

Feeding Guidelines for Infants and Young Toddlers: A Responsive Parenting Approach

Guidelines for Health Professionals

Healthy Eating Research

Building evidence to prevent childhood obesity

Executive Summary, February 2017

Introduction

In the United States, a significant proportion of children 2 years of age or younger are at risk of childhood obesity. Data from the 2011-2012 National Health and Nutrition Examination Survey (NHANES) show that 8.1 percent of children ages 2 or younger were already above the 95th percentile and 7.1 percent were at or above the 97.7th percentile for weight based on their length.

Early life diet and feeding behaviors play an important role in establishing healthy food preferences and behaviors and preventing childhood overweight and obesity. Yet there is a dearth of evidence-based guidelines for infant and toddler feeding practices in the United States.

The federal government's current Dietary Guidelines for Americans (DGA) do not include guidelines for infants and toddlers less than 24 months. However, given new evidence showing that the first 1,000 days—or the period from conception to age 2—are critical for childhood obesity prevention, recommendations for this age group are expected to be included beginning with the next edition of the DGAs to be released in 2020.

In 2016, *Healthy Eating Research*, a national program of the Robert Wood Johnson Foundation, convened an expert panel to review the evidence that has emerged over the past two decades for promoting healthy nutrition and feeding patterns for infants and toddlers (ages 2 or younger). This executive summary summarizes guidelines presented in the expert panel's full report on what and how to feed infants and toddlers within the context of the rapidly developing child. These guidelines are based on current scientific evidence related to responsive parenting practices. The summary also addresses related behaviors such as physical activity, television and other media use (screen time), and sleep, as well as other important considerations including food allergies and food safety for infants and toddlers.



Definitions

COMPLEMENTARY FEEDING is a process that starts when human milk or infant formula is complemented by other foods and beverages and ends when the young child transitions fully to family foods. The complementary feeding period typically continues to 24 months of age.

COMPLEMENTARY FOODS are foods and beverages other than human milk or infant formula (liquids, semisolids, and solids) provided to an infant or young child to provide nutrients and energy.

RESPONSIVE FEEDING is a key dimension of responsive parenting involving reciprocity between the child and caregiver during the feeding process. It is grounded upon the following three steps: (1) the child signals hunger and satiety through motor actions, facial expressions, or vocalizations; (2) the caregiver recognizes the cues and responds promptly in a manner that is emotionally supportive, contingent on the signal, and developmentally appropriate; and (3) the child experiences a predictable response to signals.

RESPONSIVE PARENTING is a parenting style that is meant to foster the development of self-regulation and promote cognitive, social, and emotional development. Self-regulation includes overlapping constructs that can affect feeding behaviors including self-control, will power, effortful control, delay of gratification, emotional regulation, executive function, and inhibitory control.

The Evidence

There are many factors influencing what infants and toddlers consume. Caregivers need to be aware and understand: how infants and toddlers develop food preferences and the role they play in influencing those preferences; how infants and toddlers signal hunger and satiety; and the role of responsive feeding in developing healthy food habits. Further, caregivers also need to understand: how and when to feed complementary foods; sleep patterns and their influence on healthy eating; physical activity needs of infants and toddlers; and the need for limits on screen time. Detailed guidelines for caregivers on what and how to feed infants and toddlers are included in Appendices 1 to 5.

Breastfeeding

Due to the health benefits that breastfeeding offers to children and women, the American Academy of Pediatrics (AAP)

recommends that infants be breastfed exclusively from birth until about 6 months. Once complementary foods are introduced, it is recommended that breastfeeding continues until the child is at least 1 year old. Among infants born in 2013, 81.1 percent of women in the United States initiated breastfeeding; however, by six months the prevalence of women engaged in any breastfeeding dropped to 51.8 percent, and by one year to 30.7 percent. Differences in breastfeeding prevalence are observed across income categories, states, and race/ethnicity.

The most recent comprehensive meta-analysis that had global representation and adjusted for key study design and contextual factors, concluded that breastfeeding may protect children against the development of childhood obesity. As expected, the number of children in the general population who would benefit is small, given the numerous biological, economic, social, and lifestyle factors that affect the risk of obesity; however, there is evidence indicating the protective benefit may be more pronounced among children with genetic predisposition for obesity. These findings are highly consistent with the current understanding of childhood obesity risk as a life-course process that starts at the time of conception.

Shaping Food Preferences Among Infants and Toddlers

Understanding how flavor and food preferences are established early in life is crucial as early childhood dietary patterns track into later childhood and adolescence. The evidence suggests that infants born to mothers who consumed fruits and vegetables during pregnancy and while breastfeeding are more likely to learn to accept these foods.

Regardless of exposure during pregnancy and breastfeeding, repeated exposure to new and different food is necessary so that infants and young children learn to like them, especially for those that have bitter or sour taste profiles as is the case with many vegetables.

Likewise, it is vital to expose infants to different textures in order to properly transition to table food—for example, moving from pureed to mashed to lumpy and to chopped soft solid food during the first two years of life. By 2 years of age it is expected that children will have fully transitioned to food that comprises the family diet. For this reason it is crucial for the family diet to include a plentiful supply of fruits and vegetables.

The evidence regarding the shaping of food preferences in young children supports providing pregnant women and caregivers of infants and toddlers with the following information: (a) mothers consuming a healthy diet rich in vegetables and fruits during pregnancy and while breastfeeding can help shape healthy food preferences among their offspring; (b) breastfed infants are more likely than formula-fed infants to consume healthier diets by the

time they reach school age; (c) infants and toddlers should be exposed repeatedly to healthy foods, including vegetables, until they learn to accept and like them; (d) healthy food, including fruits, vegetables, and whole grains, should be readily available to serve to infants (when developmentally ready, somewhere between 4 and 6 months of age) at home and in child-care settings where they may spend many hours of the day; and (e) infants and toddlers should not consume (or consume a very small amount of) food and beverages rich in added sugars (i.e., desserts and sugary drinks), sodium, and added saturated fats.

The Role of Feeding Context

Infants and toddlers rely entirely on their caregivers to learn what, when, and how to eat. Caregivers should decide which types of food are made available to infants and toddlers and the amount of food served, the frequency with which food is offered, and the type and size of utensils used to eat (if any). Research has shown that feeding to soothe fussy infants has been associated with excessive weight gain and that poor sleep routines during the first two years of life are related to poor dietary quality and obesity risk in early childhood.

Allowing infants and toddlers to become familiar with healthy food, such as vegetables, is key for the development of healthy food preferences. Numerous attempts are needed for most infants to accept and learn to like new vegetables. The chances of accepting a novel food may increase by pairing it with a food or sauce the infant/toddler is already familiar with and likes (e.g., red bell peppers or yellow squash with a preferred healthy dip).

Evidence also shows that young children are more likely to try new and different foods when they observe their caregivers eating them enthusiastically, as opposed to when the food is offered to them without having a role model present.

The Role of Responsive Feeding

Because infants do not have the capacity to verbally communicate their feeding and psycho-emotional needs, it is imperative for caregivers to learn to understand how and what their infants communicate with different behaviors. This requires a responsive approach for all caregivers including parents.

Responsive feeding is a process that involves reciprocity between the infant/toddler and caregiver during the feeding process and is grounded upon the following three steps: (1) the child signals hunger and satiety through motor actions, facial expressions, or vocalizations; (2) the caregiver recognizes the cues and responds promptly in a manner that is emotionally supportive, contingent on the signal, and developmentally appropriate; and (3) the child experiences a predictable response to signals.

Black and Aboud (2011) recommend the following specific responsive feeding guidelines: (1) ensuring that the feeding environment is pleasant with few distractions (e.g., no television or other screens); (2) ensuring that the child is seated comfortably, ideally facing others; (3) ensuring that the expectations from the caregiver and child are communicated clearly and consistently; (4) ensuring that the food is healthy, tasty, developmentally appropriate, and offered on a predictable schedule so the child is likely to be hungry; (5) encouraging and attending to the child's signals of hunger and satiety; and (6) responding to the child's feeding needs in a prompt, emotionally supportive, contingent, and developmentally appropriate manner.

Nonresponsive feeding is strongly discouraged as it is characterized by a lack of reciprocity between the caregiver and child. Nonresponsive feeding can lead to: (a) the caregiver taking control and dominating the feeding situation by controlling and pressuring behaviors; (b) the child controlling the situation leading to indulgence; or (c) the caregiver ignoring the child and becoming uninvolved. When caregivers control the feeding, not only do they potentially override the child's internal hunger and satiety regulatory cues, but it is thought that they may interfere with the child's emerging autonomy and striving for independence based on the learning of new skills. Each of these undesired outcomes of nonresponsive feeding have been associated with the development of poor dietary habits and/or increased childhood obesity.

How caregivers respond to other behaviors, such as sleeping/waking patterns, and the soothing techniques used to calm distressed infants, can influence the infant's ability to learn to properly self-regulate food intake. Understanding sleeping patterns of infants and how rapidly they change during the first year of life (relatively short sleep/wake cycles in early infancy, with most infants sleeping through the night by 6 months) has also been identified as central for preventing unhealthy eating behaviors and obesity risk in young children.

A review of evidence from randomized control trials (RCTs) focused on responsive parenting practices supports the view that infants and toddlers should not be pressured to eat or finish the food served to them. The RCTs emphasize the importance of allowing the infant and toddler to participate in family meals and to avoid distractions during mealtimes, including TV viewing and other electronic screens. These studies (see full report for references and summaries of studies) reiterate the importance of mealtimes being a warm and pleasant experience with plenty of verbal and non-verbal interactions between the caregiver and the infants and toddlers. The RCTs also emphasized the importance for caregivers to help infants and toddlers learn to follow routine feeding and sleeping schedules. This approach is likely to not only be crucial for the self-regulation of food intake but also of emotions.

Introducing Infants to Complementary Foods

There is broad consensus that complementary foods (commonly referred to as solid foods) should be introduced once the infant is: able to sit without support and has good head and neck control; has the ability to munch or chew and to use the tongue to move pureed food to the back of the mouth for swallowing; no longer has the extrusion reflex (i.e., does not automatically push solids out of the mouth with her/his tongue); demonstrates ability to bring hands and toys to the mouth for exploration; and indicates a desire for food, such as showing eagerness to participate in family mealtimes and trying to grab food to put in her/his mouth. The vast majority of infants reach these developmental milestones between 4 and 6 months of age. The ability to sit without support is considered to be a key cue for assessing readiness for introduction of complementary foods as it correlates strongly with the rest of the cues and also with physiological development including gastrointestinal, renal, and immunological system maturation. Experts also agree that complementary foods should not be introduced before 4 months of age as the infant's body is not physiologically or developmentally ready. Early introduction of solids also may increase the risk of childhood obesity.

Recognizing Infants' and Toddlers' Hunger and Satiety Cues

Responsive feeding of infants and young toddlers relies heavily on learning how they communicate hunger and fullness. Infants' primary form of communication is crying, and research has shown this causes distress to caregivers who often interpret crying as a sign of hunger. In early infancy, crying should be interpreted as a sign of hunger only if it is accompanied by additional cues, including: hand-to-mouth movements, mouthing, rooting, sucking noises/motions, fast breathing, clenched fingers and fists over chest and tummy, and flexed arms and legs. Infants use different signals to indicate that they are full, such as closing their mouths when food is offered and turning their head away from the food. As infants become older and enter toddlerhood, hunger cues also include leaning towards food, visually tracking food with eyes, limb movements showing excitement, opening mouth as the spoon approaches, and asking for or pointing to food. In general, feeding cues progress as the child ages from behaviors that are subtle and primarily oral (e.g., mouthing) to those that are active and tend to involve greater body movements (e.g., reaching, pointing). If ignored, early and active cues are followed by late cues, such as crying and struggling, which indicate heightened levels of agitation.

Other Important Considerations for Infants and Toddlers

Sleep Considerations for Infants and Toddlers

Healthy sleep habits increase sleep duration and prevent sleep problems. Lack of sleep among children under two has been identified as a risk factor for the development of childhood obesity. For example, in the U.S. Project Viva cohort study, children with less than 12 hours of daily sleep between age 6 and 24 months had almost double the odds of obesity at age 3 years compared with those sleeping at least 12 hours per day. Promoting healthy sleep has been found to be effective at improving feeding behaviors and weight outcomes among infants and toddlers.

Healthy sleep requires adequate duration, appropriate timing, good quality, regularity, and the absence of sleep disturbances or disorders. An expert panel convened by the American Academy of Sleep Medicine recently developed evidence-based sleep guidelines for children and adolescents. To promote optimal health, infants ages 4 to 12 months should sleep a total of 12 to 16 hours per day (or 24 hour cycle), including naps, on a regular basis. Children 1 to 2 years of age should sleep 11 to 14 hours per 24 hours (including naps) on a regular basis. General recommendations for infants younger than 4 months

are difficult to make due to the wide range of normal variation in duration and patterns of sleep in early life, and insufficient evidence for associations with health outcomes.

Physical Activity Considerations for Infants and Toddlers

The evidence available in 2016 indicates that infancy is a time when movement and active play facilitate the motor, social, and cognitive development needed for healthy growth and well-being. Toddlerhood is a time when children are eager to actively explore and learn from their environments. For this reason, proper infant and toddler development relies heavily on early life opportunities to explore and move frequently. Motor, social, and cognitive development are fundamental for developing healthy eating habits, thus physical activity and active play opportunities are strongly linked to the proper implementation of responsive feeding guidelines. As with feeding behaviors, caregivers should also be role models for their infants and pay attention to their own sedentary (e.g., screen time) and physical activity behaviors.

Screen Time/Sedentary Behavior Considerations for Infants and Toddlers

Typical sedentary behaviors of children 2 years old or younger refer to: time spent sitting while playing or engaging in learning activities; time spent on screens, such as watching TV or in front of a digital device screen (e.g., electronic tablet, smartphone, computer screen); and time spent restrained in a car seat, high chair or stroller, or inside of a play pen or crib while the child is awake. It is important that health professionals working with parents of young children are well trained to provide adequate advice to parents on how to decrease sedentary behaviors, especially those related to screen time and the time that children spend restrained in equipment or in an area that restricts movement. The AAP recommends caregivers: (1) avoid using screen media for children younger than 18 months, with the exception of video-chatting facilitated by an adult caregiver; (2) choose high-quality programming/apps to use together with their 18- to 24-month old toddlers (letting toddlers use media by themselves should be avoided); (3) avoid exposing infants and toddlers to screens during meals and for one hour before bedtime; (4) avoid using media to calm their children; (5) keep bedrooms, mealtimes, and parent-child playtimes screen-free for children and parents; and (6) avoid exposing toddlers to apps with advertising and/or unhealthy messages.

A review of 24 studies assessing the prevalence of sedentary behaviors in children under 2 years of age found that most sedentary behaviors at this age were based on parental self-report of screen time. The review found a wide range of screen time exposure per day among infants and toddlers (37 min to 330 min/day). This review concluded that most children had high exposure to TV and screen time by 2 years of age. The 2012 Canadian guidelines for children ages 0 to 4 recommend that for healthy growth and development parents should minimize the time that their infants and young children spend on sedentary activities while awake. In summary, caregivers should avoid using screen media for children younger than 18 months, with the exception of video-chatting facilitated by an adult caregiver, and prolonged sitting or being restrained is not recommended for more than one hour at a time.

Food Safety Considerations for Infants and Toddlers

Children under 5 years of age are highly vulnerable to foodborne illness because their immune systems are still developing and they produce less stomach acid that kills harmful bacteria. Children under 5 years of age have the highest incidence rates of any age group of infections

from dangerous pathogens found in food including *Campylobacter*, *Clostridium Botulinum*, *Cryptosporidium*, *E. Coli* 0157, *E. Coli* non-0157, *Listeria*, *Salmonella*, *Shigella*, and *Yersinia*. Food illnesses can be lethal for infants and toddlers because they are often accompanied by diarrhea, which in turn can quickly deplete the young child's vital body fluids (i.e., severe dehydration). Foodborne illnesses can also cause serious discomfort and seriously disrupt feeding routines and behaviors as they often lead to nausea, vomiting, stomach pain and cramps, fever, and chills. Two other important food safety concerns for infants and toddlers are food-related mouth burns (from offering fluids or solid food that are excessively hot) and choking. Food safety for infants and toddlers relies almost entirely on their caregivers. Thus, as part of dietary advice targeting the first two years of life, it is important to communicate clear evidence-based food safety guidelines targeting caregivers of infants and toddlers. The expert panel recommendations regarding food safety for infants and toddlers are presented in Appendix 6.

Food Allergy Considerations for Infants and Toddlers

Pregnancy and early life are highly sensitive periods for the development of the immune system and related outcomes, including risk for the development of food allergies. Thus, it is understandable that in the past, experts have recommended that dairy products and other highly allergenic food like eggs, peanuts, and fish not be introduced until after an infant's first birthday.

Recent systematic reviews, however, have found that maternal diet during pregnancy and the period mothers are breastfeeding was not associated with the development of food allergies in children. Recent evidence has also shown that there is no reason to delay introduction of allergenic foods beyond 12 months and perhaps not even beyond 4 to 6 months of age, when most infants are ready to be introduced to complementary foods. Additional evidence suggests that exposing infants during the first year of life to common allergenic food may actually decrease the risk of subsequent development of allergies to those food items. Given the many unknowns with regards to the development of food allergies, it is still important to be cautious when introducing infants to the solid food items that are most commonly associated with food allergies. For example, the American Academy of Allergy, Asthma & Immunology recommends introducing the first tastes at home rather than at childcare or a restaurant. The expert panel recommendations regarding food allergy considerations for infants and toddlers are presented in Appendix 7.

Implementation Considerations For Responsive Feeding Guidelines

Early Care and Education Programs

In 2012, 60 percent of children from birth to 5 years of age were under non-parental care during the week at child-care centers (41%), home care by a relative (26%), and/or home care by a non-relative (5%) and there is some overlap within these groups because children may have to multiple care arrangements. (NCES, available at: http://nces.ed.gov/nhes/tables/nonrelative_care.asp). These programs are collectively referred to as Early Care and Education programs (ECE) and they play a key role in the implementation of responsive parenting/feeding practices and dietary guidelines targeting infants and toddlers.

One study in ECE settings measured healthy eating outcomes (i.e., daily offering of fruits and vegetables, and avoiding offering fast food, sugary food, or desserts). It also examined three responsive feeding practices (i.e., allowing children to eat when hungry, sitting down with children during mealtime, and allowing children to leave their food unfinished) for both infants and toddlers. It showed that infant-care providers were more likely than toddler-care providers to follow responsive feeding and healthy eating practices. A relevant policy finding from this study was that providers working at centers participating in the federal Child and Adult Care Food Program (CACFP) were more likely to practice responsive feeding and healthier eating practices with both infants and toddlers. For example, practices such as sitting with children at meals and limiting fast food were significantly associated with CACFP participation.

The Health Care System

The health care system surrounding pregnant women, mothers, infants, and toddlers needs to be substantially strengthened at the facility (e.g., Baby-Friendly Hospitals) and community (e.g., local health departments, primary health care centers, community health worker networks, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)) levels. Obstetricians and pediatricians have a central role to play in addressing the childhood obesity epidemic. Studies have shown that pediatricians have serious time constraints given the large amount of information that they need to convey in a very short period of time during each well child visit. For this reason, it is important for nurses and other health care providers, besides pediatricians, to also be well trained in

responsive parenting/feeding principles. It is also important for public health workers, including home visiting nurses and community health workers, to be engaged in educating and supporting caregivers with the implementation of responsive parenting/feeding guidelines. The combination of counseling with text messaging and web-based support and information has strong potential to improve the ability of the primary health care system to better address the childhood obesity epidemic by sharing current, accurate recommendations for infant and toddler feeding guidelines based on responsive parenting/feeding principles.

Marketing of Food, Beverages, and Infant Formula to Young Children and Their Caregivers

Marketing by the food industry has been identified as a powerful factor affecting the food and beverages that caregivers offer to young children. Even though most food marketing research has been done with preschoolers or older children, there is strong evidence that marketing unhealthy food to caregivers of infants and toddlers is likely to also be highly effective. For example, mailings of vouchers for free infant formula and/or providing cases with free samples of formula to postpartum mothers without their prior consent is likely to undermine their ability to breastfeed even if they were considering or intending to do so. The marketing of energy-dense foods of poor nutritional quality to caregivers of young children may also negatively affect the ability of infants to learn to self-regulate their food intake with perhaps lifelong implications.

For this reason, food industry marketing practices need to be aligned with the national goal of improving infant/toddler feeding practices. It is important to further document marketing approaches and the nature of the food and beverage products being offered to caregivers of infants and toddlers in today's marketplace and assess the impact of these products and marketing approaches in the responsive parenting/feeding context. In the meantime, it is recommended that states consider the principles outlined in recent guidelines seeking to prevent unethical marketing of food and beverages to the detriment of children's well-being. Those guidelines emphasize the need for food products marketed to children to meet specific nutrition criteria and for the implementation of measures to protect children against unethical marketing of unhealthy food products rich in added sugars, sodium, and/or saturated fat.

Conclusion

The first 1,000 days of life represent a highly sensitive period of time for children to learn to accept and like healthy food. Given that the food and beverages infants and toddlers are exposed to depend primarily on their caregivers, it is crucial that caregivers have access to the foods and tools necessary to foster healthy eating practices, such as those recommended in this expert panel report. While previous guidelines in the United States and other countries have included responsive parenting/feeding principles, the evidence-based guidelines produced by the expert panel provide the most comprehensive and pragmatic approach to date for communicating to caregivers *what* and *how* best to feed infants and toddlers, while also taking into account the rapidly changing developmental stages during the first two years of life.

In order to foster optimal child development and prevent excessive weight gain, it is also important for additional responsive parenting principles, including physical activity, soothing, and sleep, to be considered as these have also been shown to influence early life feeding behaviors and weight outcomes.

The primary audience for the complete recommendations presented in this report is caregivers, including, but not limited to caregivers in the home setting. These guidelines can also be applied through child-care settings where many infants and toddlers are now being served. The guidelines also make recommendations about system changes that are needed to adequately support parents and caregivers in implementing the recommended guidelines.

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Appendix 1. Infant Feeding Guidelines: What to Feed From Pregnancy to One Year

Prenatal & Postnatal

- Healthy eating during pregnancy and while breastfeeding, including consuming plenty of vegetables and fruits, will help shape your child's preferences for healthy and nutritious food.
- Eating fatty fish during pregnancy and while you breastfeed will provide your baby with more omega 3 fatty acids which are needed for the optimal development of her/his brain. Guidelines for safely eating fish during pregnancy and while breastfeeding can be found at <http://www.fda.gov/food/foodborneillnesscontaminants/metals/ucm393070.htm> and <https://www.epa.gov/fish-tech/epa-fda-advisory-mercury-fish-and-shellfish>.

0 to 6 Months

- For the first 6 months (or until the introduction of solid food), most babies only need breast milk (or formula). Breast milk provides nearly all the nutrients needed for optimal growth, and strengthens the infant's immune system. The composition of breast milk changes as your baby grows to match her/his individual nutritional needs. Breastfeeding is recommended to continue until your baby is at least 1 year old.
- It is recommended that exclusively breastfed infants receive a daily supplement of vitamin D (400 IU), since this vitamin is low in breast milk. Infant formulas are fortified with vitamin D. However, if your baby consumes less than 1 liter per day of formula, your doctor may advise a vitamin D supplement for your baby.
- If you are not feeding your baby breast milk, iron-fortified formula is the next best choice to satisfy your baby's nutritional needs during the first six months of life. Do not feed low-iron formulas (those that have less than 6.7 milligrams of iron per liter) to your baby.
- Newborns consume about 1 to 2 ounces of formula per feeding occasion during the first month of life. This amount increases to about 2 to 3 ounces per feeding during the second month, and then gradually increases to 4 to 6 ounces by 5 months. Pay attention to your baby's hunger and fullness signals and never pressure her/him to finish the bottle. Your baby does not need to finish the formula in the bottle.
- Be cautious about the volume of formula or expressed breast milk given at each feed. Studies have shown that bottle size matters. The bigger the bottle used, the more likely the baby will be to consume more than needed.
- It is not recommended to offer fruit juices or sugar-sweetened beverages before your baby's first year of life.
- Only breast milk or formula should be fed with a bottle to babies. Don't add cereal to the milk in your baby's bottle. This practice will not improve the sleep of your baby at night and it may interfere with how well nutrients in breast milk or formula are absorbed.

6 to 12 Months

- When your baby is between 4 and 6 months old, pay attention to her/his developmental signs to find out if your baby is ready to start eating solid food. Signs your baby is ready include sitting up unsupported, munching and chewing food, and the ability to swallow food, grasp items, and bring food to her/his mouth. If your baby pushes solids out with her/his tongue when food is offered (thrust reflex), and/or gags when a spoon or food is placed in her/his mouth then she/he is not yet ready to be introduced to solid food.
- Sometime between 4 and 6 months (when your baby is developmentally ready) your baby's nutritional needs can no longer be met by breast milk or formula alone. At this time, gradually start introducing solid food by offering 1 to 2 teaspoons of a pureed or mashed food, slowly increasing the amount while paying attention to your baby's hunger and fullness signals. If your baby is still hungry after consuming the small amount of solids recommended, then feed breast milk or formula.
- Mothers who choose to breastfeed are encouraged to continue breastfeeding until their babies are at least 1 year old.
- From 6 to 12 months, breast milk or formula continues to be the most important source of nourishment for your baby. Solid food needs to be introduced gradually. Solid food will initially provide about one-third, increasing to over half, of the total calories that your baby needs by the time she/he is 1 year old. Examples of the amount of solids needed between 6 and 12 months can be found at: http://www.fns.usda.gov/sites/default/files/cacfp/CACFP_infantmealpattern.pdf.
- Exclusively breastfed babies need to get started on solid foods that are rich in iron and zinc sometime between 4 and 6 months, because by that time breast milk does not provide enough of these nutrients. Iron-zinc fortified baby cereals or pureed/mashed meats are recommended as first solid foods for exclusively breastfed babies. In general, about 2 servings per day of cereal (2 tablespoons/serving) OR 1 to 2 ounces of meat per day is recommended to meet the need for these nutrients. However, each baby needs different amounts to start. Pay attention to your baby's hunger and fullness signals to find out how much your baby needs to eat.

Appendix 1. Infant Feeding Guidelines: What to Feed From Pregnancy to One Year (cont.)

6 to 12 Months (cont.)

- If you choose to formula feed, it is recommended that you give your baby formula fortified with iron and zinc. The gradual introduction of solid food to your baby sometime between 4 and 6 months of age is important because it supports her/his ability to learn to eat a variety of healthy food with different textures and flavors. Introduction of solid food also helps with your baby's development, including social skills.
- After introducing iron- and zinc-fortified baby cereals or mashed meats, there is no particular order to follow for introducing solid food. At this point, your baby is able to digest and absorb the nutrients from healthy food belonging to different food groups. However, it's important to keep in mind that the earlier vegetables are introduced (once your baby is ready to consume solid food), the more she/he is likely to easily accept them.
- When introducing a new vegetable, it is recommended to mix it first with a familiar food such as breast milk, formula, or cereal. Combining new food items that are more difficult to accept by babies, such as some vegetables, with food they are already familiar with can help your baby accept and learn to like vegetables more readily.
- Introduce your baby to a variety of food from all the food groups (vegetables, fruits, grains, meats/protein, dairy) by the time she/he is 7 to 8 months old.
- Offering a variety of vegetables and fruits and avoiding food of limited nutritional value, such as those high in calories, sugar, salt, and fat (e.g., French fries, sugary cereals, cookies), helps your child gain a healthy amount of weight.
- What your baby eats at around 9 months is indicative of what she/he will like to eat when school-aged. Offer your baby a variety of vegetables and fruits and whole grain products (e.g., brown rice, whole grain cereals).
- It is important to introduce your baby to a large variety of vegetables and fruits prepared in different healthy ways and textures before she/he turns 1 year old. This will expose your baby to an array of flavors and textures that will make it easier for her/him to accept and learn to like healthy food from all the food groups (fruits, vegetables, whole grains, dairy, and protein). Your baby will also learn to self-control the desire for unhealthy food that has excessive amounts of added sugars, sodium (salt), saturated fat, and calories.
- Sometime between 6 and 8 months, introduce your baby to pureed or mashed food, and gradually transition into lumpy food and soft finger food. Then, between 8 and 12 months, your baby can start eating minced, chopped food and hard finger food. Experiencing different textures will help your baby with her/his chewing skills, and with learning to accept and like different healthy food. Encourage your baby to self-feed as soon as she/he is ready.
- Between 6 and 11 months, babies eat about every two to three hours or about five or six occasions during the day.
- Besides offering 6 to 8 ounces of breast milk or iron-fortified formula, at each meal you can offer your baby:
 - Up to 4 tablespoons of iron-fortified infant cereal or protein foods (meats, eggs, legumes) or dairy foods such as cottage cheese (up to 4 ounces), cheese (up to 2 ounces), or yogurt (up to 8 ounces)
 - AND
 - Up to 2 tablespoons of vegetables or fruit
- For a smaller meal or snack you can offer breast milk or formula (2 to 4 ounces), AND:
 - Up to ½ slice of whole grain bread or up to 2 whole grain crackers, or up to 4 tablespoons of iron-fortified infant cereal
 - AND
 - Up to 2 tablespoons of vegetables or fruit, or a combination of both
- Once your baby starts solid food, it is recommended to offer a total of 4 to 8 ounces per day of plain drinking water in a cup. This will help your baby get familiar with the taste and to learn to like plain water.
- When preparing food for your infant, do not add salt or sugar. Likewise, when choosing baby food that is already prepared, choose options without (or with limited amounts of) added salt or sugars. This will help your baby learn to like the natural flavors of food and help your child avoid consuming excessive amounts of salt and sugar later on in life.
- Feed your baby only healthy food that provides plenty of vitamins, minerals, and fiber, including fresh vegetables, fruits, and age-appropriate whole grain products. Also, make sure to feed your baby nutritious food that provides an adequate amount of protein (such as eggs, fish, meat) and energy.

Appendix 1. Infant Feeding Guidelines: What to Feed From Pregnancy to One Year (cont.)

Foods to Avoid or Limit

- Cow's milk should NOT be offered before the child turns 1 year old because it may cause intestinal bleeding.
- Plant-based beverages (e.g., soy, rice, almond milks) are NOT recommended for your child in place of breast milk or formula, unless prescribed by your pediatrician (e.g., commercially prepared soy-based infant formula). These beverages are not designed to meet the nutritional needs of your child to the same extent as breast milk or infant formula.
- It is recommended to offer mashed fresh fruits instead of fruit juices since they have a higher nutritional value. Also, keep in mind that fruit juices and sugar-sweetened beverages are a concentrated source of calories that may displace other food with better nutritional value, or discourage your baby from eating other nutritious food that is not sweet. AVOID introducing fruit juices during the first year of life. Avoiding sugar-sweetened beverages can also help prevent dental cavities.
- It is strongly recommended to offer NO sugar-sweetened beverages such as flavored drinks (including Kool-Aid, fruit drinks, sodas, horchata (sweetened rice water), sports drinks, sweetened teas, or any other sugar-sweetened beverages) to your baby during the first year of life. Doing so could reinforce your baby's strong preference for sugary food and beverages and make it more difficult for her/him to learn to like healthy food such as vegetables, fruits, and plain water.
- Before choosing food for your baby, check the food label and ingredient list. Choose food with no or very limited amounts of added sugars and sodium (salt).
- Honey should NOT be given to children under 12 months old since it may cause a serious condition known as botulism.
- Supervise your child during feeding time and avoid offering food items that are a choking hazard such as nuts, grapes, popcorn, hot dogs, and hard candies.

Spoon, Cup, and Self-Feeding

- Between 6 and 12 months, it is recommended to transition infants from using a bottle to a cup.
- By 12 months, your baby should be able to spoon feed herself/himself and hold a cup with both hands.
- At around 6 months, you can use a baby spoon to start offering pureed food, and water in a sippy cup held by an adult.
- At around 8 months, your baby will start to try to spoon-feed by herself/himself, and she/he most likely will be able to drink from a cup with less spilling.
- Babies prefer to use their hands to explore solid food. Although this is messy, it allows the child the opportunity to explore and learn to like healthy food. Encourage your baby to self-feed.

Appendix 2. Toddler Feeding Guidelines: What to Feed During the Second Year of Life

Developmentally Appropriate Feeding

- One- to 2-year-olds have small tummies and can only eat small portions at a time, so they should eat five to six times a day (this can be from meals and healthy snacks). Sliced fresh fruit (e.g., apples, peaches, strawberries), cooked vegetables or vegetables with dip (e.g., carrots, broccoli, peas), and whole grain crackers with cheese are all good ideas of healthy snacks.
- By 1 year of age, children need about 1,000 calories every day. However, each child has different needs, so pay attention to her/his hunger and fullness signals. Examples of healthy meal patterns that provide adequate amount of nutrients and calories for 1- to 2-year-olds can be found at: http://www.fns.usda.gov/sites/default/files/cacfp/CACFP_childadultmealstandards.pdf.
- Once your child is 1 year old, structure eating occasions—she/he needs to eat three meals and two to three healthy snacks at about the same time every day. Following a regular schedule will help your child learn when and what to expect to eat during the day. However, don't worry if your child decides to skip a meal or snack. What is important is for you to remember to offer the food and let her/him decide how much she/he wants to eat.
- As much as possible make sure that your child's meals are part of your family meals. Toddlers learn to eat table food and socialize during family meals.

Milk

- The American Academy of Pediatrics recommends giving pasteurized whole cow's milk to 1- to 2-year-olds. However, your health care provider may recommend pasteurized reduced fat milk (2%) instead if there is a family history of obesity or heart problems.
- Offer cow's milk with no added sugars (e.g., no flavored milks). Added sugars may interfere with the development of your toddler's preferences for healthy food (such as vegetables and fruit) and may cause oral health problems, including dental cavities, and lead to extra calorie intake.
- Give your toddler cow's milk in a cup instead of a bottle. Offering milk in a cup instead of a bottle can help your toddler improve his/her motor skills.
- Too much milk may decrease your toddler's appetite for other food needed to meet nutritional needs. Keep your child's total milk consumption to no more than 2 cups (16 fluid ounces) per day while offering a variety of healthy food.
- At each meal, or as part of a snack, offer your toddler ½ cup (4 ounces) of milk.
- You can offer ½ to ¾ cup of yogurt in place of milk during meal or snack times, but serve only plain yogurt or yogurt without excessive total sugars (no more than 23 grams per 6 ounces). Plain yogurt can be mixed with fruits to increase its acceptance by your toddler.
- It is fine to continue breastfeeding beyond one year if desired by parent and child. The frequency of breastfeeding and how long each nursing episode lasts typically decreases quite a bit during this time as your child consumes more solid food.
- Bottle feeding is strongly discouraged after 12 months. Try to wean your child from the bottle by the time she/he is 1 year old. Doing so will reduce the risk of dental cavities and other dental problems later on.

Water, Fruit Juice, and Sugar-Sweetened Beverages

- Water is the best option to quench your child's thirst. Your toddler needs about 2 cups of water per day to cover her/his fluids needs. Use a cup to offer water. Do not serve sugar-sweetened beverages (e.g., soft drinks, sports drinks, fruit drinks, energy drinks, sweetened teas). Your toddler is still learning to accept and like healthy food and beverages, and consuming sugar-sweetened beverages can interfere with this process.
- Whenever possible, offer fresh fruit instead of 100% fruit juice to your toddler since whole fruit provides less sugar and more fiber than juice. Avoid fruit canned in heavy syrup or with sugar added. Excessive fruit juice and fruit with added sugar can displace other nutritious food and lead to dental cavities.
- If you decide to offer 100% fruit juice to your toddler, limit intake to no more than 4 ounces per day and offer it with a cup, not a bottle.
- Don't put your toddler to sleep with a bottle or sippy cup. This can cause dental cavities and other oral health problems.

Appendix 2. Toddler Feeding Guidelines: What to Feed During the Second Year of Life (cont.)

Dietary Diversity

- Plan meals and snacks to provide a variety of healthy food from all food groups (fruits, vegetables, meats/protein, dairy, whole grains).
- Multivitamins are not needed if your child is eating a healthy nutritious diet. If your doctor or health care provider recommends giving multivitamins to your child, choose brands that are low in sugar. Talk to your dentist if you don't know which ones are low in sugar.
- Include a variety of vegetables, especially dark green, red, and orange types. These vegetables are rich in many nutrients that are difficult to get in adequate amounts from other food. Exposure to a variety of vegetables will also help your child learn to like vegetables. Offer $\frac{1}{4}$ to $\frac{1}{2}$ cup of vegetables at most eating occasions.
- Offer a variety of fruits of different colors. Offer your child $\frac{1}{4}$ to $\frac{1}{2}$ cup of fruit at each eating occasion.
- Provide a variety of poultry, fish, meats, and meat alternates (e.g., beans, lentils, tofu) to your toddler. Offer $\frac{1}{2}$ to 1 ounce of poultry, fish, meat or meat alternate at most meals and snacks. Avoid feeding your toddler food that is high in sodium (salt) such as processed meats like ham, lunch meats, and packaged breaded chicken and fish.

Snacks

- Offer only nutritious snacks to your toddler. Remember that at this age, snacks are a very important source of nutrients for growth and development and help to shape eating habits for life. At most snacking occasions, include a fruit or a vegetable combined with food from the grain or dairy group.

Whole Grains and Fiber, Omega 3 Fatty Acids

- Offer your toddler whole grain food, such as whole wheat bread, whole wheat pasta, corn tortillas, or brown rice. These food items are rich in fiber which is often missing from children's diets. Offer $\frac{1}{2}$ to 1 slice of whole grain bread, or $\frac{1}{4}$ to $\frac{1}{2}$ cup of whole grain cereal or pasta at most meals and snacks.
- Offer your toddler deboned fish such as salmon, white tuna, and trout. Fish is a good source of healthy fats known as omega 3s that are very important for brain development.
- Choose food for your toddler prepared with healthy oils, such as olive, canola, corn, or sunflower oil.

Limit Sugar and Sodium and Avoid Trans Fats

- Avoid adding too much salt or sugar to your toddler's food. Otherwise your child will develop a strong preference for salty and sweet food and beverages. Remember that the food that you prepare can be seasoned with natural herbs and spices (e.g., basil, oregano, cumin, chili, ginger) instead of salt, sugar, honey, and other sweeteners.
- Read food labels and the list of ingredients when choosing already prepared food for your toddler. Avoid food that has high amounts of any type of added sugars, including high fructose corn syrup (e.g., sugar-sweetened beverages like Kool-Aid, sodas, sports drinks) or sodium (e.g., packaged macaroni and cheese) or that contains any amount of trans fats (e.g., French fries). The American Heart Association and the Academy of Nutrition and Dietetics both recommend that children under 2 years old should not consume any added sugars from food or beverages.
- Limit your toddler's consumption of snacks high in sodium and with added sugars. Remember that your toddler is still learning to develop eating habits for the rest of her/his life.

Appendix 3. Responsive Parenting/Feeding Guidelines for Caregivers: How to Feed in the First 6 Months

Responsive Feeding; Hunger and Satiety Cues

- Responsive feeding involves recognizing and understanding your baby's hunger and satiety cues and associated behaviors and responding accordingly through a warm and nurturing relationship.
- Babies are born with a natural ability that helps control their appetite. It's important for you to learn how to interpret and respond accordingly to your baby's hunger and fullness signals. Being able to do that takes some learning.
- Misinterpreting your baby's hunger and fullness signs can reduce your baby's ability to self-control her/his appetite and lead to overeating as she/he grows up.
- Help your baby learn to eat only in response to hunger and stop when full, so that she/he doesn't learn to eat for reasons other than hunger.
- Crying by itself cannot be interpreted as a sign of hunger. Additional cues that may indicate that your baby is hungry at this age are: bringing hands to mouth, rooting reflex (ability that babies are born with to help with breastfeeding; it involves turning their heads toward anything that strokes their cheek or mouth), sucking noises, fast breathing, clenching fingers, flexing arms and legs.
- Although many parents interpret crying as a sign that the baby is hungry, it is important to remember that babies cry for many reasons—they may be wet, uncomfortable, or tired.
- When your baby cries, before offering food, try to soothe to calm her/him down and first check for things that are making your baby uncomfortable. Doing this may help you avoid overfeeding your baby or setting up the expectation that crying will always lead to feeding.
- Your baby will let you know when she/he is full and no longer wants to eat. For example, at this age she/he may push you away, stop sucking, extend or relax her/his arms, legs, and fingers, or simply fall asleep.
- Babies have tiny stomachs, so they need to feed often throughout the day.

Baby's Wake/Sleep Cycles

- Parents may feel overwhelmed when their babies cry or seem fussy.
- During a typical day between 4 months and 1 year, a baby sleeps from 12 to 16 hours distributed across frequent wake/sleep cycles.
- During the first month of life, it's normal and part of healthy development for babies to wake up three or more times at night, and sleep for short periods of time during the day.
- As your baby approaches 6 months, it's normal for her/him to sleep through the night.
- As your baby grows, she/he will sleep for longer periods of time during the night. However, at times your baby's sleep patterns may fluctuate. She/he will typically get back on track, so be consistent with how you respond to your baby's waking at night.
- Strategies recommended for responding appropriately to night waking include: waiting a minute to see if baby settles on her/his own and then going in and trying soothing techniques besides feeding if not showing hunger signs (lengthening the wait time as the child develops); feeding if hungry; making nighttime visits short and relatively "quiet" so that the baby doesn't expect stimulation time in the middle of the night.

Soothing Techniques to Calm a Baby

- Use soothing techniques to calm a crying baby, such as rocking, swinging, swaddling, repeating a word, shushing, or changing her/his environment.
- Some, but not all, babies may need a pacifier to calm down.
- If your baby was recently fed and is crying or fussy make sure to check for things that are making her/him uncomfortable, such as a wet diaper, and try to calm her/him down using soothing techniques.

Appendix 3. Responsive Parenting/Feeding Guidelines for Caregivers: How to Feed in the First 6 Months (cont.)

Temperament

- Knowing your baby's temperament and causes of fussiness can help you to interpret the soothing and feeding needs she/he is communicating, and help your baby develop and grow well.
- Your baby's fussiness is not always related to hunger. For example, it may be related to being wet, too warm or cold, tired, overstimulated, teething, or being ill.
- Some babies have a fussier personality or temperament than others or experience times that they are more fussy than usual. Fussiness could be interpreted as a baby being hungry when it's not, and could lead to overfeeding.

Pressure to Finish a Feed

- Don't force your baby to finish the bottle or continue eating from your breast, since this will interfere with the baby's natural ability for appetite control down the road. Remember that your baby knows when to stop feeding.

Bottle Use

- Be cautious about the volume of formula or breast milk given at each feed. Studies have shown that bottle size matters. The bigger the bottle used, the more likely babies will be fed more than what they need.
- It is not recommended to mix cereal with formula or breast milk in a bottle. There is no evidence that this helps babies sleep longer and it could be a choking hazard.
- Feeding cereal in a bottle can diminish your baby's ability to regulate her/his appetite resulting in overfeeding and gaining weight excessively.
- Feeding cereal in a bottle to infants 0 to 6 months may cause discomfort as their tummies may not be ready for the cereal.
- Do not practice "bottle propping" (leaning the bottle against a pillow or other support at the stage when babies cannot hold the bottle on their own). This practice is an example of nonresponsive feeding.
- You should not put your baby to bed with a bottle. This practice can affect the health of the baby's teeth and is an example of nonresponsive feeding.

Introduction to Solid Food

- It is not recommended to introduce solid food before baby is 4 months old as the baby's body is not ready and this adds unnecessary calories to her/his diet.
- Infants should be fed only breast milk and/or formula for about 6 months. However, babies may be ready to be introduced to solid food between 4 and 6 months if they are able to sit with good head control and showing other signs of readiness.
- Babies are likely to be ready to be introduced to solid food if they can sit up well with little or no support, have good head control, do not automatically push solids out of their mouths, and are able to munch and swallow. They may also show interest in food, including trying to grab it and put it in their mouths.

Feeding Environment

- Feed your baby in a pleasant environment where you can interact warmly with your baby.
- Do not pressure your baby to finish the bottle or food on the plate.
- Do not give a bottle or food to your baby as a reward for behaving the way you want. Only offer food in response to your baby's hunger signals.
- Do not feed your baby in front of the TV. Meals should be a bonding and social occasion where both parent and baby benefit from the nurturing interactions that occur during a feed.
- Remember to interact warmly and to be responsive to your child's behaviors while feeding.
- Avoid distractions while feeding your baby, including using your smartphone. Your baby requires your full attention and interaction while eating.

Appendix 4. Responsive Parenting/Feeding Guidelines for Caregivers: How to Feed During 6 to 12 Months

Responsive Feeding, Meals, and Sleeping Routines

- Expect that at around 6 months your baby will be able to sit, chew, and swallow semi-solid food. These are skills your baby needs to have before starting to eat solid food.
- Sometime between 6 and 12 months your baby will be able to self-feed either with a spoon or by holding age-appropriate finger food. Encourage your baby to do so.
- From 6 to 12 months, continue following your baby's hunger and fullness signals. Remember that adequately responding to her/him in a prompt and caring way will help your baby develop healthy eating habits.
- While paying attention to your baby's hunger and fullness signs, keep in mind that your baby's appetite may change during periods of fast growth or when she/he is feeling sick.
- Hunger signs for 6- to 12-month-old babies include opening mouth when spoon gets near; reaching for the spoon or food; pointing to food; getting excited when food is presented; and expressing a desire for specific foods with words or sounds.
- Fullness signs for 6- to 12-month-old babies often involve shaking of their head, turning head away from food, and not opening mouth when spoon is close to indicate that no more food is desired.
- Establish a consistent regular schedule for your baby's meals, snacks, and sleep times. Establishing routines can help your baby set up good habits and learn when to expect to eat.
- Actively engage in conversations with your baby while feeding her/him and as you change routines throughout the day. Explain to your baby what you are doing and what is coming next, and warmly respond to his/her verbal cues. These interactions will help her/him to understand expectations and facilitate transitions.
- By 6 months, many babies sleep longer periods of time during the night, but they may still wake up. During night awakenings, first give your baby an opportunity to self-soothe back to sleep before picking her/him up. If this does not work, before feeding try using other soothing strategies that work for your baby.
- If your baby does not seem to be hungry during night awakening, check for things that may be making her/him uncomfortable and soothe her/him to help her/him go back to sleep. Remember to keep night awakenings short and quiet.
- When your baby cries try to use soothing strategies to calm her/him down such as: (1) swaddling, (2) side or stomach position while awake, (3) shushing, (4) swinging, and (5) sucking from a pacifier.

Mealtime as a Pleasant Experience

- Make sure to create a comfortable, stress-free, caring environment with few distractions when your child is eating.
- Make mealtime a pleasant experience for you and your baby. Talk warmly to your baby during feeding, and respond to her/his sounds or words. Encourage, but don't force, your baby to eat.
- Your baby will learn that you understand and will respond to her/his hunger and fullness signs. This will help you in building a positive trusting relationship with your baby.
- Make your baby's eating experience part of family meals. Preparing healthy meals for the whole family will introduce your baby to these food items.
- During family mealtimes, place your child seated facing the other family members so that she/he has an opportunity to interact with them.

Appendix 4. Responsive Parenting/Feeding Guidelines for Caregivers: How to Feed During 6 to 12 Months (cont.)

Introducing Your Baby to Different Flavors and Textures Using Responsive Feeding

- From around 6 months to 12 months, your baby will progress from assisted feeding to self-feeding. During this time offer your baby food of different flavors and textures.
- Take your time feeding your baby, and be patient while offering new healthy food. Don't give up if your baby doesn't accept the food the first time you offer it. Try again during a different eating occasion. It may take as many as 15 to 20 tries before your baby learns to like a new food.
- Eating habits are established early in life, so it is important that parents only offer healthy food to their babies. Offer your baby a variety of soft/cooked vegetables, fruits, and other healthy food with different flavors and textures so that she/he learns to like them.
- Provide healthy, tasty food that is appropriate for your child's age at regular times and in a pleasant environment, and let your baby decide how much she/he wants to eat.
- Support your baby's attempts to self-feed. Let your baby explore different food items and tastes with her/his hands. This is messy but very important for your baby to develop healthy eating habits.
- When introduced to new food, some babies will make "faces" that look like they do not like the food. This is a normal part of learning to like new food and does not mean your baby will dislike the food. Be patient and keep offering the food.
- Remember that it may take more tries for your baby to learn to like vegetables than other healthy food like fruits. Continue offering a variety of vegetables and other healthy food, and let your child decide when she/he is ready. The most important thing is that you keep offering vegetables. Be patient and keep trying.

Parental Role Modeling

- Babies imitate their caregivers. Eat a variety of healthy food in front of your baby, and always show a positive attitude towards healthy food.
- Never force your baby to eat. Let her/him choose what and how much she/he wants to try and eat.
- Correctly interpreting hunger and fullness signs will allow your baby to learn how much food she/he needs to consume, and prevent her/him from eating for reasons other than hunger.

Do Not Practice Restrictive Feeding with your Baby

- Some parents may be concerned about their babies not gaining enough or gaining too much weight. Trust your baby's hunger and fullness cues. Work with your pediatrician to resolve any weight gain concerns.

Screen Time and Physical Activity

- Avoid TV and other screen time during mealtimes. This can interfere with the opportunity for the baby, you, and other members of the family to socialize and interact with each other. These interactions are very important for your baby's development and in the establishment of healthy eating habits.
- Engage in fun, developmentally appropriate active play with your baby every day.
- Provide supervised times during the day for your infant to freely move and explore the world around her/him.

Establishing Sleep and Feeding Routines

- It may take some time for you and your baby to establish a sleep and feeding routine. Once it happens, it's important to be consistent as having regular schedules can help babies be less fussy and develop healthy sleeping and feeding patterns.
- Expect normal growth spurts that may temporarily disrupt your baby's regular schedule. Teething near 6 months of age may also be temporarily disruptive. Try keeping your baby's sleep and feeding routines as consistent as possible but be sensitive to your baby's needs during these transition times.

Appendix 5. Responsive Parenting/Feeding Guidelines for Caregivers: How to Feed During 12 to 24 Months

Responsive Mealtime Routines

- Establish a feeding routine for your child's meals and snacks. Children of this age usually consume three meals and two or three healthy snacks every day.
- Meal and snack time should be a pleasant experience for your toddler. Take the time your child needs to have a non-rushed and enjoyable mealtime or snacking experience in a stress-free environment with few distractions (e.g., without TV or other distracting screens).
- Eat with your toddler and let her/him be part of family meals. Talk to your toddler during meals and respond to her/his verbal and non-verbal requests. Continue to pay attention to hunger and fullness signs. Don't pressure your toddler to finish her/his plate.
- Provide a healthy food environment at home for your toddler. Offer healthy meals and snacks to the entire family and don't have unhealthy food around her/him, including sugar-sweetened beverages, sweets, salty snacks, and fried food/snacks.
- Screen time and media use during feeding is strongly discouraged since it can interfere with the caregiver-child interactions that your toddler needs to experience in order to learn to eat healthy.

Self-Feeding and Transitioning to Table Food

- Let your child self-feed with age appropriate utensils such as baby spoons, toddler plates, and child size cups (e.g., sippy cups). This is important for your toddler's fine motor skills development and allowing her/him to decide when to start and stop eating in response to her/his own hunger signals.
- By 1 year, your child is expected to have started transitioning into "table or family food" (non-pureed food items, such as chopped cooked spinach, cooked green peas, diced cooked carrots, diced fruits, small bits of chicken, pasta, etc.). Your child should be fully transitioned to "table or family food" by 2 years.

Learning to Like Healthy Food

- During the transition to family food, continue to expose your baby to healthy food including plenty of vegetables and fruits, and avoid offering unhealthy food such as sugar-sweetened beverages, sweets, salty food/snacks, and fried food/snacks that are high in added sugars, calories, and/or salt.
- It is normal for a child to continue to reject new food items the first time they are offered, especially those that taste bitter such as vegetables. Don't forget that it may continue to take some children up to 15 or 20 tries before accepting a new food.
- Let your child use all her/his senses to explore new food. Smelling, licking, touching, and playing with new foods is needed by children to learn to like them. It does take time, and patience with messiness.
- Picky eating, including wanting just a few food items, is a common behavior among toddlers. During this period, children go through major transitions in what and how they like to eat. Sometimes they even start refusing food they once liked (food jags). Be patient with your toddler. Continue to uphold feeding routines, provide a variety of healthy food and textures, and encourage her/him to try new foods or accept again food they previously liked. But do not pressure her/him, and continue allowing her/him to determine how much to eat.
- Children learn from observing their caregivers' behaviors. Caregivers and the family as a whole (as young children will model older children as well as caregivers) are strongly encouraged to always eat healthy food and beverages (both inside the home and when eating out). It's also important to avoid making negative comments, facial expressions, or reactions about healthy food and beverages in front of your child.
- Offer healthy food in a form appropriate for your child's age, and in a manner that is easy to chew and swallow.

Appendix 5. Responsive Parenting/Feeding Guidelines for Caregivers: How to Feed During 12 to 24 Months (cont.)

Appetite Control and Pressure to Eat

- Children may eat less at one meal but compensate at another meal by eating more. Indeed, some 1-year-olds only eat a single larger meal per day with smaller amounts at other times. Offer your child the recommended portion of healthy food from the different food groups (fruits, vegetables, grains, proteins, dairy) at each meal, and let her/him decide how much to eat.
- Don't pressure your toddler to eat, and don't show signs of frustration or anger if your child decides not to eat the food that you offer her/him. There is always a next time to try to offer the new food again.
- To minimize food waste, offer small tastes when new food is offered. You can always give more to your child if she/he is still hungry. Also, if you are having a problem with fresh fruits and vegetables going bad before being consumed, consider using frozen fruits and vegetables.
- Praising your child for eating a healthy food may encourage her/him to learn to like it. However, it is not recommended to use food as a reward (e.g., giving candy as a reward for eating vegetables or for the child to stop crying) or "bribe" (e.g., offering a toy in exchange for finishing all the food on the plate). Doing this can interfere with your child's ability to learn how to control her/his appetite.
- Offering sweets or sugar-sweetened beverages may be very tempting when your child is crying a lot or having a tantrum. Avoid doing so as it may prevent your child from learning how to eat healthy and also control her/his own emotions.

Sleep Routines

- Set consistent bedtime and nap routines. From 12 to 24 months, children sleep between 11 to 14 hours per day, including at night and naps. Children should be able to sleep throughout the night by this point. Children that have enough sleep are more likely to eat and grow healthy.

Screen Time and Physical Activity

- From 12 to 24 months, screen time and media use should be limited as it can prevent your toddler from being physically active and eating healthy. Also remember that your child's language and social development is greatly facilitated by the social interactions that you have with your child, including conversations.
- Video-chatting with relatives away from home can provide benefits to the development of your child if you or another adult caregiver supervises the child.
- If you want to use digital media with your 18- to 24-month-old toddler choose high-quality programming/apps and use them together with your child. Don't let your child use the media by herself/himself.
- Do not expose your toddler to screens during meals and for one hour before bedtime.
- Avoid using media to calm your child.
- Keep bedrooms, mealtimes, and playtimes screen-free for you and your child.
- Avoid exposing your toddlers to apps with advertising and/or unhealthy messages.
- Caregivers are encouraged to be role models to their toddlers by limiting their own media use during those times when they are interacting with them.
- Provide opportunities for your toddler to be active throughout the day every day, with structured (adult-guided) and unstructured (free play) activities taking place both indoors and outdoors where she/he can move and play freely and safely. Play, walk, dance, be active with your child and let her/him do physical activities on her/his own. Remember that toddlers like to move around independently but still need close supervision when doing activities on their own.
- Toddlers are very energetic, moving constantly; they like to explore their environments, looking around and inside objects. Daily and frequent age-appropriate, supervised, safe activities including jumping, walking, and pushing things around, throwing balls, and dancing to music help toddlers release their energy. These activities also help with their motor development.
- Equipment that limits or controls a child's movements, such as car seats, high chairs, cribs, small playpens, and strollers, should be used only for what they were designed to do (safety, transportation, eating, sleeping) and not simply for confining the child to a space.

Appendix 6. Food Safety for Infants and Toddlers

Food Safety Guidelines for Caregivers of Infants and Toddlers: Preventing Foodborne Illnesses

PASTEURIZATION AND COOKING TEMPERATURES

- Do not offer your child unpasteurized juice, milk, or dairy products.
- Do not offer your child undercooked meats, poultry, eggs (e.g., runny eggs), or seafood. Recommended cooking temperatures can be found at http://www.fsis.usda.gov/wps/portal/food-safety-education/get-answers/food-safety-fact-sheets/safe-food-handling/safe-minimum-internal-temperature-chart/ct_index.

FOUR STEPS TO KEEP FOOD SAFE FROM BACTERIA

- Always follow these four steps to keep food safe from bacteria:
 - CLEAN: Wash hands and food preparation/serving surfaces often. Fruits and vegetables should be thoroughly rinsed with warm water before offering to child.
 - SEPARATE: Keep raw meats, poultry, eggs, and fish separate from other ready-to-eat food.
 - COOK: Cook food to the proper internal temperatures (<https://www.foodsafety.gov/keep/charts/mintemp.html>).
 - CHILL: Keep cold food in the refrigerator and get other food into the refrigerator within two hours of being opened or prepared. More information available at: <https://www.foodsafety.gov/keep/index.html>.

COLD STORAGE GUIDELINES

- The following cold storage guidelines should be followed:
 - Expressed breast milk at https://wicworks.fns.usda.gov/wicworks/Topics/FG/Chapter3_Breastfeeding.pdf, <http://www.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-PumpingAndStoringBreastmilkForYourBaby.pdf>
 - Infant formula at https://wicworks.fns.usda.gov/wicworks/Topics/FG/Chapter4_InfantFormulaFeeding.pdf, <http://www.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-WhenYouFeedMeFormula.pdf>
 - Strained fruits and vegetables (prepared at home or from open jarred food): should be kept a maximum of two to three days in the refrigerator.
 - Strained meats (prepared at home or from open jarred food) and eggs: should be kept a maximum of one day in the refrigerator.
 - Meat and vegetable mixed dishes: should be kept a maximum of one to two days in the refrigerator.
 - The refrigerator temperature should be kept between 32 to 39 degrees Fahrenheit.

HANDLING OF LEFTOVERS

- At each feeding occasion, serve the portion that your child is likely to eat separate from the jar or bowl. This way you can avoid the unconsumed portion getting mixed up with your baby's saliva, and save for a future feeding. Discard any unconsumed food that was part of the portion offered to the child.
- Always throw away any leftover formula or breast milk. Leftover formula or breast milk that has not been refrigerated can grow germs and make your baby sick. Do not feed your baby breast milk or formula left at room temperature for more than one hour.

Note: Adapted from FoodSafety.gov (<https://www.foodsafety.gov/risk/children>).

Appendix 6. Food Safety for Infants and Toddlers (cont.)

Food Safety Guidelines for Caregivers of Infants and Toddlers: Preventing Mouth Burns

- When microwaving solid food, do so in a dish and for short time intervals (e.g., test after 15 seconds on high). Let food stand for 30 seconds after microwaving and before offering to child; stir before serving.
- Before serving cooked food or re-heating solid food for your child, always test the temperature of the food to be offered. They should feel lukewarm.
- There is no medical reason for warming expressed human milk or formula. If you do so, don't warm by microwaving bottles with breast milk or formula. They don't heat evenly and can burn your child's mouth.
- You can heat bottles with breast milk or formula by putting the bottle under hot running water from the tap for about two minutes. You can also heat bottles by warming water in a pan on the stovetop, then removing it from the heat and putting the bottle in the water until it feels lukewarm.

Note: Adapted from FoodSafety.gov (<https://www.foodsafety.gov/risk/children/>) and California WIC Program (https://wicworks.fns.usda.gov/wicworks/Sharing_Center/spg/CA_report2006.pdf).

Food Safety Guidelines for Caregivers of Infants and Toddlers: Preventing Food Choking

- Supervise your infant during feeding time and avoid offering food items that are a choking hazard.
- Toddlers can choke on food items that have certain shapes (small and round) and/or textures (hard, very slippery or elastic). Examples of common choking hazards are grapes, nuts, peanuts, popcorn, hard candy, carrots, hot dogs, meatballs, and chewing gum. Avoid offering these food items, or cut the round food in half or quarters before serving.
- Sit your child in a high chair or secure to a seat for meals and snacks and supervise her/him at all times while eating. Remember that eating while walking may increase risk of choking.
- If you offer fish to your toddler, which is strongly recommended, make sure it's completely deboned.

Note: Guidelines adapted from AAP Committee on Nutrition (2013).

Appendix 7. Food Allergy Considerations for Infants and Toddlers

- There is no need for pregnant or breastfeeding women to avoid consuming common allergenic food items such as eggs, milk, peanuts, tree nuts, fish, shellfish, and wheat. Doing so does not help lower the risk of food allergies in children.
- If the biological parent has allergies to any food items, talk to your child's doctor about any precautions you need to take regarding the introduction of common allergenic food items (such as products with peanuts, eggs, dairy, or wheat) to your infant.
- Ask your child's doctor if you are considering using hydrolyzed or "hypoallergenic" infant formulas as these formulas have not been found to help prevent food allergies in infants.
- You can introduce common allergenic food items to your baby when she/he is ready to eat solid food (usually between 4 and 6 months of age). These food items include dairy products such as yogurt or cow's milk protein formula, eggs, soy, wheat, peanut butter, fish, and shellfish.
- Introduce common allergenic food items to your baby after other solid food has been fed and tolerated, and with the first taste being at home. If no reaction occurs, then you can gradually increase the amount at a rate of one new food every three to five days.
- You do not need to avoid acidic food for your baby, such as berries, tomatoes, citrus fruits, and vegetables, that may cause a rash around the mouth or buttocks. The rash is the result of irritation from the acid in the food, not from an allergic reaction to the food.
- Some infants and toddlers do develop food allergies. If your infant or toddler develops signs of a food allergy (e.g., skin rashes, trouble breathing, nausea, vomiting, or loose stools in response to feeding) seek medical care and advice right away. You may also be referred to an allergist/immunologist—a doctor with experience in food allergy—for further evaluation.
- Your doctor may recommend a comprehensive evaluation and the development of a personalized plan to introduce solid food to your infant.

Note: Guidelines adapted from American Academy of Allergy, Asthma & Immunology (2015) and Australasian Society of Clinical Immunology and Allergy (2016).

About Healthy Eating Research

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