

Nutrition and Physical Activity

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LEARNING OBJECTIVES

1. Describe the major nutrition recommendations to address issues affecting children and providers in early care and education (ECE) programs.
2. Describe the health benefits and specific national recommendations for physical activity for children in ECE programs.
3. Identify safe practices in food handling, cooking and storage to prevent foodborne illnesses.
4. Describe three ways a Child Care Health Advocate (CCHA) can work with ECE programs to meet the nutrition and physical activity needs of children.
5. Identify key resources to help support ECE providers in implementing the national standards for nutrition and physical activity working with program staff and families.

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RATIONALE for Nutrition and Physical Activity Concepts in this Chapter

Nutrition: Over the past 35 years, the percentage of preschoolers who are obese (>95thile for BMI) has tripled, and of school-age children has nearly quintupled (Ogden, 2006) “One of the basic responsibilities of every parent/guardian and caregiver/teacher is to provide nourishing food daily that is clean, safe, and developmentally appropriate for children. Food is essential in any early care and education setting to keep infants and children free from hunger. Children also need freely available, clean drinking water. Feeding should occur in a relaxed and pleasant environment that fosters healthy digestion and positive social behavior. Food provides energy and nutrients needed by infants and children during the critical period of their growth and development.” (American Academy of Pediatrics et al, 2010)

At home and in ECE programs, young children develop preferences and habits for foods and activities (Birch, 1998). These early habits are likely to continue for the rest of their lives. Children look to adults as models for the foods they prefer (Fisher & Birch, 1995) and for expected levels of activity. Thus, caregivers/teachers have a chance to influence children's food preferences, experiences and expectations in ways that can promote life-long health.

Physical Activity: "Feeding nutritious food everyday must be accompanied by offering appropriate daily physical activity and play time for the healthy physical, social, and emotional development of infants and young children. There is solid evidence that physical activity can prevent a rapid gain in weight which leads to childhood obesity early in life. The early care and education setting is an ideal environment to foster the goal of providing supervised, age-appropriate physical activity during the critical years of growth when health habits and patterns are being developed for life...Active play and supervised structured physical activities promote healthy weight, improved overall fitness, including mental health, improved bone development, cardiovascular health, and development of social skills." (American Academy of Pediatrics et al, 2010)

Many young children spend long hours in child care. Their only opportunity for exercise may be while they are in a group care setting. Young children are completely dependent on their caregivers for opportunities to be active. Recent research suggest that children in child care settings spend only 2-3% of their time in *vigorous* activity and have only 12-46 min of *moderate or vigorous* activity over course of 6 hour day in child care. Increased physical activity has been linked to an increased lifespan and decreased risk of heart disease (American Heart Association, 2005). The Surgeon General's report and Bright Futures (Patrick, Spear, Holt & Sofka, 2001) review the many documented health benefits of physical activity for children, which include:

- increased muscle and bone strength
- reduced blood pressure and total body fat
- better psychological well-being
- decreased risk of obesity

Responsibilities of ECE Providers for Nutrition

Support Healthful Eating

- Provide a variety of foods that help children grow and develop.
- Provide food that respects each child's culture.
- Pay attention to each child's eating behavior— tell the child's parent if the child is not eating enough of the right kinds of food.
- Feed infants when they are hungry.
- Accept temporary food behaviors such as food refusals or insufficient variety, but if unhealthful eating behaviors persist, make a plan with the child's family and health care professional to adjust the child's behavior.
- Teach children about safe preparation, handling and eating of food.
- Encourage breastfeeding and feeding of the mother's milk to her infant when she is unavailable to breastfeed
- Bottle-feed infants when they are hungry, giving them what their health care provider has prescribed.
- Offer food every 2 to 3 hours to prevent children from feeling too hungry.
- Offer snacks only at scheduled times.

- Use non-food items as rewards. Do not use food (treats) as a reward.
- Give children enough time to eat (30 minutes is usually enough).
- Provide enough help so that children feel comfortable eating while still learning to feed themselves.
- Have a friendly, comfortable place for eating— make food time fun time.
- Have children eat with others and encourage them to use this time to develop social and communication skills.
- Help children develop a positive attitude about healthful foods by role modeling and conversation about them.
- Help children develop a habit for eating the right kind and amount of food by recognizing the offering appropriate portions, recognizing the child's signals that the child has had enough, and allowing children to serve themselves the amount they desire whenever possible.
- Support the relationship between children and parents generally, but especially around eating issues.
- Plan activities that foster children's development of healthful eating habits, and their understanding of how food grows and is prepared from harvest to table.
- Encourage all ECE providers to take care of themselves—eat well to stay healthy, feel good and have energy to take care of children while being a good role model for children, other staff and parents. Caregivers should not eat foods or drink beverages that are inappropriate for children in front of the children.

Food and Safety

- Ensure everyone routinely practices hand hygiene and sanitation in all aspects of food handling
- Provide food that is safe to eat. (When in doubt, throw it out.)
- Prevent injuries when preparing, handling and eating food.
- Keep written policies, procedures, and health records.
- Keep confidential health records to record children's nutrition and health, keep track of food allergies, know whom to contact if you need a medical decision about a child, and inform the parent about the child's health and nutritional status to enable them to share this information with health care professionals and follow-up on a specific problem.
- Know and follow policies and procedures about caring for sick children.
- Make sure all ECE providers know how to prevent food-related illness and injury to themselves and the children.
- Comply with the requirements for the U.S. Department of Agriculture Child and Adult Care Food Program – even if your program does not participate in this federally funded feeding program.

(Graves, Suitor & Holt, 1997 and Benjamin, SE, ed. *Making Food Healthy and Safe for Children: How to Meet the National Health and Safety Performance Standards—Guidelines for Out-of-Home Child Care Programs*. Second Edition. Chapel Hill, NC: The National Training Institute for Child Care Health Consultants, Department of Maternal and Child Health, The University of North Carolina at Chapel Hill; 2007.)

Why Young Children Are at Risk

- Young children depend on adult caregivers (parents, family members, ECE providers) to teach them healthy eating habits and to offer them good food choices. If children see adults eating foods that are poor in nutrients, they may copy these unhealthy habits (Fisher & Birch, 1995).

- Children who do not get enough nutrients, may become obese and have serious health problems as teenagers and adults. This can happen even when they overeat if their foods are not nutrient-rich.
- Children must eat food that is rich in calcium, iron and other nutrients. They should eat small portions of food that meets their energy requirements. These portions must contain the nutrients their bodies require.
- Some parents may prepare foods based more on convenience than on nutrition. Meals made from packaged foods or take-out foods are usually high in additives and preservatives, and often are poor in nutrients, compared to more planned meals that may take time to prepare.
- Children are targets of powerful marketing strategies by food companies. Often, the sponsors of children's television shows are makers of processed foods and highly sweetened snacks. Children are vulnerable to these advertisements. Developmentally, they lack the ability to recognize the misleading information in advertisements that are trying to persuade them to eat advertised foods.

What the Research Tells Us

- Illness among infants can be reduced by increasing the proportion of infants in a community who are exclusively breastfed (no other foods) for at least 4 months, and preferably for the first 6 months of life and then, who continue breastfeeding at least to 12 months of age in conjunction with age-appropriate foods. (Wright, Bauer, Naylor, Sutcliffe & Clark, 1998, American Academy of Pediatrics, Policy statement: Breastfeeding and the use of human milk, 2005). Breastfeeding reduces some of the risks that are greater for infants in group care than for those cared for solely in their own homes. Scientific evidence is strong for reduction in episodes of diarrhea, respiratory disease, ear infections, blood infections, meningitis, botulism, urinary tract infections, bowel infections, SIDS, insulin-dependent diabetes, lymphoma, allergic disease, and other chronic digestive diseases. Less strong, but suggestive evidence exists that breastfeeding is associated with enhanced cognitive development, and reduces the risk of childhood obesity. The benefits for the breastfeeding mother include a lowered risk of diabetes, breast cancer and heart disease. (Stuebe, Schwarz, 2009)
- ECE staff can affect life-long health status by supporting the efforts of mothers who continue to breastfeed after returning to work or school. (American Academy of Pediatrics, 2009)
- Lack of iron is the most common nutritional deficiency in the United States and the rest of the world. Recent research found that iron-deficiency anemia and iron deficiency without anemia during infancy and childhood can have long-lasting detrimental effects on neurodevelopment. From 12 months to 3 years of age, children should get enough iron by eating foods rich in iron (red meats, cereals fortified with iron, vegetables that contain iron and fruits that have vitamin C which fosters absorption of iron. Those who do not eat these foods need iron supplements such as chewable multivitamins that contain iron. Preterm infants do not get the extra iron transferred from the mother to the baby toward the end of pregnancy. Their special iron needs require instructions from their health care providers. (American Academy of Pediatrics, 2010). To prevent iron deficiency, the American Academy of Pediatrics recommends:

- Breastfed infants should have iron supplements beginning at 4 months of age until they start eating iron-fortified cereal, usually when they are 6 months old, or in some cases as early as when they are 4 months old.
 - Formula-fed infants should receive enough iron in their formula and iron-fortified cereal, and then between 6 and 12 months of age by having red meat and vegetables with higher iron content. Those who do not eat these iron-rich foods will need iron supplements
 - No infant should be fed whole milk before 12 months of age since whole cow's milk causes small amounts of bleeding in the gastrointestinal tract of the majority of infants.
- Variety in the diet is also linked to better and more balanced nutrition (Dodds, Benjamin & Walsak, 2004).
 - Obesity is a serious health concern for children and adolescents. The National Health and Nutrition Survey of 2007-08 found 17% of the nation's children are obese. Among pre-school age children 2-5 years of age, 10.4 % were obese. Among 6-11 year olds, 19.6% were obese. If overweight begins before 8 years of age, obesity in adulthood is likely to be more severe. (<http://www.cdc.gov/obesity/childhood/> accessed 11-16-10) Health professionals identify children who are overweight and obese using the body mass index or BMI. BMI is weight (in kilograms) divided by height squared (in meters). It is a way to measure how heavy people are relative to one another, even though they are different heights and weights. Children between the 85th and 95th percentile of body mass index (BMI) by sex and age are considered overweight. Those who are above the 95th percentile are considered obese. Being overweight may start in early childhood. It is linked to later health problems in adulthood: high blood pressure, Type 2 diabetes and increased risk for coronary heart disease (Freedman, Khan, Dietz, Srinivasan & Berenson, 2001). Obesity occurs when individuals consume more calories than their bodies use. The imbalance between calories consumed and calories used results from the influences and interactions of genetic, behavioral, and environmental factors. Childhood obesity rates are increasing because of poor nutrition and inactive lifestyles (Christoff el & Ariza, 1998; Mei, Scanlon, Grummer-Strawn, Freedman, Yip & Trowbridge, 1997; Ogden, Troiano, Briefel, Kuczmarski, Flegal & Johnson, 1997). See <http://www.cdc.gov/obesity/childhood> for additional information about this widespread problem.

Issues That Arise in ECE Programs

- The amount of nutrients that children receive each day when they eat both at home and at their ECE program may not be balanced or different enough if parents and ECE staff do not coordinate what they offer children daily in each setting.
- Food brought from home may not be developmentally or nutritionally appropriate, or transported in a safe manner. Food must be wholesome when it is time for the child to eat. Food brought from home should have labeling indicating the child's full name, the date and type of food. Children often engage in unplanned sharing of food brought from home. This puts other children at risk of food poisoning or exposure to food allergens from unknown ingredients, as well as from unsafe procedures used in home preparation, storage and transport.

- Food safety for group care requires knowledge and skills beyond those usually acquired by cooking in the home. Food served to children must be free from disease-causing chemicals or germs. Foods safe for children to eat are those not likely to cause choking; those that are clean and wholesome; are safely prepared, served and stored; and are right for the children's age and development (Graves et al., 1997). Even a small amount of carelessly stored or prepared food can make a young child very ill. The types of germs commonly involved are the bacteria [Campylobacter](#), [Salmonella](#), and [E. coli O157:H7](#), and a group of viruses that include rotaviruses, noroviruses, adenoviruses and other viruses. The Centers for Disease Control and Prevention (CDC) has good information about food-borne illnesses. They report that "an estimated 76 million cases of foodborne disease occur each year in the United States. While the great majority of these cases are mild and cause symptoms for only a day or two, some cases are more serious... The most severe cases tend to occur in the very old, the very young, those who have an illness already that reduces their immune system function, and in healthy people exposed to a very high dose of an organism... An outbreak of foodborne illness occurs when a group of people consume the same contaminated food and two or more of them come down with the same illness. It may be a group that ate a meal together somewhere, or it may be a group of people who do not know each other at all, but who all happened to buy and eat the same contaminated item from a grocery store or restaurant. For an outbreak to occur, something must have happened to contaminate a batch of food that was eaten by a group of people.... A contaminated food may be left out a room temperature ..., allowing the bacteria to multiply to high numbers...A foodborne outbreak is an indication that something needs to be improved in our food safety system... First, emergency action is needed to keep the immediate danger from spreading, and second, a detailed objective scientific investigation is needed to learn what went wrong, so that future similar events can be prevented." www.cdc.gov (accessed 11-16-10) Food-borne illness is completely preventable when those who prepare meals and snacks are educated in safe food handling practices. For more detail, see Benjamin, S.E. ed 2007. *Making food healthy and safe for children: How to meet the national health and safety performance standards-Guidelines for out-of-home child care programs*. 2nd ed. Chapel Hill, NC: at <http://nti.unc.edu>.
- Monitoring food storage, preparation and serving areas using a standard tool based on *Caring for Our Children* (AAP et al., 2011) raises awareness of the issues that workers in these areas need to understand and embrace. Pennsylvania's 2010 ECELS Health and Safety Checklist - Version 1.3 – May 2010 has some items that are specific to safe food handling in a child care setting. This tool is on the ECELS website, www.ecels-healthychildcarepa.org. Locate the checklist by putting the title into the search box or select the section heading for "Health Professionals," and then the subsection "Health Consultant Role." Welcome an inspection by a sanitarian at the child care facility. Seek the inspector's recommendations to improve the food preparation and food service. In many areas, the public health authorities are required to perform such inspections routinely in facilities accessible to the public. Other communities lack the staff to perform inspections routinely, but will provide an inspection on request.
- Frequent staff turnover and insufficient staff makes consistent implementation of best practices for nutrition difficult. Caregivers/teachers may lack strong training in the guidelines for good nutrition. They may not be aware of the specific nutrition and feeding needs of children at different developmental stages or know how to feed children with disabilities and other special needs.

- Food served in ECE programs must both meet children’s nutritional needs and be appealing to them. Because children can eat only small servings of food at a time, their food should be rich in nutrients. The regulations, policies and guidance materials on meal requirements of The Adult and Child Care Food Program (CACFP) provide the foundation for sound nutrition and sanitation practices. The CACFP guidance for meal and snack patterns is evidence-based, using current nutrition science. Whether or not a program is eligible for reimbursement under the CACFP regulations, the program should use the CACFP guidance for best practice. Age-specific guidance for meals and snacks for children and adults is available at http://www.fns.usda.gov/cnd/care/ProgramBasics/Meals/Meal_Patterns.htm (accessed 11-19-10).
- Infants whose mothers are breastfeeding need support to continue to make human milk available to their babies, even when they are separated for some feedings. Programs should provide arrangements and support for breastfeeding. They should be one of the mother’s cheerleaders for the mother’s plan to provide her milk to her baby. This includes providing a refrigerator/freezer for storage of breastmilk, a designated private area (not a toilet room) where mothers may nurse their babies before leaving them at the ECE program, having an outlet to use an electric breast pump to maximally produce their milk, and facilitating the mother’s nursing whenever possible for feedings during the day, before leaving and when rejoining the infant after separations. For additional suggestions about ways to help a mother to breastfeed successfully, see *Caring for Our Children, Requirements for Infants, General Plan for Feeding Infants*.
- ECE programs should promote good eating habits. Encourage children to try new foods, or familiar foods prepared in new ways. Children who eat a variety of foods at a young age are more likely to continue to eat many different foods as they grow older. This variety can be achieved when ECE programs make meal and snack times enjoyable and interesting so that children will want to join in.

Challenges for Children and Families

ECE programs have unique challenges for meeting the goals of safe and healthy nutrition.

- Parents may not be aware of the components of a nutritious diet. The foods they provide for feeding at child care may have poor nutritional value or are improperly prepared and transported to the child care setting.
- Breastfeeding mothers may find it difficult to continue exclusive breastfeeding after going back to work or school. They need to be reassured that any amount of human milk is beneficial, and that keeping to a rigid routine is neither necessary nor desirable. More frequent feedings whenever the mother and infant are together help to maintain milk supply.
- Parents and ECE providers may have different beliefs and attitudes about food. Cultural food preferences may not be correctly observed in ECE programs and may cause feeding difficulties or ECE provider-family conflicts. ECE providers should try to provide food from a variety of cultures to teach children about the world around them (American Dietetic Association [ADA], 1999).

- Young children may resist trying new foods, making it difficult to correct any known or developing deficiencies. All children should be screened for anemia at about 12 months of age with a blood test and a history taken for risk factors for iron deficiency. Child care providers need to know whether the results of such screening identify special needs for iron-rich foods. The risk factors for iron deficiency include low socio-economic status, prematurity or low birth weight, exposure to lead, exclusive breastfeeding without supplemental iron, use of whole milk, feeding problems, poor growth, and inadequate food intake common to children with some types of special needs.
- Food brought from home should fit with the ECE program's nutritional philosophy. ECE programs may need to discourage or even prohibit families from bringing unhealthy or unsafe food choices to the program, whether for their own child or for planned sharing with others during celebrations. To the extent possible, celebrations should focus on activities and not on sweets. Food choices can evoke strong emotional responses, so staff may need support in enforcing the program's food policies in a way that is respectful and fair to all. The facility should have policies for foods brought from home so that the expectations are the same for all families. Foods brought from home should be limited to those listed in the facility's written policy on nutritional quality of food brought from home. Perishable foods that should be refrigerated should be at refrigerator temperature when they arrive at the facility (40°F) and protected from contamination. Spot checks using a food thermometer should be used if there is any question.
- ECE professionals are encouraged to serve meals family style to children (Graves et al., 1997). Some ECE providers think this is too messy, or too difficult to supervise to prevent contamination by a child of food intended for other children. However, serving yourself is an important learning activity for children. Letting children serve themselves allows them to decide how much they will eat, with guidance from teachers, and reduces waste. Caregivers/teachers should sit at the table with the children and eat what they are eating. (Graves et al., 1997 AAP et al, 2011). Except for infants and children who require an adult to feed them, the serving platters, bowls, a separate serving utensil for each food container and pitchers should be on the table so all present can serve themselves. The food should be in a form and provided with a serving utensil so a child does not handle foods that other children will eat. Children should be encouraged, but not forced to help themselves to each type of food served. Adults should eat the same items that meet nutrition standards, while supporting social interaction and conversation related to the food being eaten (e.g. color, shape, size, quantity, temperature, source) and the day's activities. Caregivers/teachers should accommodate any special needs the children may have. For example, some children cannot have specific foods or because of a weight problem, need management of portion sizes. To avoid having the adult get up during the meal, try to have the next course or extra items that might be needed later in the meal at arm's length, perhaps on a cart or side table. If necessary, put tables together to make sure that all children have an adult eating with them. To make the adult comfortable at a child sized table with the children sitting on chairs that allow their feet to rest on a firm surface, the adult may need to use an adult-sized chair if it is more comfortable. Other accommodations could include using a lap tray to eat so that the adult can be comfortable while eating and showing the children how to eat while sitting up rather than trying to eat while sitting in a child-sized chair. Adults are role models for using utensils, choosing and eating foods, and behaving in socially acceptable ways at the table. Caregivers/teachers help shape children's eating behavior.

- Many adults like cups with lids that have an extension with holes for the child to suck on (“Sippy cups”) because there is less spilling. To encourage successful self-feeding and promote oral health, infants and toddlers should drink from an appropriate child-sized cup. However, Sippy cups are not recommended because they increase the contact of sugar-containing fluids (milk, juice) with the teeth that promotes tooth decay. Cup drinking is best taught with a regular cup, even though spills will occur.
- Self-feeding as early as possible is desirable, even when it is messy. Toddlers should have a child-sized eating utensils such as a wide-bowl spoon, and a fork with short tines and be allowed to use their fingers for self-feeding. At no time should children walk around while eating or drinking, or take their drinks to bed with them. One adult should not feed more than one infant or three children who need adult help with feeding at the same time. Children who are learning self-feeding should have an adult sitting within arm’s reach. When eating, children of any age should be within sight of an adult at all times to recognize a child who is choking, but not making any noise as well as for monitoring of eating behavior. (AAP, 2010)
- Parents and other caregivers need to know about age-appropriate portions, types of food and frequency of feeding. According to the recommendations of the Child and Adult Care Food Program (CACFP) guidelines for children and adults, meals and snacks should be spaced about two hours apart, with at least 3 hours from the end of one meal to the beginning of the next meal. Use of small, frequent feedings using bowls or plates appropriate to the intended portion size for the meal or snack teach portion control, tend to foster a pace of eating associated with appropriate eating behaviors, and meet children’s needs for growth and activity. Food sprees and refusals are common in early childhood, and should be accepted without comment. For details in planning meal portions and menus, go to http://www.fns.usda.gov/cnd/care/ProgramBasics/Meals/Meal_Patterns.htm, the CACFP website. Usually sufficient food should be available to respond to a child who asks for a second serving of nutritious foods that are low in fat, sugar and sodium.

Recommended Nutrition Guidelines

- The Dietary Guidelines for Americans (2005) are scheduled for update in 2010. These and the CACFP suggest foods at each meal and snack that encourage wise choices from every food group and help get the most nutrition from the calories eaten. The MyPyramid website of the United States Department of Agriculture, www.mypyramid.gov, has extensive, easy-to-understand instructions, materials and interactive tools. This richly populated site includes an on-line tool to calculate the appropriate food intake for an individual by providing the person’s age, gender, height, weight and physical activity level. Other interactive features are a menu planner as well as a child cost calculator to help families understand the usual cost of raising a child to age 18 based on current expense levels. Explore this site for information and handouts to educate caregivers/teachers, children and families.
- Food used for modification of behavior: Food should not be used to bribe or punish children to avoid putting undue value on food that may lead to negative eating behaviors, lasting food dislikes and unhealthful eating behaviors.

- Food choices: Emphasize fruits, vegetables, whole grains, and fat-free or low-fat milk products. Include lean meats, poultry, fish, beans, eggs and nuts. Offer foods low in saturated fats, trans fats, cholesterol, salt and added sugars.
- Meal and snack patterns: Plan what is offered by age and hours in care. Feedings for shorter times in care are determined by the required intervals between feedings:
 - In care for 8 and fewer hours per day: offered at least one meal and two snacks or two meals and one snack
 - In care for more than 8 hours per day: offered at least two meals and two snacks or three snacks and one meal
 - If not offered breakfast provided within three hours of lunch: offered a midmorning and mid-afternoon snack
 - If not asleep: offered food at intervals of at least two hours apart and not more than three hours apart
 - Allowed time to eat without being rushed, but not allowed to play during times for meals or snacks
 - If being breastfed, offered feedings in collaboration with the parent's feeding routines so that over 24 hours, the infant is fed in response to the infant's cue, the family's feeding preferences and the recommendations of the child's health care provider.
- Drinking water: Make drinking water available indoors and outdoors throughout the day and after eating any food when tooth brushing is not done, except for infants under 6 months of age who are being exclusively fed human milk. An exclusively breast-fed infant who is thirsty should receive more human milk.
- Fruit juice: Do not give fruit juice to any child who is less than 12 months of age. When children are offered fruit juice, it should be unsweetened, 100% juice. Fruit juice can be diluted with water. It should be offered only by cup and only at a meal or snack time. Total juice intake should not exceed 4-6 ounces in a whole day, including any juice consumed away from the ECE program. Eating a wide variety of fruits is better than drinking fruit juices. Fruit juices concentrate fruit sugars without the benefit of the fiber in whole fruits.
- Milk: Do not give children less than 12 months of age any cow's milk. Between 12 and 24 months of age, children who are not drinking human milk or prescribed formula should be served whole pasteurized milk. Those with a risk for obesity or hypercholesterolemia may have reduced fat (2%) milk. After 2 years of age, children should have skim or 1% pasteurized milk. When children in a particular group require different types of milk, label the serving containers with stickers of labels in different colors or with clearly different figures, so that the label tells which milk is the right one for each child.
- Vegetables: Offer vegetables from all five vegetable subgroups - dark green, orange, legumes, starchy vegetables and other vegetables. A good way to communicate these concepts is to encourage children and adults to "eat your colors."
- Serving Sizes: Controlling children's portion size is important. Recent research has shown that the amount of food children an adult gives a child is an important part of how much children eat. (Mrdjenovic & Levitsky, 2005). Initial portions should be age-appropriate, and served using plates or bowls that appear filled by the portion. However, unless the child's health care provider specifies a written plan that directs otherwise, allow children to ask for

and receive more food that is low in fat, sugar and sodium if they are still hungry. Nutritious snacks should count toward the desired daily intake.

- Where Children Eat: Children should not eat while standing, walking, running, playing, lying down, using media (e.g. TV, computer, electronic games, reading books) or riding in vehicles. Allowing these inappropriate eating behaviors involves choking hazards, increases the risk of tooth decay, limits appropriate socialization during meals and snacks, and increases the risk of obesity through inappropriate eating cues. (Benjamin, 2007)
- Food as Nourishment, Not a Behavior Management Tool: Food should not be used to bribe or punish children to avoid putting undue value on food that may lead to negative eating behaviors, lasting food dislikes and unhealthful eating behaviors.

The Nutrition Plan

Developing a written nutrition plan is an essential step to meet children's nutritional needs in ECE programs. The plan should be written or reviewed by a qualified Nutritionist/Registered Dietician. Caregivers/teachers, directors and food service personnel share responsibility for carrying out the plan. The plan should include the following:

- Kitchen layout
- Food budget and service
- Food procurement and safe food storage
- Safe food preparation, kitchen cleanliness and sanitation
- Kitchen and mealtime staffing
- Menu and meal planning including periodic review of menus to ensure healthful food choices are offered to meet the nutritional needs of all children. Families should receive menus at least one month in advance, showing all foods to be served. Families need to know about the food served to their children in the ECE program so they can coordinate their food choices for the children at home. Giving families the menus informs them about good nutrition too. For sample menus and menu planning templates, contact the state extension service and search the website of the Child and Adult Care Food Program. Menus should be updated to reflect seasonally available foods and whenever any change occurs in what will be or is actually served. The menu for what was actually served should be dated, and retained for at 6 months or longer – enough time so they are available for the nutritionist to review the quality of what was served and plan for the next cycle of menu planning.
- Child feeding practices and policies including correct infant feeding practices, healthy menu planning, specific plans directed in writing by a health care provider for children with special dietary needs such as a food allergy or intolerance. Infant/toddler feeding plans should take into account developmental readiness for children to progress to a variety of new foods.
- Activities that reinforce healthful habits, emphasize a positive and enjoyable social atmosphere during mealtimes, and are developmentally appropriate.
- Integration of food and feeding experiences as a component of the curriculum, coordinated with home feeding to allow children to develop a life-time ability to make appropriate food choices. Nutrition education activities should teach children the taste, smell, shape, texture, portion sizes, and nutritional value of foods, as well as language related to food and the pleasure of socializing while eating.

Finding a Nutritionist

A qualified nutrition professional has experience and education in pediatric nutrition, and documentation from previous work settings of competence in basic food service systems. The education of this professional should include normal nutrition, nutrition for children with special needs, and how to make dietary modifications in group settings. *Caring for Our Children, 3rd edition, 2011* standards recommend the following places that child care programs can look for nutritionists to work on the Nutrition Plan and provide necessary consultation:

- Local and state health departments, maternal and child health programs, and agencies that address children with special health needs
- Hospital nutrition departments, especially children's hospitals
- The Women, Infants, and Children (WIC) Supplemental Food Program
- State Cooperative Extension nutritionists
- School food service personnel
- State administrators of the Child and Adult Care Program
- National School Food Service Management Institute
- Nutrition consultants who are members of the following organizations
 - American Dietetic Association
 - American Public Health Association
 - Society for Nutrition Education
 - American Association of Family and Consumer Sciences
 - Dairy Council
 - American Heart Association
 - American Cancer Society
 - American Diabetes Association
 - Professional home economists at consumer organizations, or who are teachers
 - Nutrition departments of local colleges

Feeding Specific Age Groups

Infants and Young Toddlers

Infants in ECE programs should be fed according to the meal and snack patterns in the Child and Adult Care Food Program (CACFP) and as specified in written instructions from the child's family or the child's health care provider. See AAP et al, *Caring for Our Children, 2011* for detailed guidance, rationale and suggested implementation.

- Bottles to feed milk to infants: Glass bottles or plastic bottles or bottle inserts labeled BPA Free or #1, 2, 4 or 5 are acceptable. Avoid plastic bottles with BPA or phthalates (labeled #3, 6, 7) because of the possibility that these chemicals can upset regulation systems in the child's body.
- The Feeding Experience: For an infant, the feeding experience is an essential component of building a warm, trusting relationship with caregiving adults. The infant needs this type of relationship for healthy brain development. The number of caregivers with whom an infant can develop such relationships is not known. However, infants who are fed by many different people may not develop well. Therefore, whenever possible, the same caregiver/teacher should feed a specific infant for most of that infant's feedings. Feeding should be a one-on-one experience for the infant. Until the infant can competently sit up and

hold a feeding bottle while seated in a high chair, caregivers/teachers should always hold infants and make eye contact with the infant during feedings. Bottle feeding should be as close to breastfeeding as possible, holding the infant close and alternating sides of the caregivers lap used during the feeding. Since infants swallow air during feedings, plan for breaks in feeding for burping. Allow the infant to stop the feeding rather than trying to feed a specific amount. To avoid early childhood caries (cavities), feed only when the child seems hungry. More frequent or prolonged sipping of milk (or any sugar-containing beverage) fosters tooth decay. Bottles should never be propped, fed in cribs, or carried while the child is walking around or standing. For formula-fed infants, learning cup feeding should begin as soon as infants can sit up by themselves, and best taught with a small cup without a lid so the infant learns to feel and respond to the fluid in the cup as it touches lips and tongue.

To help prevent underfeeding or overfeeding, parents and ECE providers should feed on the infant's cue unless both the parent and the child's primary health care provider give written instructions otherwise. Feeding on cue meets both the nutritional and the emotional needs of the baby. The cues that indicate that the child is ready to feed include the infant's opening the mouth, making suckling sounds and moving his/her hands at random. A hungry infant should not be offered a pacifier until after the feeding, and usually limited to when the infant is put down to sleep. Crying should not be used as a feeding cue. There are many reasons why infants cry. They may be seeking comfort from interaction or some other cause. Infants should not be fed to stop their crying when other causes may be involved. However, infants should not have to be hungry enough to cry before being fed. This suggests that earlier cues of readiness for feeding were missed. Over-feeding an infant who was hungry at the start of a feeding is undesirable as well. Caregivers should not feed infants beyond their cues that they are full. These cues for satiety include turning away from the nipple, increased attention to the surroundings, keeping the mouth closed or indicating "no" in any other way. Following the infant's cues requires great sensitivity and flexibility that makes having sufficient and consistent caregiver/teachers for infant groups essential.

- Breastfeeding and Feeding Human Milk: Breastfeeding fosters attachment and has many health benefits for the infant and for the mother. Many national and international health organizations recommend exclusive breastfeeding for the first 6 months of life. Thereafter, gradual addition of age-appropriate solid foods to supplement breastfeeding, with breastfeeding for at least for the first year if not longer. Human milk has components that help the infant resist infection and is more digestible than any other type of milk or formula. Early care and education programs are key sources of support for breastfeeding mothers who use non-parental care when they are away from their infants. Caregivers/teachers should vigorously support and promote sustained breastfeeding, encouraging mothers to breastfeed whenever they can. Keeping to a daily schedule is not necessary. Note that direct feeding from the breast empties the breast and maintains milk supply better than even the best electric breast pump. Nursing mothers should pump and supply their milk to be fed when direct feeding from the breast is not possible.

Ways that ECE staff can support successful breastfeeding include:

- Providing a quiet, comfortable and private place to breastfeed so it is easy for the mother to respond to the natural process that allows her to "let down" her milk
- A place for the mother to wash her hands
- A pillow to support her infant or herself during nursing
- A stepstool to put under the mother's feet to raise her infant on her lap toward her breast
- Drinking water for the mother to maintain her hydration

- At enrollment, suggest having another person teach the child to feed human milk at home from a bottle before the infant needs to be fed at the ECE facility. Sometimes an infant will take a bottle better if the mother is not in the area where the infant is being fed.
- Ask the breastfeeding mother to provide a labeled back-up supply of frozen or refrigerated breast milk in case the mother's arrival is delayed or the infant is hungry during the day and needs more milk. Since human milk changes in composition as the infant grows, these supplies should be rotated to be sure that fresher human milk is available for feedings of the older infant.
- Talk to the mother about coordinating her own and her infant's schedule to time feedings so the infant can have a last feeding before leaving the infant and the first feeding after pick-up at the ECE facility. This will maximize and sustain breast milk supply as well as provide a comfortable transition to the separation for both the infant and the mother.
- Be sure everyone at the facility involved with the breastfeeding family in any way know how to handle human milk, support and promote breastfeeding.
- When parents bring human milk from home, it should be in a clean and sanitary sealed container to prevent spilling. Only a clean and sanitized bottle or the equivalent plastic bag manufactured to be used as a bottle insert and nipples should be used in feeding. The container should be clearly labeled with the infant's full name, the date and time the milk was expressed. The container should be stored in the refrigerator immediately upon arrival at the child care facility. Only the infant's own mother's milk should be fed to a baby. Infant formula should not be given to a breastfed baby without the mother's written permission.
- Non-frozen human milk should be brought in the container that will be used to feed the infant. Use the storage guidelines from the Academy of Breastfeeding Medicine (ABM, 2010) and the Centers for Disease Control and Prevention (CDC website 11/17/10) in Table 1 below:

Table 1			
Guidelines for Storage of Human Milk that was Never Frozen			
Location	Temperature	Duration	Comments
Countertop or table	Room temperature (up to 77°F, 25°C)	6-8 hours	Keep containers covered and as cool as possible; covering the container with a cool towel may keep milk cooler
Insulated cooler bag	5°F to 39°F or -15°C to 4°C	24 hours	Keep ice packs in contact with milk containers at all times, limit opening cooler bag
Refrigerator	39°F or 4°C	5 days	Store milk in the back of the main body of the refrigerator where temperature is less affected by opening the refrigerator door
Table 1 continued: Guidelines for Storage of Frozen Human Milk			
Refrigerator's freezer section	5°F or -15°C	2 weeks	Store milk toward the back of the freezer, where temperature is most constant. Milk stored for longer is safe, but some of the lipids (fats) in the milk undergo degradation resulting in lower quality
Separate freezer compartment of refrigerator with separate door	0°F or -18°C	3-6 months	
Chest or upright deep freezer	-4°F or -20°C	6-12 months	

- Frozen human milk may be stored in single use bottle inserts. Encourage mothers to store some milk in quantities that the infant is likely to consume at one time, and some in smaller quantities to use thereafter if the infant seems to want more. Once frozen milk is defrosted, it must be used within 24 hours. Defrost frozen human milk in the refrigerator or under cool running water. The milk may be swirled gently to distribute the heat in the milk while the container is in water no warmer than 98.6°F. Shaking or vigorous agitation of human milk breaks valuable cell components in the milk. The oldest milk should be used first, checking carefully the name of the baby with the name on the milk to prevent mix-ups. Any container of human milk that was not used for feeding the day it arrived at the ECE facility may be returned to the mother at the end of the day if it is not being saved for a subsequent feeding.
- If human milk intended for one child is inadvertently fed to another child, the incident must be treated as a potential exposure to infections such as hepatitis B, hepatitis C or HIV that are spread via body fluids. The mother whose milk was mistakenly fed must be informed and asked about her previous testing for these infections and her willingness to be tested if she has not been tested before. The family of the child who received the milk by mistake must be informed about the date and time the milk was expressed and about the results of testing of the mother who expressed the milk. While the risk of transmission of these infectious diseases is low, the family should discuss the incident with the child's health care provider. (See AAP, 2011 for details.)
- Formula: Infant milk formula should come to the ECE facility in a factory-sealed container and should be the same type as fed to the infant at home. Follow the manufacturer's instructions on the container for preparation and storage of formula. Ready-to-feed, liquid concentrate and powdered forms are acceptable. Powdered formula is less costly to buy than liquid forms. Be sure to follow the recommendations of the child's health care provider about using fluoride-containing water to prepare formula since the availability of fluoride in the drinking water varies from community to community.
 - Some infants use special formulas such as soy or elemental formulas that are easier to digest and less allergenic. These should be specified in the infant's care plan. These formulas should be iron-fortified. Label each prepared bottle with the child's full name and date of preparation.
- Left-over prepared formula, human milk or any other food that has been fed: any food that has been fed to an infant must be **discarded within one hour after feeding because feeding introduces bacteria into the food**. It is safe to keep supplies of prepared formula (other than factory-sealed ready-to-feed containers) for 24 hours in the refrigerator if they have not yet been fed and have been kept refrigerated.
- Temperature of Milk or Food for Feeding to Infants: Warming defrosted human milk, formula or other infant foods is not necessary. Some infants may prefer cold foods while others like their foods warmed slightly. If milk or another food is to be warmed, then the food container should be put under running warm tap water or put in a container of water that is no more than 120°F for no more than 5 minutes. Otherwise, bacteria can grow to unsafe levels in the food. If a crock pot or similar device is used, it must be kept out of children's reach, checked with a thermometer to be sure the temperature of the warming water is not more than 120°F, emptied, cleaned, sanitized and refilled with fresh water daily. Do not use microwave ovens to defrost or warm milk or other food for infants because uneven hot spots in the food can burn the child.

- **Solid Foods:** Feeding of solid foods should start at six months of age, or, if recommended by the child's health care provider, as early as 4 months of age. Early introduction of solid food and fruit juice interferes with the intake of human milk or infant formula that the infant needs. The American Academy of Pediatrics recommends supplementing with vitamin D for breastfed infants begin soon after birth, and supplementing with iron at six months of age if the infant is not consuming iron-fortified cereal and meat. The family should give these supplements to the child at home. Signals of infants' readiness to eat solid food include their ability to hold their head steady, open their mouth and lean forward toward the food source, close their lips around a spoon, and transfer the food from the front of their mouth to the back where they swallow it. Introducing new foods to children under 18 months of age may require offering the food 8-15 times before the food is accepted, (AAP, 2011)
Caregivers/teachers should have a list from the child's family of foods the child has already eaten without a problem and serve some of these foods. Introduction of new foods should be planned with families.

Caregivers/teachers should use only spoon feeding of solid foods. These foods should be commercially packaged or made at home. Foods brought from home must arrive at the child care facility at a safe temperature (below 40°F.) Feed all infant foods from a dish, not from a factory-sealed container, or from the container brought from home. This allows close inspection of the food for glass pieces or foreign materials. Discard uneaten food in a dish from which the child is fed. Unused portions that were not fed may be kept in a refrigerator for no more than 24 hours before being discarded.

Toddlers and Preschool Age Children

Toddlers may slow their pace of eating, become distracted or notice surroundings more, play with food, throw food, want to leave the table or chair, or leave food on the plate. After infancy, the pace of growth and need for food lessens. Caregivers/teachers should accept signals from the child that the child has had enough. Since portions consumed may be very small, whatever the child eats should be nutritious. Offer meals and snacks following the CACFP guidelines.

Developmentally, toddlers are expected to try to be in control of as many aspects of their daily activities as possible. This leads them to say "no" when asked if they want something. They usually respond best when offered a choice between two alternatives that are acceptable choices. Adults are responsible for deciding what type of food to offer and when to offer it. Meals and snacks should be healthy, safe and age-appropriate. However, children are responsible for what and how much they eat. Healthy children will eat what they need from nutritious food offered to them and should not be forced to eat. (Graves et al., 1997)

If a child falls asleep while eating, then put the child down to sleep, after checking for food left in the child's mouth that might cause choking. When adults force young children to eat more than what they want, the children learn to ignore their signs of hunger and fullness. If left to decide how much or when to stop eating because they are full or satisfied, children generally use a healthy internal ability to make such decisions. Each child in a group should not be expected to eat an equal amount. It is best to let children's natural body signals tell them when they are full. For children who eat too quickly or who take large mouthfuls at once, slowing the pace of eating may be necessary to allow time for children to respond to their body signals. Children who have eaten the portion given to them at the beginning of a meal at a reasonable pace and still want more food should be allowed to have second helpings.

Feeding Children with Special Needs

Children with disabilities and other special needs may require extra nutritional planning and support. Children may have special needs because of food allergies, diabetes mellitus, developmental disabilities, swallowing problems or other conditions. Individual feeding plans should be carefully developed with the input of the family and the child's health care provider to meet the needs of these children. The plans should be part of the Care Plan for Children with Special Needs. An updated form for documenting the care plan is available on the ECELS-Healthy Child Care Pennsylvania website at www.ecels-healthychildcarepa.org

Food Allergies

- Children with food allergies and other dietary restrictions need careful planning and extra attention to make sure that their nutritional needs are fully and safely met. Children can become allergic to any food. Some of the most common ones that cause allergies are eggs, peanuts, tree nuts, milk, soy milk and shellfish. Children's food allergies can range from mild to life-threatening. ECE staff will need to gather clear information from the child's family about the nature of the food allergies, signs of allergic reactions, how to prevent the child from being accidentally exposed to allergens and safe foods to substitute. This information should be in the child's record and shared with all caregivers/teachers who care for the child. Obtain parent consent to post the child's name, photograph and the food allergies in easy-to-see places such as on the kitchen refrigerator and in the group care spaces where food is prepared or handled in the ECE program for all staff to see. Since substitutes or visitors to a group may be unaware of the child's allergy, having the child wear a badge with the information that is easily transferred from one article of clothing to another may provide extra protection.
- Each child with a food allergy should have a written care plan prepared by the child's health care provider that specifies the food to which the child is allergic, what to do to avoid that food, and what to do in the event an allergic reaction occurs. Based on the care plan, the caregiver/teachers should receive training and demonstrate competence in preventing exposure, recognizing symptoms and treating allergic reactions. Families of all the children in the group should be advised to avoid any known problem foods when bringing food into the ECE facility. The care plan and any necessary medications should accompany the child on outings away from the facility. Some children with severe allergies have a prescription for emergency medicine (e.g. EpiPen®) to be used in case the child is exposed to a known allergen food. For these children, caregivers/teachers need education on how to use the EpiPen® and procedures for storing it in a place that is both safe and easy to reach. For example, the responsible caregiver/teacher can wear a fanny pack with the emergency medication in it. EpiPen® and EpiPen Jr.® are disposable, prefilled automatic injection devices designed to administer a single dose of epinephrine for allergic emergencies. EpiPen® and EpiPen Jr.® can only be administered to someone who has a prescription for them. **Whenever an emergency injection is given to a child with a food allergy, the Emergency Medical Services (EMS-911) should be called.** The medicine in the emergency injection wears off quickly and the child may have a life-threatening situation that requires medical professional management right away.

- Regular and clear communication between ECE staff and families about food allergies is crucial. Forms and training curricula are available to download from the Food Allergy and Anaphylaxis Network (FAAN) at <http://www.foodallergy.org/> in English and Spanish

Vegetarian and Other Diets with Limitations

Young children are at high risk for nutritional deficiencies. ECE staff must know about family food preferences to accommodate any limitations. An ECE program can accommodate a vegetarian diet with:

- Written documentation of the food choices and limitations
- An up-to-date health record for the child available to the caregivers/teachers including information about growth and appetite
- Collaboration that involves the family, the Child Care Health Consultant and the Nutritionist/Registered Dietitian or the child's health care provider.
- Sound, culturally relevant information to ensure that the child receives adequate calories and essential nutrients to promote growth and development.

Children with Diabetes and Children at Risk for Diabetes

Type 1 diabetes is a condition in which the body's immune system destroys the cells in the pancreas that make insulin. Insulin is a hormone made by the pancreas that helps the body use sugar and other foods that are broken down into sugar. Children with Type 1 diabetes need careful monitoring of their blood sugar levels and injections of insulin at intervals timed to match their food intake. They are at risk of having their blood sugar levels either too high or too low. Very low blood sugar levels can damage the brain. Very high blood sugar levels and low insulin levels interfere with growth and risk complications that involve other systems of the body. Children with Type 1 diabetes need carefully planned and balanced meals at regular intervals during the day. Following a feeding plan for such children is very important (Story, Holt & Sofka, 2002). They may need extra snacks or drinks, depending on their blood sugar status. Determining blood sugar levels requires regular testing. Caregivers/teachers will need education on the basic principles of metabolism, how diabetes interrupts these processes and the urgent importance of maintaining an appropriate and stable blood sugar level.

Type 2 diabetes is a condition in which the insulin that the body makes is not sufficient or it doesn't work well in the body. The result is that blood sugar is not properly controlled. Children with insulin resistance, or pre-diabetes, have a very high risk of developing Type 2 diabetes later in childhood or adolescence. Some children are at increased risk for Type 2 diabetes due to overweight or family history. These children need to follow a nutrition plan as well as get enough daily exercise. Caregivers/teachers responsible for children with or at risk for Type 2 diabetes should understand the condition, its possible long-term effects, and the basic principles for supporting good blood sugar control and avoiding problems. Close collaboration of ECE staff with the child's health care professionals in the child's "medical home" and any specialists involved is essential to provide proper care for these children.

Positioning Issues

Feeding children with disabilities or other special needs may require specific positioning, adaptive equipment, or more time and effort than is needed for other children. Without this special attention and care, these children may not get enough nutrition. CCHCs can provide

training and can support the practice of any special techniques or procedures that may be necessary.

Reducing the Risk of Choking

Young children in their first 3 years of life are at great risk of choking (Graves et al., 1997). Do not serve children under age 4 the following foods. These are known to be more likely to get caught in the child's airway and stop breathing:

- spoonful of peanut butter
- mini marshmallows
- large chunks of meat
- nuts, seeds or peanuts
- raw carrots (in rounds)
- fish with bones
- dried fruit (except raisins)
- hot dogs (whole or sliced into rounds)
- hard candy or cough drops
- popcorn
- raw peas
- whole grapes
- ice cubes
- whole olives

Food and Nutrition Service Policies and Plans

Written policies should address the following items listed in *Caring for Our Children, 3rd edition*, assigning responsibility for each:

- Design and use of the kitchen
- Food budget
- Food procurement and storage
- Menu and meal planning
- Food preparation and service
- Kitchen and meal service 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 of food to meet nutrient needs
- Promotion of breastfeeding and provision of community resources to support mothers
- Infant feeding: storage and handling of human milk and formula, determination of the kind and amount of infant formula the facility will prepare, sanitation and hygiene (hand washing, feeding chairs, feeding bottles, food preparation devices), provision of milk from home, holding infants or feeding them sitting up, prohibiting bottle propping or prolonged feeding, flexibly responding to infant clues instead of feeding on schedule, introduction of solid foods, limits for number of children who can be fed by one adult at one time, handling food intolerance or allergies.

See the beautifully illustrated, easy to use, 48-page Nemours Health and Prevention Services guide on Best Practices for Healthy Eating at:

<http://www.nemours.org/content/dam/nemours/www/filebox/service/preventive/nhps/heguide.pdf>

Physical Activity

Children Need Active Play Every Day

From the introduction to the Physical Activity Standards in *Caring for Our Children*, 3rd edition, 2010 pre-release, 2010, p.51: “Physical activity and movement are an essential part of the development, learning, and growth of young children. During the first six years of life, infants, toddlers, and preschoolers are learning fundamental gross motor skills, and need ample opportunities to practice these skills. Recent evidence suggests that children may be more attentive and learn better after periods of activity and movement. Notably, physical activity is also a crucial part of maintaining a healthy weight and preventing obesity. Physical activity habits are established early in life and tracked over time. Therefore the preschool years are a key time in which to instill healthy physical activity habits that will last a lifetime, primarily through active play. ... there are potential barriers to daily opportunities for active play, including concerns about children’s safety, time, curricular constraints, and inadequate knowledge or training among caregivers/teachers about how to integrate these opportunities into the curriculum....”

The *Caring for Our Children* Standard on Active Opportunities for Physical Activity states that “The facility should promote children’s active play every day. Children should have ample opportunity to do vigorous activities such as running, climbing, dancing, skipping, and jumping.” (AAP, 2010) The standards specify the following:

- All children, birth to six years, should participate daily in:
 - a) Two to three (2-3) occasions of active play outdoors, weather permitting (see Standard on Playing Outdoors for appropriate weather conditions);
 - b) Two or more structured or caregiver/teacher/adult-led activities or games that promote movement over the course of the day – indoor or outdoor;
 - c) Continuous opportunities to develop and practice age-appropriate gross motor and movement skills.

- Follow the recommended guidelines for the total time allotted for outdoor play and vigorous indoor or outdoor physical activity for the age group. Outdoor activities are preferable. Being outdoors in cold weather does not increase the risk of the common cold or make a cold worse. Children and adults benefit from outdoor activity in all but the most extreme conditions. If the outdoor times are curtailed during adverse weather conditions, or because access to safe outdoor play space is limited, children should still play outdoors for short periods. Then, increase the time of indoor activity, so the total amount of exercise remains the same. The recommendations in *Caring for Our Children* are given here, and compared with other national recommendations in Table 2 later in this chapter:
 - a) Outdoor play:
 - 1) Infants (birth to 12 months of age) should be taken outside two to three (2-3) times per day, as tolerated. There is no recommended duration of infants’ outdoor play
 - 2) Toddlers (12 months to 3 years of age) and preschoolers (3 to 6 years of age) should have 60 to 90 total minutes of outdoor play.
 - b) Total time allotted for vigorous activities:
 - 1) Toddlers should have 60 to 90 minutes per eight-hour day for vigorous physical activity, including running;
 - 2) Preschoolers should have 90 to 120 minutes per eight-hour day.

- Opportunities to enjoy physical activity should be pro-rated in part-time programs using the formula 20 minutes of outdoor play for every 3 hours in the facility.
- Infants should have supervised tummy time every day when they are awake. While the babies are on their tummies for short periods of time (3 to 5 minutes), they should have interactions with their caregivers/teachers. The time for these tummy-time activities should increase as the infant seems to enjoy the activity. Tummy time strengthens the muscles need to crawl and later, to walk. Infants who do not have enough tummy time are at risk for delayed motor development.
- Withholding active play from children who misbehave is often counterproductive. Some children in group care encounter more stress than if cared for one-on-one. Young children are not able to remain seated for long periods of time (over 15 minutes). Children who misbehave or “act out” may be manifesting stress, and may benefit from brief periods (1-2 minutes) of structured activity to expend excess energy and relieve stress.
- *Caring for Our Children* standards that were pre-released in 2010 say that best practice is that children should not be sedentary for more than 15 minutes at a time, except during meals and naps. A review of current child care regulations suggests that as a minimum requirement, sedentary time should not exceed 30 minutes. (Benjamin, 2010) Preventing Obesity in the Child Care Setting: Evaluating State Regulations) Although not explicitly stated in the standards, this limit is intended to apply to teacher-directed activity and as a guideline to ensure that frequent intermittent physical activity occurs. These limits should not preclude infrequent occasions when a child might be engrossed in doing a self-directed project that takes somewhat longer. However, such children need to learn to take breaks for physical activity too. If used at all, infant equipment such as swings, stationary activity centers (i.e. stationary walkers), infant seats (e.g. bouncers), molded seats, etc. should confine children only for short periods of time. A least restrictive environment should be encouraged at all times. (AAP, 2010)

In 2002, the National Association for Sport and Physical Education [NASPE] released the first physical activity guidelines specifically designed to meet the developmental needs of infants and toddlers (NASPE, 2002). The NASPE guidelines are for children in any setting. As shown in Table 2, with few exceptions, the older NASPE guidelines are aligned with the specific guidance for group care settings in *Caring for Our Children* (AAP, 2010). Both 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.

Objective observers note that children are not as physically active as they should be while in group care. A study conducted in 96 North Carolina child care centers found that few of the best-practice guidelines for physical activity were achieved by a majority of the participating North Carolina child care centers. The measurement tool used was a user-friendly checklist that was tested for reliability and validity as a component of the CDC-sponsored Nutrition and Physical Activity Self-assessment for Child Care (NAP SACC) Toolkit. (McWilliams C, 2009) To access the NAP SACC Toolkit, go to www.center-TRT.org. Click on the “Obesity Prevention” box, then “interventions: NAP SACC” in the lower left-hand side of the page. All the materials are on the right side of the page under “Intervention Materials” while the training is located under “Training and Technical Assistance.”

NAP SACC includes assessment, interventional, educational and evaluation materials developed to promote healthy weight in children 2-5 years of age in child care settings. Many of the materials are in both English and Spanish. To maintain the reliability and validity of the materials, they must be used as presented. The NAP SACC web pages include well-documented and tested online training for child care health consultants to provide technical assistance as a follow-up for the NAP SACC self-assessment. Using the NAP SACC Toolkit is an excellent way to identify and remedy gaps in nutrition and physical activity practices.

In addition to NAP SACC, other useful resources for nutrition and physical activity materials and ideas that ECE programs can use are:

- Nemours Health and Prevention Services guide at <http://www.nemours.org>; search for “Best Practices for Physical Activity” – and select paguidelines.pdf
- Color Me Healthy Preschoolers Moving and Eating at <http://www.colormehealthy.com>
- I am Moving I am Learning, a program developed for implementation and national roll-out taking place in Head Start in 2011. Details and materials are online at <http://eclkc.ohs.acf.hhs.gov/hslc/ecdh/Health/Nutrition/Nutrition%20Program%20Staff/IMIL/IamMovingIam.htm>

Playing Outdoors

Caring for Our Children standards say: “Children should play outdoors daily when weather and environmental conditions do not pose a significant health or safety risk. Outdoor play for infants may include riding in a carriage or stroller; however, infants should be offered opportunities for gross motor play outdoors, as well.

Weather that poses a significant health risk should include wind chill factor at or below minus 15°F and heat index at or above 90°F, as identified by the National Weather Service.

Children should be protected from the sun by using shade, sun-protective clothing, and sunscreen with UVB-ray and UVA-ray protection of SPF 15 or higher, with permission from parents/guardians. Extensive sun exposure is unnecessary for the skin to make vitamin D. If sufficient vitamin D is a concern, the child’s health professional can prescribe supplements rather than risk skin damage from the sun.

Before prolonged physical activity in warm weather, children should be well-hydrated and should be encouraged to drink water during the activity. On hot days, infants receiving human milk in a bottle can be given additional human milk in a bottle. Unless otherwise recommended by their child health care provider, infants exclusively fed human milk should not be given water, especially in the first six months of life. Infants receiving formula and water can be given additional formula in a cup.

In warm weather, children’s clothing should be light-colored, lightweight and limited to one layer of absorbent material to facilitate evaporation of sweat. Children should wear sun-protective clothing, such as hats, when playing outdoors between the hours of 10AM and 2 PM.

In cold weather, children’s clothing should be layered and dry. Caregivers/teachers should check children’s extremities for maintenance of normal color and warmth at least every fifteen (15) minutes when children are outdoors in cold weather. Children should be properly clothed

(boots, gloves, hats, etc.) to participate in outdoor play even when precipitation is present such as rain or snow.

Caregivers/teachers should also be aware of environmental hazards such as contaminated water, loud noises, and lead in soil when selecting an area to play outdoors. Children should be observed closely when playing in dirt/soil, so that no soil is ingested. Play areas should be secure [against intruding animals or people or child escape] and away from heavy traffic areas.” (AAP, 2010.)

Children’s bodies cool off or heat up more easily when exposed to uncomfortable external temperatures or are overheated by the warmth generated by vigorous play in warm weathers. They do not adapt as readily to these conditions as adults do because children have a large body surface area relative to their size. Children change their body temperature more rapidly when exposed to extremes and adults. They do not sweat as much as adults in warm weather, when vigorous activity raises their body temperature. Children’s small body parts (fingers, hands, toes, feet, noses, ears) can become cold more quickly also. So caregivers/teachers must be vigilant in extreme weather to be sure that children are not suffering injury from heat or cold stress. None-the-less, even brief periods outdoors in extreme weather are desirable as long as the outdoor air is not polluted. Spending time outdoors gives opportunities to breathe air that has fewer infectious disease organisms than indoor air. This is a good time to dilute the collected organisms in indoor air by airing out rooms with fresh outdoor air.

Physical Activity for Children with Asthma

For some children with asthma, special accommodation is necessary if cold air is a wheezing trigger, or they wheeze when there is pollen in the air. The child’s health care provider may be able to adjust the child’s medication to control asthma or allergy symptoms so the child can fully participate in active play. During the winter, indoor allergens may trigger asthma symptoms so properly circulating and cleaning the air may reduce their asthma symptoms. Some who have children have asthma may have their symptoms triggered by cold or hot temperatures, or by physical activity. Others may have allergies to substances in outdoor air that are troublesome during certain times of the year. Solutions are available that usually reduce these problems. For example, during cold weather, children whose asthma is triggered by cold air can wear a scarf to cover their noses and mouths. Each child with asthma should have a special care plan, as should every child who needs care that differs from that required by a typical child without a special need.

Caregivers/Teachers’ Encouragement of Physical Activity

Teachers generally know about potential benefits for children from physical activity. Some of these are benefits for teachers too. In focus groups conducted among Cincinnati ECE teachers from 2006 to 2008, ECE teachers identified these benefits: obesity prevention, building lifetime healthy habits, developing fundamental motor skills such as throwing and catching a ball, and in the classroom, children who have been physically active nap better. (Copeland, 2010) They suggested that outdoor time provided more room to run, time away from germs that concentrate in indoor environments so children are less likely to get sick, and sunshine that lets children make their own vitamin D. They identified socio-emotional benefits too: children have more self-confidence after mastering gross motor skills, and improve their peer relationships during active

play. They noted that brief periods outside can result in calmer classrooms. They knew that time outdoors improves mood, and said that outdoor time is associated with children being more creative and expressive.

The teachers identified learning benefits of physical activity as well. Their list included: the children could concentrate and pay attention better after brief periods of physical activity. They said active play offers opportunities to learn pre-math concepts of distance and time, as well as new vocabulary about weather, animals, plants and cause and effect. In addition, when active play was outdoors, teachers said children had opportunities to practice taking turns using playground equipment and learn about community workers like the mailman or garbage collectors. (Copeland, 2009; Copeland, 2010)

However, in the focus groups, the ECE teachers described disadvantages to physical activity in ECE programs. Some of these are child-based; some are concerns raised by parents, and others are unique teacher beliefs. They pointed out that children could get hurt or dirty. Some parents ask that their children not go outside because they fear that cold weather will make the child ill, or that the outdoor air will make children with asthma have symptoms. They said that parents sometimes dress their children inappropriately for active play – in expensive, dressy clothing, in flip flops that fall off easily, or without suitable clothing for cold or wet weather. (Copeland, 2009) Some teachers said they did not like to go out in inclement weather, or dislike going outside where they might get dirty, sweaty or be exposed to insects. Some complained about the work involved in dressing the children, putting on sunscreen, or setting up portable equipment. Some didn't know what to do with the children on the playground other than free play. Others complained that their own weight and fitness problems made their involvement in active play with the children difficult. Some said they had to focus on academics at the expense of gross motor time. Others mentioned that children were soon bored by safe playground equipment such as climbers even though these may be expensive and provide eye-appeal for parents. They said that their programs lacked funds to invest in physical activity equipment.

In a telephone survey conducted in Cincinnati in 2008-2009, ECE staff reported problems with their physical activity environments such as lacking an outdoor playground, not having an indoor play-space to use for inclement weather or having a playground that was too small and not well-equipped. (Copeland, 2010) They also said that weather was a problem, feeling that rain, snow, standing water or snow, or temperature extremes were problems. The local ECE teachers commonly cited a minimum temperature of 32°F. to go outside – a limit that would keep children off the playground in their climate for nearly half the year. (Copeland, 2009; Copeland, 2010)

Scientific evidence indicates that children are more active when they are outdoors and when adults prompt them to be active. (Brown, 2009; Burdette, 2005; McKenzie, 1997; Sallis, 1993) Indoor and outdoor equipment needs to be safe, but also provide developmentally appropriate gross and fine motor experiences (AAP et al., 2010). Children should always be supervised while playing on active play equipment, with caregivers/teachers promoting and participating themselves in active games when it is safe to do so.

To keep caregivers actively supervising and participating in gross motor activities, playgrounds should not have adult places to sit during active play time. The active play area should have enough space so that children can move freely without running into one another. In *Caring for Our Children*, the standard says, "Caregivers/teachers should:

- a) Lead structured activities to promote children's activities two or more times per day;
- b) Wear clothing and footwear that permits easy and safe movement;
- c) Not sit during active play;

- d) Provide prompts for children to be active, e.g. ‘good throw’;
- e) Encourage children’s physical activities that are appropriate and safe in the setting, e.g. do not prohibit running on the playground when it is safe to run;
- f) Have orientation and annual training opportunities to learn about age-appropriate gross motor activities and games that promote children’s physical activity;
- g) Limit screen time (TV, VD, computer)”. (AAP et al., 2010)

Structured movement and learning activities should include games such as: Simon Says, Mother May I, moving to music such as “I’m Gonna Shake My Wiggles Out,” pretending to be different kinds of animals, relay races, and community walks. For many other ideas, see the websites listed in this chapter. Structured activities can be conducted outdoors or indoors. A good time for structured activity might be after the children have had 10-15 minutes of unstructured gross motor play and have become less active. Usually, preschool children are vigorously active in short bursts of 15-30 seconds, and do not sustain vigorous activity for longer than 5 minutes at a time. (Oliver, 2007) While the minimum total time children should be vigorously active is unknown, repeated bouts of around 10 minutes of vigorous activity have health benefits for adults (Physical Activity Guidelines for Americans, 2008). For a comparison of the recommendations from different expert sources for physical activity, see Table 2, below. (From Copeland, 2010)

Type of Activity and Age Group	<i>National Association for Sport and Physical Education 2002</i>	<i>USDA Dietary Guidelines 2005</i>	<i>USDHHS Physical Activity Guidelines 2008</i>	<i>Caring for Our Children, 3rd Edition, (pre-release) 2010</i>
Unstructured time			Not enough data to recommend lengths of time	
Infants	-	-		2-3 outdoor occasions/day
Toddlers	60 min	-		60-90 min opportunity to be active
Preschoolers	60 min	60 min, most days		90-120 min opportunity to be active
Structured time				
Infants	Promote development	-		2-3 outdoor occasions/day
Toddlers	30 min	-		At least 2 structured occasions, of 5-10 min
Preschoolers	60 min	-	At least 2 structured occasions, of 5-10 min	
Sedentary time			<i>NAP SACC 2007, Baby NAP 2011</i>	
Infants	-		30 min	Less than 15 min
Toddlers	Less than 60 min		30 min	Less than 15 min
Preschoolers	Less than 60 min		Less than 30 min	Less than 15 min

Screen Time (TV, Computers, Electronic Media and Devices)

The increasing amount of time spent viewing television is associated with an increased prevalence of obesity in children. (Anderson, 1998) Media use may

- displace time children spend in physical activities
- contribute to increased energy consumption through excessive snacking and eating meals while viewing media
- influence children to make unhealthy food choices through exposure to food advertisements
- lower children's metabolic rate.

Children need interactions with people to stimulate their socio-emotional and cognitive growth. They should be talking, playing, singing, reading and being physically active. Many children have excessive amounts of screen time in their homes. Screen time reduces opportunities for physical activity. Television viewing before children are three years of age can have negative effects on their cognitive development. Children's television viewing is associated with being overweight and poor diet quality as well as overexposure to advertising of high-calorie, low nutrient density foods and drinks which influences their food consumption. *Caring for Our Children* standards limit total exposure time to media in ECE settings to:

- **No TV for children less than two years of age and no more than 1-2 hours (at home and elsewhere combined) for children more than two years of age.**
- No more than 30 minutes once a week and for educational or physical activity use only
- No media viewing during meal and snack time
- Computer use no more than in 15 minute increments except for school-age children working on homework assignments.

Caregivers/teachers cannot know or control how much children view media when they are not in the program. However, since evidence suggests that children have substantial exposure to media in their homes, caregivers/teachers should restrict it in group care settings.

Policies and Practices that Promote Physical Activity

Facilities should have written policies on the promotion of physical activity. Policies should cover the benefits, duration, setting, and clothing for children and adults that facilitates moderate to vigorous active play. When children arrive without the clothing they need to play outside, caregivers/teachers should have supplies of suitable articles for them to wear. With parent/guardian consent, programs can apply sunscreen purchased as a bulk supply. Few families will object to paying a small supplemental charge to cover the cost of this purchase by the program instead of supplying each of their children individually. It is much easier for staff to use bulk sun screen and less costly than asking each parent to supply a separate container. Caregivers/teachers who have clean hands can apply sunscreen to all the children without wearing gloves or washing their hands between children as long as both they and the children have no sores on their skin.

What the Child Care Health Advocate Needs to Do

Promote Healthy Nutrition Practices

- Support breastfeeding practices

- Monitor food brought in by parents to make sure it is nutritious and safe
- Be sure that meals and snacks are well-balanced and age-appropriate
- Be sure that a nutritionist reviews menus for nutritional content
- Work with staff to ensure that they serve meals family style starting with small portions and allowing children to ask for more if they are still hungry
- Create a pleasant, social eating environment
- Eat with the children and model positive health habits
- Let children choose what and how much they will eat
- Encourage children to try new foods

Make Sure Food Served to Children Is Safe

- Use the nutrition, hygiene and sanitation items on the ECELS Health and Safety Checklist at least monthly and arrange for corrections if needed
- Make sure that someone monitors the temperature of food, water and refrigerators to identify problems, and then correct any found in:
 - food deliveries
 - food brought from home
 - food during preparation
 - food served
- Check that the program staff is following best practices, such as labeling and storing food safely, and cleaning surfaces used for preparing or eating food
- Monitor the hand washing practices of children and staff before and after meals
- Prevent choking risks

Teach Staff, Children and Families When and How to Wash Hands – Follow these steps:

1. Remove all jewelry and push/roll up any long sleeves
2. Wet your hands with warm, running water, and then apply liquid or foam soap. (Bar soap transfers dirt and germs from one person to another. So it is not suitable for use in group care settings. Liquid and foam soap dispensers should be of a type that requires as little contact of soiled hands with the container as possible, and they should be cleaned regularly.)
3. Lather and rub all surfaces of your hands for at least 10 seconds, including backs of hands, thumbs, between fingers, under and around fingernails and wrists. Hands should be washed for 20 seconds when handling meat and poultry (U.S. Department of Agriculture [USDA] Food Safety Inspection Services, 1998)
4. Rinse off the lather thoroughly, with fingertips pointed down
5. Dry your hands with a fresh, disposable paper towel
6. Turn off the water faucet with the paper towel (if it is not a hands-free type) and discard the paper towel after using it to open any doors or gates to leave the hand washing area.

When to Wash Hands: Staff and Children

- upon arrival
- before any food service activity (food preparation, handling, serving or setting the table)
- before and after handling raw meat, poultry, fish or raw eggs
- before and after eating/feeding meals or snacks
- after changing or checking diapers
- after using the toilet or helping a child with using the toilet
- after handling pets or other animals
- after contact with any body fluids, such as vomit, saliva or blood
- after wiping a child's or your own nose

- after using gloves
- after playing outside
- before and after using water tables or moist items

Where to Wash Hands

- The child care center kitchen should have separate sinks for hand washing and for food preparation. (Kitchens of family child care homes are not required to have two sinks.) To prevent food from being contaminated, the hand washing sink should have an 8-inch splash guard or be 18 inches from the food preparation sink. Environmental sanitarians will usually look for a triple sink or an equivalent arrangement using separate basins in facilities where any dishwashing is done by hand. If separate sinks for hand washing and food are not available in classrooms or elsewhere, sanitize the sink after washing your hands in it and before preparing food in it.
- If there is no sink in the child care room, invest in a commercial portable sink that uses a reservoir of clean water (filled fresh daily) and collects soiled water inside another container inside the sink. These are usually on wheels to allow an adult to move them to daily to a place where they can be filled with fresh water and the soiled water can be emptied.
- For any sink used to wash hands, make sure the sink faucet, liquid soap and paper towels are easily accessible for children.
- Have hand lotion handy to use after washing and drying the hands to prevent chapped, dry hands. Dry cracked skin holds more bacteria than smooth, healthy skin. Frequent hand washing removes the skin's natural oils. Using lotion helps keep the skin from drying out.

Monitor Practices for Feeding Children with Special Needs

- Be sure someone regularly reviews notices about children with allergies, keeping the posted alerts about them accurate and up-to-date
- Be sure someone routinely reviews the Nutrition and Feeding Care Plans for children who have chronic health conditions or disabilities to be sure that these care plans are kept up-to-date
- Respect the personal (e.g. vegetarian) or religious (e.g. no pork) food preferences of families.

Review Existing Nutrition and Physical Activity Policies and Procedures

- If the program has policies and procedures for nutrition and physical activity, review and update them as necessary with input from staff, families and the nutrition consultant. If there are none, work with the staff and a nutritionist with input from families to develop policies and procedures for safe food handling and storage, nutrition, and physical activity. Use *Caring for Our Children* (AAP, 2011) and the guidelines for implementation of these standards found on the website of the National Training Institute for Child Care Health Consultants (Benjamin, SE 2007). <http://nti.unc.edu>.
- Arrange for a nutritionist to help staff plan menus and evaluate their nutritional value.
- Make sure that the program policies give guidance for a variety of situations and that the following policies are communicated to families:
 - When parents send food for their child from home, they follow clear guidelines from the ECE program given to them at the time of enrollment and as necessary thereafter that specify expectations for both nutritive content and food safety. Prospective staff should receive the same policies at the time of their pre-employment interview.

- When planning activities, program staff or parents who are providing food should choose foods that are acceptable and safe for all participants. Activities that involve children involved in preparing food are creative ways to build children’s interest in healthy food. However, food safety and ways to involve children who have allergies or other food restrictions must be planned into the activity.
- Children whose families ask for a vegetarian diet for their children or make other specific food requests deserve consideration and respect. Vegetarians may choose only nuts, seeds and legumes from the meat and beans group, or they may choose to also include eggs and dairy products. The Pediatric Nutrition Handbook of the American Academy of Pediatrics (AAP, 2009) indicates that vegetarians, even vegans (no animal products including dairy and eggs) can get the recommended amount of nutrients by carefully choosing their foods. Give special attention to making sure the foods include sufficient plant proteins and proper intake of calcium, zinc and iron. Substitutions to menus to allow for individual preferences must be equivalent in nutrients. Offer children who avoid milk products other sources of protein, iron and vitamin B12, as well as calcium and vitamin D.
- Observe actual nutrition practices to find out if the intended practices are being followed.
- Review daily schedules and observe to see if children are getting enough physical activity. See and share the section below on Promoting Physical Activity for Young Children and Table 1 for ideas about physical activities caregivers/teachers can include in the child’s day.

Promote Physical Activity for Young Children

The Child Care Health Advocate can encourage teachers to follow the guidelines for physical activity for children in their care and increase their own involvement in moderate to vigorous physical activities with the children. For some age-appropriate physical activity ideas, see Table 1 below and the websites listed after the table.

TABLE 3: SPECIFIC PHYSICAL ACTIVITY IDEAS FOR YOUNG CHILDREN

Age	Physical Activity	
Birth to 3 years old	Crawl through tunnels or under tables. • Climb • Dance • Walk • Have a parade around the play area	• Kick a ball • Throw a ball or balloon • Stack toys • Roll over • Play movement games (e.g. pat-a-cake, duck-duck-goose, hide & seek)
3 to 5 years old	• Dance • Do gymnastics. • Jump • Skip • Gallop • Play on ride-on toys. • Swing • Run	• Take a walk. • Fly a kite. • Hop • Climb • Throw a ball • Catch a ball • Play “Simon Says.” • Play “Follow the Leader.”

Go to the following websites listed in *Caring for Our Children*, 3rd edition that suggest effective and age-appropriate physical activity:

- Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC) – <http://www.napsacc.org>
- Color Me Healthy Preschoolers Moving and Eating – <http://www.colormehealthy.com>
- I am Moving I am Learning (Head Start) – <http://eclkc.ohs.acf.hhs.gov/hsc/e cdh/Health/Nutrition/Nutrition%20Program%20Staff/IamMovingIam.htm>.

Provide Resources

- Provide resources for children, staff and parents related to food, nutrition and physical activity.
- Make a list of farmers' markets, food pantries, and local park and recreation activities and events.
- Create nutrition and physical activity bulletin boards, newsletter articles and collaborative menu planning.

Provide Educational Materials for ECE Providers, Families and Children

- Give out examples of successful nutrition plans from other ECE programs.
- Put up posters to educate children and parents about healthy food choices and physical activity, and encourage others in ECE programs to put them up in several easy-to-notice places
- Provide a list of books, videotapes and Web sites to help educate staff, parents and children about nutrition and physical activity.
- Provide resources that are culturally sensitive to the families being served
- Orient new employees or substitute teachers to nutrition and fitness policies and to the specific needs of each child

Support and Educate Parents

- Help parents follow the national schedule of the American Academy of Pediatrics and the Maternal and Child Health Bureau, called "Bright Futures" for well child checkups in a "medical home." The medical home is an approach to primary health care in which the pediatric health care team works in partnership with a child and the child's family to assure that all of the medical and non-medical needs of the child are met. The American Academy of Pediatrics first launched the concept of the medical home in the 1960's. Now the concept of the medical home has been embraced and supported by the federal government. The ideal medical home model is "accessible, continuous, comprehensive, family-centered, coordinated, compassionate, and culturally effective to all children and youth, including those with special health care needs." To learn more about the medical home, go to <http://www.medicalhomeinfo.org/>. Routine preventive care for each child should include the following periodic services according to the recommendations of the American Academy of Pediatrics, at www.aap.org:
 - Growth assessment with weights, lengths and head circumferences that are plotted on standard graphs, and associated with BMI determinations
 - Recommended current schedule of vaccines including annual influenza vaccine
 - Screening tests recommended at specific ages when these services are most beneficial
 - Follow-up and referrals for suspected health problems.

- Keep track of growth assessments (height, weight and BMI) of children and follow up with parent consent to receive instructions from the child's health care provider about program modifications when these assessments indicate special attention is needed.
- Plan a parent education workshop or bulletin board focusing on nutrition and physical activity. include information about the harmful effects of excessive screen time for children.

Cultural Implications

Provide resources that are inclusive and culturally appropriate to the families served by the ECE program. Nutrition can be a very emotional topic for some families and ECE providers. Families may have different opinions about food, based on their cultural traditions and what they have heard or read about. Conflicts between ECE providers and families may come up. Child Care Health Advocates can help solve these conflicts by being open to different perspectives. Accommodating these differences when they are not harmful is desirable.

Implications for Children and Families

Children and families can benefit from Child Care Health Advocates and other ECE staff who model healthy eating habits. By having healthy food choices available in ECE programs, and having educational materials available about nutrition and physical activity, families can help their children become healthier people.

Implications for ECE Providers

ECE providers can use up-to-date resources and educational materials about nutrition and physical activity to educate staff and families. ECE providers can make healthy food choices and physical activity part of their normal activities during the day.

LEARNING ACTIVITY: BUILDING HEALTHY EATING HABITS

1. Identify the problems in the following four scenarios.
2. Work with colleagues in small groups; talk about suggestions for improvements.
3. Note educational and any other supportive steps you might take in these situations.
4. Which *Caring for Our Children* standards are relevant?

Scenario 1

A new teacher tells you she is having trouble getting the children to sit down and eat. She tells you that she has the television turned to the children's favorite video show so they will sit quietly and watch television while they are eating. She also tells you that she tries to have the meals right after the children come in from playing since they will probably be tired out and ready to sit down and eat. She is too busy to sit down with the children since she is dishing out each child's plate in the kitchen. She cannot figure out what to do to get the children to sit at the table and eat their meals. What can you suggest to her?

Scenario 2

A parent in your program wants you to give her 2-month-old infant cereal in the bottle twice a day.

Scenario 3

A teacher's aide in your ECE program tells you she is really annoyed with a parent who wants her child treated differently because she is a vegetarian. The aide wants the

parent to bring in the vegetarian meals because it is so much work to cook special dishes every day. The aide just found out that the Child Care Food Program Guidelines require that a family's religious, cultural or medical nutritional needs must be respected.

Scenario 4

A parent in your program is concerned because she feels her 2-year-old is not getting enough to eat in your ECE program.

Handouts for the Nutrition and Physical Activity Module, First Edition, 2006

The following handouts are available on the website of the California Childcare Health Program (CCHP), Oakland, CA www.ucsfchildcarehealth.org as accessed on 11/20/10

- *Fact Sheets for Families: Food Allergies*
- *Fact Sheets for Families: Food-Borne Illness*
- *Fact Sheets for Families: Overweight and Obesity*
- *Forms: Nutrition and Feeding Care Plan*
- *Health and Safety Notes: Active Outdoor Play*
- *Health and Safety Notes: Diabetes in the Child Care Setting*
- *Health and Safety Notes: Healthy Snacks for Toddlers and Preschoolers*
- *Health and Safety Notes: Is It Safe to Play Outdoors in Winter?*
- *Health and Safety Notes: Supporting Breastfeeding Families*
- *Health and Safety Notes: Types of Vegetarian Diets*
- *Possible Choking and Suffocation Hazards*

Handouts from Other Sources – these are not included in this 2010 update of the chapter which substitutes web links to materials available on regularly updated and current websites mentioned in the updated text. The following items are at the end of the 2006 edition of the module on the CCHP website:

- *Child Care Center Self-Assessment Guide: Safe Food Handling and Preparation*
- *Family Child Care Homes Self-Assessment Guide: Safe Food Handling and Preparation*
- *Food Allergy Action Plan*
- *How to Help Your Child Have Healthy Weight*

Additional Helpful Web Links and Resources

[Obesity Prevention Resources for Early Education and Child Care](#)

This 6 pages of updated list of links and resources prepared by ECELS-Healthy Child Care Pennsylvania has links to specific information about nutrition, food safety and physical activity relevant to early education and child care programs. Many of the websites offer detailed suggestions for menu planning and age-appropriate moderate to strenuous exercise. It is on the ECELS website at www.ecels-healthychildcarepa.org in the section for Early Education and Child Care Providers, in the subsection for Fact Sheets/Other Handouts.

USDA Team Nutrition's "Nibbles for Health" Newsletters for :
<http://www.fns.usda.gov/tn/Resources/nibbles.html>

Centers for Disease Control and Prevention for BMI for children
<http://www.cdc.gov/nccdphp/dnpa/bmi/>

Parents Bright Futures in Nutrition (2002)
<http://www.brightfutures.org/nutrition/>

We Can!™ ("Ways to Enhance Children's Activity & Nutrition"):
<http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/>

USDA Food Pyramid:
<http://www.mypyramid.gov/>

National Food Service Management Institute (NFSMI) CACFP Resources
<http://www.nfsmi.org/Templates/TemplateDivision.aspx?q=cEIEPTc=>

USDA Resources for Child Care

More children are in child care today than ever before. Some spend more time in child care than they do at home. The meals and snacks served in your center or child care home, through USDA's [Child and Adult Care Food Program](#) (CACFP) are an important part of providing proper care. Team Nutrition is pleased to support your efforts in providing nutritious, appealing meals for the children you serve.

- [Building Blocks for Fun and Healthy Meals](#)
- [Community Nutrition Action Kit](#)
- [Feeding Infants: A Guide for Use in the Child Nutrition Programs](#)
- [Food Buying Guide for Child Nutrition Programs](#)
- [Making Nutrition Count for Children](#)
- [Meal Pattern Chart mini-poster](#)
- [Menu Magic for Children](#)
- [Move It! poster](#)
- [MyPyramid for Kids: A Close Look](#)
- [MyPyramid Blast Off](#)
- [MyPyramid for Kids Classroom Materials](#)
- [MyPyramid for Kids Coloring Page](#)
- [MyPyramid for Kids Poster](#)
- [MyPyramid for Kids Tips for Families](#)
- [MyPyramid for Kids Worksheet](#)
- [Nibbles for Health](#)
- [Recipes for Childcare](#)
- [Sense-national Food poster](#) (in Spanish)

From: <http://www.fns.usda.gov/tn/childcare.html>

Food Safety Self-Learning Module

Title: Caring 4 Kids. Food Safety in Child Care Settings

Producer: University of Nevada Cooperative Extension with funding from USDA Agreement No. 99-41563-0711

Contact: Madeleine Sigman-Grant
Child Care Training Modules
HDFS, Mail Stop 140
Reno, NV 89557

Telephone: 702-222-3130

Format: Curriculum includes videocassette (17 min), self-study guide with learning goals, activities and

quizzes produced in 2001, revised 2003

Description: This curriculum provides new child care professionals with current and basic food safety information. The training modules are meant to be used by individuals as self-study, but could also be used in a group.

How To Order: Order from above address.

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Academy of Breastfeeding Medicine Clinical Protocol #8: Human Milk Storage Information for Home Use for Full-Term Infants (Original Protocol March 2004; Revision #1 March 2010) BREASTFEEDING MEDICINE Volume 5, Number 3, 2010 at <http://www.bfmed.org/Resources/>, select Protocols, and then 8. Human Milk Storage accessed 11-19-10

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