
SCHOOL FOODSERVICE & NUTRITION

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A Healthy Start (preschool)

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From mealtime to playtime, early childhood is an exciting, constantly changing, frequently exhausting stage – for parents, children and caregivers. Every day brings new discoveries for these engaging little people – and new adventures as they master the world around them.

Allowing the process to proceed naturally – while promoting healthy growth and normal development – provides daily rewards for those involved in early childhood nutrition programs. To provide the best possible service to young children and their families, it's important to understand that these are not tiny adults. As you move into the early childhood arena, it's important to learn everything you can about the needs of this age group – and to understand how different aspects of development are interwoven during the early years.

Challenges and Opportunities

When it comes to the care and feeding of children, every age group has its challenges and its opportunities. The years from two to five are no exception.

The challenges in feeding toddlers come as babies separate from their parents and become independent little people. The phrases “I do it myself” and “terrible twos” have real meaning to anyone who has spent mealtimes with children at this stage.

Feeding young children can also present challenges when they have limited experience with organized mealtimes, appropriate table behaviors and different foods. Sadly, some children come to childcare or Head Start programs from chaotic home environments. In these situations, they may have never developed healthy feeding relationships with adults – and may not know how to function at structured mealtimes.

Fortunately, when it comes to young children, the opportunities to provide a healthy start are unlimited – and very rewarding – for their caregivers. In the early years, children adapt quickly to consistent and positive environments. With regular mealtimes and appropriate introduction of new foods, young children will naturally improve their feeding skills and embrace healthy eating habits over time.

On the physical activity side, 2- to 5-year olds naturally love to move – to play, to dance, to jump, to roll, to wiggle and to run. As with food and eating, what children need from adults is a safe environment, age-appropriate activities, genuine encouragement and healthy role models.

The Importance of an Early Foundation

Early childhood is an important time to focus on health, nutrition and physical activity – for several reasons. One is that the physical, cognitive, social and emotional aspects of development are closely interrelated from 1 to 5. Restricting a child's movement might, for example, also affect their cognitive (brain) development.

Another important reason is that nutrition status during the first five years of life can have lifelong implications. Since nutrition is necessary to grow both strong bodies and active minds, restricting the intake of important nutrients may cause damage that is irreversible.

For example, too little iron or zinc can affect brain development and lower a child's IQ. Too little calcium, vitamin D or protein may inhibit bone growth. Severe malnutrition is not the only thing that impairs growth and development. Minor deficiencies over extended periods of time may also cause potentially serious problems.

Undernourished children may become easily fatigued, listless and irritable. They can have trouble concentrating and are more likely to have learning difficulties. These symptoms in turn can lead to behavioral and social problems. In addition, malnourished children are more likely to miss school due to illness and are more susceptible to lead poisoning, both of which negatively impact a child's learning and development.

Perhaps the most important reason to insure that young children enjoy good nutrition and regular activity is that early experiences set the foundation for lifelong habits. It is during these early years that children develop preferences for certain foods and the ability to regulate their food intake. At the table, children learn manners and adopt cuisine “rules” from watching adults. These rules are things like whether foods are eaten with a spoon or with hands and at what occasions various foods are usually eaten.

Children are not born with an innate ability to choose healthy diets. Parents' and other caretakers' nutrition knowledge, food preparation skills and attitudes toward food all influence a child's eating habits for life.

Confronting the Problems

According to USDA's 2001 *Report Card on the Diet Quality of Children*, most American children have diets that are poor or need improvement. This assessment is based on the Healthy Eating Index (HEI), a measure of diet quality, with a possible total of 100 points. An HEI score above 80 gets a "good" rating; scores from 51 to 80 need improvement; and a score of 50 or less rates a "poor diet" grade.

The average HEI score for children ages 2 to 3 is 74.4, for children ages 4 to 6, 68.4, and for children ages 7 to 9, 68.0. According to USDA, much of the decline in children's diet quality occurs between the age groups 2 to 3 and 4 to 6. Between these two age groups, the percentage of American children having a "good diet" fall dramatically – from 36 to 17 percent.

Report Card on the Diet Quality of Children Ages 2 to 9 (September 2001)

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Dietary intake surveys show that, across all income levels, children from birth to 5 years of age tend to consume less fiber and fewer servings of fruits and vegetables than recommended. They also consume more fat and sodium than suggested by current nutrition guidelines.

A recent study of middle- and upper-income preschool children found that the most frequently consumed foods were fruit drinks, carbonated beverages, milk and French fries. This dietary pattern is unfortunately consistent with studies reporting that young children generally consume lower than recommended amounts of critical nutrients like calcium, iron, zinc, and vitamins A, C, and E.

Concerns about childhood obesity also begin in these early years. According to the most recent National Health and Nutrition Examination Survey report (NHANES 1999-2000), over 10 percent of US children between the ages of 2 and 5 are overweight. This rate, up from 7 percent in 1994, follows the trends seen in older children.

Not all children who are classified as overweight grow up to be overweight adults. However, many of them do. Over one-half of the children at the highest weight percentiles at age six will persist in being heavy into young adulthood; 70 to 80 percent of overweight adolescents will remain overweight throughout adulthood.

One factor affecting the weight of American kids is the time they spend on screen entertainment: watching television, playing video games and using computers. Like their older siblings, preschool children exceed recommended amounts of TV time. One study reported that 1/3 of children ages 2 to 7 have a television in their bedroom!

Children from low-income families are at greater risk of being overweight in early childhood. Many factors contribute to this disparity, including a reliance on inexpensive fast foods and fewer opportunities for physical activity due to dangerous neighborhoods and limited play facilities.

At the same time, low-income children, like those in Head Start and Early Head Start programs, are at higher risk for inadequate intake of nutrients. Nutrition experts are increasingly concerned about children who are inactive, overweight and undernourished.

Iron deficiency remains the most common nutrient deficiency around the world and in the United States. The 1999-2000 NHANES survey reported that 7 percent of American 1 to 2 year olds and 5 percent of 3 to 5 year olds suffer from low iron status, which can lead to anemia.

Iron deficiency anemia significantly impairs the mental and psychomotor development of infants and young children. Low iron intake can also increase a child's susceptibility to lead poisoning.

Although iron deficiency can be reversed with treatment, the possible reversibility of the impairment is not yet understood. That's why the Centers for Disease Control and Prevention (CDC) emphasizes that prevention and treatment of iron deficiency are more important than detection.

[<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5140a1.htm>]

Nutrition and Physical Activity from One to Five

After infancy, growth rates and energy needs gradually decrease through early childhood. By the age of 2, most healthy children have quadrupled their birthweight. Between the ages of 2 and 5, children gain an average of 4-1/2 to 6-1/2 pounds per year – and grow an average of 2-1/2 to 3-1/2 inches per year.

Early childhood can be divided into two distinct stages. **Toddlers**, ages 1 and 2 years, have a developing sense of selfhood and independence, which can sometimes lead to struggles over food (and many other issues as well).

Preschoolers, ages 3 and 4, are eager to learn and improve in all areas of their lives. This means that they gradually become more interested in new foods and games; more competent in self-feeding and physical movement; and more interested in being part of family meals and activities.

When it comes to nutrition, young children need the same 50+ nutrients as everyone else. Toddlers and preschoolers just need to get their nutrients more often and in smaller serving sizes than older children and adults. The recommended daily amount children two to five should eat from each food group in order to meet their nutrient needs is reflected in USDA's *MyPyramid*, www.mypyramid.gov.

Current nutrition guidelines for parents and the Child and Adult Care Food Program (CACFP) highlight the importance of some specific nutrients during the critical early years – for normal growth, age-appropriate development and good health. Of special importance are:

- **Fat:** Children's fat intake should not be restricted before the age of two, since fat is critical for brain growth and cognitive development. After the age of two, experts suggest that fat gradually be decreased to reach the recommended adult levels (30 percent of total calories from fat) by age five.
- **Iron:** Young children need adequate iron intake to insure both physical and mental growth; to prevent behavior and other psychomotor problems; and to maintain a healthy immune system. The best iron sources for children one to five are red meats, like lean beef, and fortified grain products, like breakfast cereals.
- **Calcium:** Early childhood is an important time to continue making calcium deposits in growing bones and teeth. The serious bone disease rickets has reemerged in some American children following restrictive vegetarian diets. Young children need adequate calcium on a daily basis from dairy foods or from fortified replacements –like soymilk fortified with calcium and vitamin D.
- **Vitamins A and C:** These vitamins have a long list of important jobs in the human body – including a healthy immune system. The ability to fight infections is especially important for children who spend time in group childcare or preschool settings where they are exposed to repeated colds and other infections. Many fruits and vegetables are an excellent, and delicious, source of these vitamins.

Physical activity is just as important for 2- to 5-year olds as nutrition. Young children need to be active to grow and develop normally. As with other skills, children need to practice their large motor skills over and over in order to learn to do them well.

Physical activity for children is not about “exercise” – it's all about play! Children can learn many things through active play. They can learn new skills and how to use their imagination. They can learn about words, feelings and thoughts – and about how to get along with others. Active play is also an important way to help young brains grow.

Young children will be more successful at physical activities – and enjoy them more – if the activities are simple, age-appropriate and fun. The California FitWIC project recommends toddler activities like:

- **Super Kids:** Help children jump and land safely by grasping their hands and jumping from low steps, curbs or boxes. Practice landing on both feet and bending the knees.
- **Balancing Act:** Lift one foot while holding on to a chair. Next lift the other foot. Now try it with no hands. Don't forget to switch legs.
- **Body Part Follow-the-Leader:** Move your body parts as you repeat the words and encourage children to do things: like bending one knee and an elbow; nodding your head; looking high and low; shaking a leg; clapping your hands; waving your arms; making circles with your hips; and wiggling your fingers or toes.

Getting preschoolers to be active is as simple as one of these activities:

- **Make Believe Walk:** Help children to pretend to walk through different places: in the forest; on the moon; in the jungle; on hot sand; through the snow; or in the mud.
- **Marching Band:** Make some instruments using: dried beans in an empty container with a lid to shake (oatmeal box or can); wooden spoons to bang on pots; and rubber bands stretched over containers and pulled to make sounds.
- **Helping Activities:** While inside, preschoolers can help pick up toys, make beds, dust furniture, feed and care for pets, clean floors, and carry laundry. Outdoors they can help walk the dog, wash the dog (and the car), and clean up the yard.

<http://pubs.cas.psu.edu/freepubs/pdfs/uk075.pdf>

Putting Research into Action

Early childhood researchers have positively influenced the guidelines and regulations of preschool nutrition programs like the *Child and Adult Care Food Program (CACFP)*. Similar recommendations apply to young children at home and in group settings. Here are ten suggestions adapted from the work of Susan Johnson, PhD, and Jennifer Fischer, PhD, two child nutrition experts. For an in-depth background paper on their research and advice for caregivers, go to *Topics in Nutrition: Children's Eating Patterns* at <http://www.hersheynutrition.com/children/index.asp>.

1. Children need eating routines and structure in the same way that they need routines at bedtime! Be sure to offer three meals and two to three snacks over the course of the day. In between, avoid grazing by adopting a “closed kitchen” policy.
2. What does hunger have to do with it? Everything! Children need to learn about their internal cues of hunger, fullness and satisfaction. Talk directly to children about hunger and fullness during mealtime and snacks. (How does your tummy feel now? Is your tummy hungry for more – or is it feeling full and happy?)
3. Realize that young children have variable appetites and eating patterns. Avoid focusing on the amounts they eat at any one time. Instead, offer healthy choices, learn about appropriate portion sizes for children, and evaluate food intake over the course of a day – or even several days.
4. Offer healthy, attractive, fun snacks. Routinely offer snacks that include colorful fruits and veggies.
5. Be patient with the introduction of new foods. Never give up with young children! Children need repeated exposure (as many as eight to 10 times) and varied experiences with new foods before they learn to like them. (Always remember how much they learn by watching the adults who are eating with them!)
6. Be vigilant about low-nutrient, high-energy beverages (and snack foods). Young children fill up quickly, especially on soft drinks (soda pop, Kool-Aid,[®] juice drinks, etc.) and even on large amount of fruit juices.
7. Be active! Turn off the television (limit young children to less than two hours per day) and encourage free play in safe areas – inside and outside whenever possible.

8. Make family meals a priority. Try for at least three family dinners a week. Save money by reducing the number of meals eaten away from home. When eating out, look for restaurants with calmer surroundings that allow for conversation.
9. Develop children's conversational styles and their sense of importance by eliminating distractions like television and loud music during meals and snacks.
10. Promote healthy eating – not dieting – with words, deeds and positive adult role models. Enjoy all foods in age-appropriate portions.

Ten Things Tots Can Do Instead of Watching TV

There is no doubt that television can be a tempting, and effective, babysitter for young children. There is also no doubt that reading, playing and interacting with adults or other children are always better options than watching television. Here are some ideas for busy parents, grandparents and caregivers to use when they turn off the TV (adapted from the *Media Awareness Center* at <http://www.media-awareness.ca/english/index.cfm>).

1. **Explore.** Baby-proof a room (or part of a room) and fill the space with an assortment of toys and safe household objects for children to play with.
2. **Watch.** Hang a bird feeder outside a window so birds and squirrels, instead of TV, can entertain children.
3. **Listen and move.** Play music at a moderate volume and show children how to sing, dance and have a blast.
4. **Touch.** Toddlers and preschoolers like to dig, scoop and mold – all of which help their emerging fine motor skills. Provide play dough or a bowl half filled with dry beans – along with cups and other utensils for playing.
5. **Splash.** Let children play in a bathtub or small play pool. (Remember to never leave a child alone even for a minute when he or she is in water!)
6. **Look at books.** Read a book or just look at the pictures with children. Try to have a variety of age-appropriate books, including some that are unfamiliar so that they will hold children's attention.
7. **Bag it.** Let children unpack and repack a small suitcase, tote bag or backpack with toys or safe household items.
8. **Sleep.** Help children develop regular naptime and bedtime habits.
9. **Help.** Since toddlers like to be where the action is, let them play alongside while adults work. Think creatively about how children can help with easy tasks – like setting a table with plastic dishes.
10. **Find a friend.** Trade babysitting time with other families so that children can enjoy being with other kids.

Online Resources for Healthy Young Children

If you want to know more about nutrition and physical activity for children 2 to 5, help is just a mouse click away. If you need materials to share with parents, there is no need to reinvent the wheel. The Internet is filled with training resources, as well as materials to share with families. Here are a few of the many sites that have everything you want to know about young children.

Bright Futures: <http://www.brightfutures.org/>

This national initiative, located at Georgetown University, is designed to promote and improve the health and well-being of infants, children and adolescents. Nutrition is just one of the **Bright Futures'** topics, but they offer extensive materials in both English and Spanish, for health professionals and families. You can download and print their materials at no charge – or order printed materials from them. (Local and state health, education and nutrition agencies are also excellent sources of materials.)

Child Care Nutrition Resource System: <http://www.nal.usda.gov/childcare/>

If you like USDA's online Healthy School Meals Resource System, this site is for you. It offers the same helpful menu of news, updates, resources, recipes and links that you find at other USDA program sites. It has a very useful set of links to information about special diets and special needs – to answer questions about young children with allergies, asthma, diabetes and disabilities that may affect nutrient needs or feeding skills.

Children's Nutrition Research Center: <http://www.bcm.tmc.edu/cnrc/>

This center, joint venture of Baylor College of Medicine, Texas Children's Hospital and the USDA's Agricultural Research Service, is one of six human nutrition research centers in the country. The staff includes some of the top US early childhood researchers. You can read all about their latest studies (online or by subscribing to their free newsletter) – and download a variety of free materials (some in both English and Spanish)

WIC Works Resource System: <http://www.nal.usda.gov/wicworks/>

For over 30 years, the Special Supplemental Program for Women, Infants and Children (WIC) has served low-income pregnant and post-partum women, infants and children up to their 5th birthday who are at nutritional risk. This site is packed with resources, reports and studies on the WIC population – exactly the same population served by childhood nutrition programs like Head Start and CACFP.