foods with a low fat content (e.g., raw vegetables). The caregiver/teachers should avoid serving several high fat foods together (e.g., potato salad and fried chicken), or at all.

Sugar Sweetened Beverages

Young children are often offered fruit juices to drink for snacks and meals as an alternative to less nutritious sugared beverages or water. While many fruit juices are a good source of vitamin C, the recommended intake of fruit juice for children aged 1-6 years is approximately 4-6 ounces per day. Over-consumption of fruit juice can lead to diarrhea and increased risk for dental caries. Children who consume large amounts of sugared beverages,

including fruits juices, may fill up on those foods and not eat more nutrient dense foods. (AAP, 2001; Story et al., 2000). A limited amount (4-6 oz per day) of 100% fruit juice *from a cup* can be offered to children. [4.2.0.4](#), [4.2.0.7](#)

Water and milk are great choices for beverages. Water is good for hydration and reduces acid in the mouth (which can contribute to childhood dental caries). Additionally, water reduces the intake of extra calories (from fruit juice or sugar sweetened beverages) that can be associated with childhood overweight. When milk is offered, whole, pasteurized milk should be served to children between the ages of one and two years, or reduced fat (2%) for those children who are at risk for obesity or hypercholesterolemia. Lower fat milk (1% or skim) is the best choice for children over two years of age. [4.3.1.7](#)

If children are unable to eat dairy products or any other food because of medical or other special dietary needs (e.g., lactose intolerance, allergies), substitutions to the CACFP program may be made, but *only* when supported by a statement from a recognized medical authority. The statement must also include recommended alternate foods (FDA, 2010).

Nutrition for Children with Special Needs

Special nutrition or feeding requirements of children with special needs should be obtained in writing prior to entry into the facility. [4.2.0.8](#) Child care facilities should not administer folk or homemade remedy medications or supplements without a prescribing health professional's order and complete pharmaceutical labeling. [3.6.3.1](#), [9.2.3.9](#). This information should be reviewed and used by the child care team and the child care nutritionist/registered dietitian. [4.2.0.8](#) Some children with special needs require individualized adaptations related to mealtime, while others may need only a little extra assistance or support to fully participate. Food emergencies are also more prevalent among children with special needs so their mealtimes require careful monitoring. The child care staff should have a rapid response plan, as a part of the child's feeding plan, accessible for handling any food emergencies, such as allergic reactions or choking. [4.2.0.8](#)

Planning and Evaluating Child Care Menus

Menus should be planned in advance. Several self-assessment tools exist to guide facilities in developing comprehensive nutritional content for menus, but all such tools should be utilized under the guidance of a child care nutritionist/registered dietitian. [4.2.0.9](#), [4.7.0.1](#) One of the most widely used tools is the Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC), developed at the Center for Health Promotion and Disease Prevention at the University of North Carolina. NAP SACC (Ammerman et al, 2002) is an evidence-based tool that targets child care policy, practice and environmental influences on nutrition and physical activity behaviors in young children (see "Where to Find More Information" section). Advanced menu planning is essential to ensure effective and efficient delivery of food.

Menu planning

- allows for more variety, so food is less repetitious;
- facilitates meeting the CACFP meal pattern requirements;
- takes advantage of seasonal food bargains,
- facilitates purchase of bulk priced items,
- saves time at the store by having an organized shopping list,

- reduces the number of last minute trips to the store,
 - facilitates planning food items for children with special needs,
 - ensures that infants and children are served a variety of culturally familiar and diverse foods, and [4.5.0.8](#)
 - improves communication with parents/guardians about what foods are being served, and when. (Any changes in food actually served should be made available to parents/guardians.) [4.2.0.9](#)
- (National Foodservice Management Institute, 2009)

For more information about culturally diverse foods, read the hand out *Cultural Foods* presented in Appendix A. The USDA also lists food pyramids for different ethnic/cultural audiences at this webpage:

http://fnic.nal.usda.gov/nal_display/index.php?info_center=4&tax_level=3&tax_subject=256&topic_id=1348&level3_id=5732

Making Snacks a Part of the Child Care Menu

Many people think of snacks as being unhealthy; however, a variety of nutritionally balanced snacks served in moderation are a healthful, essential part of a child's diet. Since children have small stomachs and need to eat small amounts more frequently, snacks become an important contributor to their nutrition. Snacks can provide up to 20% of children's daily energy and nutrient needs. Since children eat small amounts of food, it is important that all the foods they eat are nutritious.

Using *MyPlate* as a guide for selecting snack foods will help ensure that they have a high nutritional value. By providing the same physical and emotional environment for snacks as for regular meals, children will consider snacking to be a healthy, acceptable part of their daily eating routine (Kleinman, 2009). To help prevent tooth decay in addition to promoting healthy eating habits, snacks that have a high sugar content or are sticky (like dried fruit) should be avoided. [4.2.0.7](#)

Child care facilities should be encouraged to create and enforce policies concerning food brought in for celebrations and holidays. Encourage parents/guardians and caregivers to bring non-food treats (such as stickers and pencils) instead of high fat, high sugar snacks. (Ammerman et al., 2002).

Food Allergies

In 2007, approximately 3 million children under age 18 years (3.9%) were reported to have a food or digestive allergy in the previous 12 months (CDC, 2008). Food allergy refers to a condition in which a person's immune system responds to the ingestion of a particular food protein. Non-immune reactions to foods are described as food intolerances and are due to conditions such as lack of an essential enzyme, or reactions to chemicals or toxins in foods (Holt et al., 2011).

Although any food can cause an allergic reaction, a relatively small number of foods (milk, soy, eggs, wheat, peanuts, tree nuts [e.g., walnuts, pecans, hazelnuts, etc.], fish, and shellfish) are responsible for 90% of all food allergies.

Infants and young children are more susceptible to food allergies because their digestive and immune systems are still developing. This is the rationale for introducing solid foods to infants gradually (one at a time) so that food allergies can be detected. Very small amounts of allergenic foods can be sufficient to trigger an allergic reaction. Also, children without previously diagnosed allergies can sometimes suddenly develop a reaction to foods that they had previously tolerated. Most children outgrow food allergies by age four, although this varies with the type of allergy. Allergies to peanuts, tree nuts and shellfish tend to persist through adulthood.

Allergic reactions to foods are particularly problematic because symptoms can occur within minutes or hours after a food is consumed, and the symptoms themselves can vary greatly. For example, common allergic symptoms include itching, hives, rash, vomiting, diarrhea, abdominal pain, and/or swelling of the lips, tongue, and/or face. These symptoms can gradually increase to include light-headedness, shortness of breath, sneezing, cramping, vomiting, and diarrhea. A serious, life-threatening symptom, anaphylactic shock, can occur in the most severe allergic reactions. Initial symptoms include feeling warm, flushing, tingling of the mouth, or rashes. Unless treated immediately, anaphylactic shock can result in loss of consciousness and death. If a child is at risk for severe allergic reactions, an EPIPEN®, EpiPen Jr® Auto-Injectors, or Ana Kit® may be prescribed by the child's physician for emergency use. In such cases, the child care caregivers/teachers must know where these medications are and how to administer them. In cases where anaphylactic shock-like reactions occur unexpectedly, the child care staff should call 911 immediately.

The child care caregiver/teacher's first line of defense against allergic reactions to food is to obtain information about any known food allergies from parents/guardians. Also, children with known allergies will require closer monitoring than other children.

The following suggestions for managing food allergies were developed for classroom caregivers/teachers:

- Ask parents/guardians to provide complete information about the allergy, e.g., foods to avoid, cross-sensitivities, treatment; and home, work and emergency numbers
- Give parents/guardians prior notice of activities involving the reactive food, in order to adequately plan for substitutions or needed medications
- Notify parents/guardians and caregivers of any behavioral changes or symptom occurrence
- Discourage food sharing or trading
- Consider banning certain foods if children have severe food allergies
- Inform support or substitute staff of a child's food allergies and any special needs
- Use proper food handling techniques to decrease food allergy reactions

(Adapted from FAAN, 2009)

Action Items for the CCHC

The CCHC should

- assist the child care staff with developing individualized infant feeding practices with the child care nutritionist/registered dietitian, with input from each infant's parents/guardians and, when appropriate, in collaboration with the child's health care provider;^{[9.2.3.12](#)}

- assist the caregiver/teacher in encouraging and supporting mothers who breastfeed their infants in child care,
- understand how advocacy, policy, and research on breastfeeding play a role in breastfeeding practices, and encourage involvement in these three areas
- learn the *Sequence of Development and Feeding Skills* (USDA, 2007) [also available in Appendix B]) and the CACFP Requirements for feeding infants and children so s/he can provide appropriate guidance to the child care staff,
- be knowledgeable about how the Child and Adult Care Food Program operates in his/her state,
- identify an appropriate administering agency of the CACFP and determine the best way to work together to provide child care facilities the assistance they need to participate successfully in the program,
- be responsible for alerting child care facilities of any revisions to the CACFP requirements,
- create a list of state/community agencies and resources that provide nutrition services to child care facilities and a list of the services they offer,
- review menus regularly, and
- be familiar with resources concerning children's food allergies.

WHAT THE CCHC SHOULD KNOW: PROMOTING HEALTHY EATING HABITS

One of the responsibilities of the child care caregiver/teacher is to maintain a positive and enjoyable environment at mealtimes. This helps to ensure the health and safety of children and promotes healthier eating habits. Both the physical and emotional environment must be considered.

Physical Environment for Healthy Eating Habits

A developmentally appropriate and proper physical environment during mealtimes can provide comfort to children while they eat and reduce choking and other related hazards. Staff should be cognizant of the following:

- Children who do not require highchairs should be seated comfortably around the table, not standing, walking, running, playing, lying down, watching TV, playing on the computer, or riding in vehicles. [4.5.0.1](#), [4.5.0.3](#) These activities increase the risk of aspiration injury and discourage healthy eating habits.
- Children should be provided durable, age-appropriate furniture. [4.5.0.1](#), [5.3.1.3](#) The table should be waist high, and the child's feet should reach a firm surface while seated. High-chairs should have a wide base and a T-shaped safety strap to help prevent the child from climbing or sliding out of the chair and falling. [5.3.1.8](#)
- Children should be provided age-appropriate eating utensils including plates, cups, and silverware. [4.5.0.1](#) These encourage children's development of coordination. Food and drinks should be served in small containers so children can practice serving and pouring.
- Attractive, colorful eating utensils, e.g., plates, bowls, or cups with pictures and colorful designs, may be used to make eating more fun.
- Colorful posters or photos about foods and nutrition may be hung in the dining area to enhance the eating experience and reinforce the children's nutrition education.

Emotional Environment for Healthy Eating Habits.

Caregivers/teachers should also be acutely aware of not only the physical environment during mealtime, but the emotional environment as well.

- Staff should experiment with the activity scheduled just before mealtime. Although an active play period is commonly sequenced just after eating, recent research indicates that active play *before* lunch causes children to eat more food and nutrients (Bergman et al., 2004). A quiet activity such as setting the table or a hand washing routine may ease the transition between the two activities.
- Older children should be encouraged to help set and clear the table. [4.5.0.7](#) This will boost their feelings of competence and provide a learning opportunity (Fletcher & Branen, 2000a).
- The caregiver/teacher should sit at the table and eat the meal or snack with the children. [4.5.0.4](#)
- Meals served family-style encourage children to serve themselves and to take second helpings when they are ready. [4.5.0.4](#)
- A child who is just learning to feed himself/herself should be supervised closely by staff. The caregiver/teacher should be seated adjacent to, or at the same table with, the child. [4.5.0.6](#) This allows the caregiver/teacher to observe and respond rapidly if the child chokes during mealtime. [4.5.0.6](#)

- Meal or snack time should be used as an opportunity to encourage social interaction and conversation, especially about food, [4.7.0.1](#) eating behaviors, and daily events. [4.5.0.4](#) Extra assistance and time should be provided for slow eaters. [4.5.0.4](#)
- Foods can be used to help teach children about counting, sorting, measuring, colors, shapes, textures, temperatures, odors, and tastes. [4.5.0.4](#), [4.7.0.1](#)
- Food should never be used to reward or punish behavior. [4.5.0.11](#)
- Child care staff can model good table manners and praise the children for their manners.
- After clearing and cleaning the table, the children should wash their hands and brush their teeth.
- Before leaving the table, children should be informed of the next activity to make their dismissal less hectic (Fletcher & Branen, 2000a).

Nutrition Education for Young Children

Nutrition education is learning about foods and how important they are to health. Child care staff has the opportunity to help children develop positive attitudes about food and eating and establish healthy eating habits early in life (Holt et al., 2011). Childhood exposure to breastfeeding and its importance may impact feeding practices later in life. Nutrition education also helps children learn to accept a wide variety of foods and to share and socialize at mealtimes (NFMI, 2009).

Activities for the Nutrition Education of Toddlers and Preschoolers

Eating should be an enjoyable experience. Caregivers/teachers can use activities to help children experience and learn about food through positive social interaction, play and creativity. Child care staff should

- encourage children to look at, taste, smell, and touch different foods while they eat;
- talk about textures, colors, and shapes of foods during mealtime, as long as it does not interfere with the pleasure of eating; [4.7.0.1](#)
- help children understand where foods come from by planting a garden, or visiting a garden, farm, or farmer's market;
- use nutrition education activities to introduce new foods,
- facilitate learning by letting children help prepare foods,
- read books related to nutrition or food, and
- use arts and crafts activities to learn about nutrition.

(Adapted from Holt et al., 2011; and the NFMI, 2009).

Action Items for the CCHC

The CCHC should

- assist the caregivers/teachers in maintaining safe and supportive physical and emotional environment at mealtimes, and
- provide nutrition education to child care staff when requested or provide linkages to resources in the community around healthy eating habits.

WHAT THE CCHC SHOULD KNOW: PHYSICAL ACTIVITY

Physical Activity/Active Play for Young Children

Child care staff should promote children's active play every day. [3.1.3.1](#) Healthy physical activity habits can be encouraged by developing and implementing facility-wide policies that offer a safe and supportive play environment, and balance active play with inactive time. Additionally, child care caregivers/teachers are encouraged to be positive role models by participating in daily activities with children.

Regular physical activity is essential to support healthy growth and development in all children, including infants and toddlers (National Association for Sport and Physical Education [NASPE], 2009). Physical activity provides important health benefits such as maintaining a healthy weight, increased strength and coordination, and stress reduction. It also helps children build self-confidence. Regular physical activity, started in early childhood and continued throughout life, helps reduce the risk of heart disease, high blood pressure, and Type II diabetes.

Current lifestyles and child rearing practices appear to indirectly limit the physical activity of young children. For example, NASPE (2009) has expressed concern that confining infants and toddlers to strollers, car seats, and play pens for hours at a time may delay their physical development and start a trend toward an inactive, sedentary lifestyle and childhood overweight.

In 2009, NASPE released updated physical activity guidelines (Active Start: A Statement of Physical Activity Guidelines for Children from Birth to Age 5, 2nd Edition) specifically designed to meet the developmental needs of infants and toddlers. The guidelines address the kinds of physical activity recommended for infant, toddler, and preschool age groups, the activity environment, and the role of the adult facilitator in children's physical activity. These guidelines have been adapted for the purposes of this Module and are provided below. The full NASPE publication is located in Appendix A.

All Children should participate daily in [3.1.3.1](#)

- two to three occasions of active play outdoors when the conditions do not pose a safety or significant health risk, [3.1.3.2](#)
- two or more structured or caregiver/teacher/adult-led activities or games that promote movement over the course of the day – indoor or outdoor; and
- continuous opportunities to develop and practice age-appropriate gross motor and movement skills.

Physical Activity Guidelines for Infants

- Infants should interact with caregivers in daily physical activities that are dedicated to exploring movement and the environment. Infants should be placed in safe settings that facilitate physical activity and do not restrict movement for prolonged periods of time. [2.2.0.2](#)
- Infants should be taken outside two to three times per day, as tolerated. [3.1.3.1](#)
- Infants should have supervised awake tummy time every day. [3.1.3.1](#)

- Caregivers should place infants in settings that encourage and stimulate movement experiences and active play for short periods of time several times a day. Infants' physical activity should promote skill development in movement.

Those in charge of infants' well-being are responsible for understanding the importance of physical activity and should promote movement skills by providing opportunities for structured and unstructured physical activity.

Physical Activity Guidelines for Toddlers

- Toddlers should be allowed sixty to ninety total minutes of outdoor play. [3.1.3.1](#)
- Toddlers should be allowed sixty to ninety minutes per eight-hour day for moderate to vigorous physical activity, including running. [3.1.3.1](#)
- Toddlers should accumulate at least 30 minutes daily of structured physical activity (such as a dance class).
- Toddlers should engage in at least 60 minutes (and up to several hours) daily of unstructured physical activity (such as playing on the playground); and they should not be sedentary for more than 60 minutes at a time except when sleeping.
- Toddlers should develop movement skills that are building blocks for more complex movement tasks.
- Toddlers should have access to safe indoor and outdoor areas that promote gross motor activities.
- Parents/guardians and caregivers should be aware of the importance of physical activity and should facilitate movement skills.

Physical Activity Guidelines for Preschoolers

- Preschoolers should be allowed sixty to ninety total minutes of outdoor play. [3.1.3.1](#)
- Preschoolers should be allowed ninety to one hundred and twenty minutes of moderate to vigorous physical activity per eight-hour day. [3.1.3.1](#)
- Preschoolers should accumulate at least 60 minutes daily of structured physical activity.
- Preschoolers should engage in at least 60 minutes (and up to several hours) daily of unstructured physical activity; and they should not be sedentary for more than 60 minutes at a time except when sleeping.
- Preschoolers should develop competence in movement skills that are building blocks for more complex movement tasks.
- Preschoolers should have access to safe indoor and outdoor areas that promote gross motor activities.
- Parents/guardians and caregivers should be aware of the importance of physical activity and should facilitate movement skills.

Physical Activity Policy

Every child care facility should have a written policy that promotes physical activity and removes potential barriers to participation in physical activities. [9.2.3.1](#) The policy should capture a schedule of daily activities used to foster incremental developmental progress in a healthy and safe environment and should be flexible to capture the interests and the individual abilities of the children. [2.1.1.1](#) As noted in the above section, the guidelines around physical activity are very specific around the amount of time children should spend in

different forms of activity while they are in care. Within that structure though, there is a great deal of variation as to how programs develop their daily schedule and the kinds of physical activity that is chosen to meet the goals of the guidelines. Programs are encouraged to refer to NASPE (2009) for additional details around policy development and for examples of activities broken out by developmental stage. Child care programs may also wish to incorporate or refer to materials provided by the *Let's Move Child Care* initiative. *Let's Move* is an initiative, spearheaded by First Lady Michelle Obama, the Nemours Foundation and the National Association of Child Care Resource and Referral Agencies (NACCRA), centered on providing simple, easy-to-use guidance and materials around physical activity and nutrition for child care staff and parents/caregivers. (For more detailed information regarding policy development, please refer to NTI's Building Consultation Skills Training Module.)

Physical Environment for Safe Physical Activity

- Children should be allowed to play outdoors only when the conditions do not pose a safety or significant health risk. [3.1.3.2](#)
- The child care facility should select indoor and outdoor equipment that is developmentally appropriate for safety; and for its ability to provide gross and fine motor experiences. [2.1.3.3](#)
- Play equipment should be appropriate with respect to developmental needs, individual interests, and ages of children; and children should always be supervised while playing on playground equipment. [6.2.1.1](#)
- There should be enough space in the outside play area to accommodate children to move freely without running into one another—if an outside play area is inaccessible or unavailable, an indoor play area that is similar in size to the standard outside play area works well. [6.1.0.1](#), [6.1.0.2](#)
- The outdoor play area should be enclosed with a fence or a natural barrier—however these enclosures should not prevent the observation of children by child care staff. [6.1.0.8](#)
- Proper maintenance is key to providing a safe play area; outdoor activity areas should be maintained and hazardous materials removed. [5.7.0.2](#)
- The play area and equipment should be inspected for safety at regular intervals—observations should be documented. [6.2.5.1](#)

(For more detailed information regarding safe play environments, please refer to NTI's *Injury Prevention in Child Care, Part A* Training Module.)

Themes and Activities for Physical Education of Infants, Toddlers, and Preschoolers

- Some active games to play with infants and toddlers are: hide and seek, tag, , and obstacle courses (Callender, 2007)—the possibilities are endless. Children can learn to make physical activity part of a healthy lifestyle.
- Encourage upper-body strength in toddlers by preparing structured activities that require supporting body weight with hands (such as, pushing against a wall) instead of feet.
- Turn off the TV and computer and invite toddlers and preschoolers to roll around on a big, soft, colorful ball, dance to music, play chase, tumble on soft mats, or ride tricycles.
- Engage a group of preschoolers in throwing a ball around in a circle—remembering to keep the activity non-competitive.
- Take preschoolers on walks around the local environment.

Limiting Screen Media[2.2.0.3](#)

In child care settings, media viewing (TV/DVD/videos) and computer use should not be permitted for children younger than 2 years old. During these early years, the brain and the body are going through critical periods of growth and development. Social interactions such as talking, playing, and singing are important rather than passively sitting in front of a screen. For children 2 years and older, total media time in child care settings should be limited to not more than 30 minutes once a week and for educational or physical activity use only. Computer use should be limited as well, to no more than 15 minute increments except for children with special needs who require and consistently use assistive and adaptive computer technology.

Parents/guardians need to be made aware of whether screen media are to be used in child care. Any screen media used should be free of advertising and brand placement.

Lifelong Healthy Nutrition and Physical Activity Habits

Ways the child care caregiver/teacher can help children to develop lifelong healthy eating and physical activity habits are described below.

- Model healthful eating and willingness to try new foods. Eliminate interference at mealtimes by making sure children are comfortably seated around the table and that the TV and computer are off. Sit down with the children, eat the same food they eat, and be sure to practice good table manners. (CDC, 2003).
- Make nutrition and physical activity part of the daily learning environment. Encourage children to learn by doing. Invite them to help wash and prepare foods and create new ways to be physically active. (CDC, 2003).
- Ensure that all play materials support good eating habits by eliminating toys that advertise food brands, and replicas of any food that provides poor nutrition.
- Coordinate with parents/guardians and caregivers to encourage healthy eating habits. Encourage staff to provide parents/guardians with information about the nutrition and physical activity learning activities in the facility so they can reinforce and enhance what their child has been taught. [4.7.0.1](#) The teacher/caregiver may also choose to supplement learning sessions with nutrition and physical activity articles in the child care program's newsletter.

Action Items for the CCHC

The CCHC should

- work with the child care nutritionist/registered dietitian to develop and offer at least two nutrition and two physical activity information/education programs for parents/guardians and caregivers each year. The content of these sessions can be tailored to meet the needs of the child care staff and families; [4.7.0.2](#)
- be able to create a nutrition education activity that a caregiver/teacher could use with 3-5 year old children. The content of these sessions should include learning objectives, the

number of children involved, materials needed, and the procedure/product of the activity, if any;

- be knowledgeable about state regulations for child care nutrition and physical activity in comparison to the *CFOC* Standards (3rd ed., 2011) by obtaining a copy of state regulations. This information is available via the Internet;
- if appropriate, review the facility's physical activity policy and assist in its development; and
- work with child care programs to incorporate the five goals of the *Let's Move Child Care* initiative into policy development activities.

WHERE TO FIND MORE INFORMATION: NUTRITION AND PHYSICAL ACTIVITY

Please note that there is an additional “Where to Find More Information” section below that is specific to resources on breastfeeding.

American Academy of Pediatrics

<http://www.aap.org/obesity/index.html>

American Dietetic Association

<http://www.eatright.org/Public/>

American Dental Association

<http://www.ada.org/>

American Diabetes Association

<http://www.diabetes.org/>

American Heart Association

<http://www.americanheart.org/>

Asthma and Allergy Foundation of America (AAFA)

<http://www.aafa.org>

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<http://www.biomedcentral.com/1471-2458/8/188>

Center for Disease Control and Prevention

<http://www.cdc.gov/growthcharts/>

Child and Adult Care Food Program

Menu Magic for Children

http://www.fns.usda.gov/tn/Resources/menu_magic.pdf

Color Me Healthy (CMH)

<http://centertrt.org/?p=intervention&id=1095>

Eat Well Play Hard in Child Care Settings (EWPHCCS)

<http://centertrt.org/?p=intervention&id=1105>

Egg Nutrition Center

<http://www.enc-online.org/>

Food Allergy and Anaphylaxis Network

<http://www.foodallergy.org/>

Food and Drug Administration

<http://www.fda.gov>

Head Start Body Start

<http://www.aahperd.org/headstartbodystart/>

Healthy Child Care America

<http://www.healthychildcare.org>

I Am Moving I Am Learning (IMIL) and Choosy Kids

http://www.choosykids.com/CK2/hss/region_iii/

Institute of Medicine

Early Childhood Obesity Prevention Policies

www.iom.edu/obesityyoungchildren

International Food Information Council Foundation

<http://www.ific.org/>

Let's Move: America's Move to Raise a Healthier Generation of Kids

White House Task Force on Childhood Obesity

<http://www.letsmove.gov/>

Let's Move Child Care

<http://healthykidshealthyfuture.org/welcome.html>

Kaphingst KM, Story M (2009). Child care as an untapped setting for obesity prevention: state child care licensing regulations related to nutrition, physical activity, and media use for preschool-aged children in the United States. *Preventing Chronic Disease: Public Health Research, Practice and Policy* 6(1): 1-13.

www.cdc.gov/pcd/issues/2009/jan/07_0240.htm

Motion Moments (videos)

National Resource Center for Health and Safety in Child Care and Early Education

http://nrckids.org/Motion_Moments/index.htm

National Association for Sport and Physical Education

American Alliance for Health, Physical Education, Recreation, & Dance

<http://www.aahperd.org>

National Center for Education in Maternal and Child Health

<http://www.ncemch.org>

National Food Service Management Institute

<http://www.nfsmi.org>

National Network for Child Care

Nutrition and Diet

<http://cyfernet.ces.ncsu.edu/nbcc/index.php?c=115>

Nutrition and Physical Activity Self-Assessment for Child Care
NAP SACC
www.napsacc.org

NAP SACC materials & related information
<http://centertrt.org/?p=intervention&id=1091>

NAP SACC Research Articles by Sara Benjamin
http://en.scientificcommons.org/sara_e_benjamin

Nutrition for Kids Newsletter
<http://www.nutritionforkids.com>

North Carolina Department of Health and Human Services
Nutrition Services
<http://www.nutritionnc.com/>

Partnership for Food Safety Education
<http://www.fightbac.org/>

Shape Up America!
<http://www.shapeup.org>

The President's Challenge
<http://www.presidentschallenge.org/>

U.S. Department of Agriculture
Basics for Handling Food Safely
http://www.fsis.usda.gov/Fact_Sheets/Basics_for_Handling_Food_Safely/index.asp

Center for Nutrition Policy and Promotion
<http://www.usda.gov/cnpp>

Child & Adult Care Food Program
<http://www.fns.usda.gov/cnd/care/>

Food and Nutrition Information Center
<http://www.nal.usda.gov/fnic>

Food and Nutrition Service; Nutrition Assistance Programs
<http://www.fns.usda.gov/fns>

Food and Nutrition Service; School Meals
<http://www.fns.usda.gov/cnd/>

Food, Nutrition & Health
<http://www.csrees.usda.gov/nea/food/food.html>

Food safety in the kitchen: A “HACCP” approach

<http://dwb.unl.edu/teacher/nsf/c10/c10links/www.fsis.usda.gov/oa/pubs/haccpkit.htm>

Foodborne Illness and Disease Fact Sheet

http://www.fsis.usda.gov/FactSheets/Foodborne_Illness_&_Disease_Fact_Sheets/index.asp

MyPlate

<http://www.choosemyplate.gov/>

Nibbles for Health

<http://teamnutrition.usda.gov/Resources/nibbles.html>

USDA Meat and Poultry Hotline

Tel: 888/MPHotline (674-6854)

TTY: 800/256-7072

http://www.fsis.usda.gov/Food_Safety_Education/USDA_Meat_&_Poultry_Hotline/index.asp

U.S. Department of Health and Human Services

National Child Care Information Center: State Information

<http://www.acf.hhs.gov/programs/ccb/providers/>

U.S. Food and Drug Administration:

Consumer Advice on Food Safety, Nutrition, and Cosmetics

<http://www.fda.gov/ForHealthProfessionals/FoodSafetyandNutrition/default.htm>

For Kids, Teens, and Educators

<http://www.fda.gov/Food/ResourcesForYou/Consumers/KidsTeens/default.htm>

This website provides a food safety quiz, food safety coloring book, and other games.

101 Family Tips, National Sport and Physical Education

http://www.walk4life.com/news/news_details.aspx?n=3

101+ Snack Ideas

<http://www.betterkidcare.psu.edu/PDFs/101Snacks.pdf>

WHERE TO FIND MORE INFORMATION: BREASTFEEDING

American Dietetic Association Position Statement: Breaking the barriers to breastfeeding

<http://www.healthyweightforkids.org/read/ADAbreastfeed.pdf>

Breastfeeding Friendly Child Care Centers

<http://www.health.state.ny.us/prevention/nutrition/cacfp/breastfeedingspon.htm>

Business Case for Breastfeeding

<http://www.womenshealth.gov/breastfeeding/government-in-action/business-case-for-breastfeeding/>

CDC Breastfeeding Information and Link to Blueprint for Action on Breastfeeding

<http://www.cdc.gov/breastfeeding/>

CDC Guide to Breastfeeding Interventions

http://www.cdc.gov/breastfeeding/pdf/breastfeeding_interventions.pdf

Carolina Global Breastfeeding Institute

Breastfeeding-friendly Child Care

<http://cgbi.sph.unc.edu/child-care>

Kellymom: Breastfeeding and Parenting

<http://www.kellymom.com/>

La Leche League International

<http://www.lalecheleague.org/>

National Women's Health Information Center: Breastfeeding: Best for Baby-Best for Mom

<http://www.virginiahomebirth.com/documents/Breastfeeding%20best%20for%20baby.pdf>

Surgeon General's Call to Action

<http://www.surgeongeneral.gov/topics/breastfeeding/index.html>

Ten Steps to Breastfeeding Friendly Child Care Centers: Resource Kit

http://www.dhs.wisconsin.gov/health/physicalactivity/pdf_files/BreastfeedingFriendlyChildCareCenters.pdf

U.S. Department of Health and Human Services, Department on Women's Health

<http://www.womenshealth.gov/breastfeeding/>

U.S. Preventive Services Task Force Report on Counseling for Breastfeeding

<http://www.ahrq.gov/clinic/uspstf/uspbrfd.htm>

World Health Organization

Guiding Principles for Complementary Feeding of the Breastfed Child

http://www.who.int/nutrition/publications/guiding_principles_compfeeding_breastfed.pdf

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APPENDIXES

Appendix A: Handouts

Active Start: A Statement of Physical Activity Guidelines for Children Birth to Five Years

Appendix B: Additional Resources

Note: The materials for Appendix A are distributed at the on-site NTI training in Chapel Hill. The materials in Appendix B can be downloaded from the Nutrition and Physical Activity link in the “Curriculum” section of the NTI Resources Website and some may also be available for download by the general public on the NTI website at <http://nti.unc.edu/>.

Making Food Healthy and Safe
CARE Connection Resources
Culturally Appropriate Food Resources
Five Tips for Better Menu Planning
Guide to Planning a Healthy Menu
Model Menu
Menu to Improve
Prevent Choking!
Sample body mass index (BMI) charts for boys and girls, ages 2-20
Sequence of Development and Feeding Skills
Tips for Picky Eaters