



Clinical Practice Guideline Title:  
Nutritional management of infant complementary feeding

Ownership: Medical Support Services Department / Nutrition Section	Effective Date: August 2018	Code: HS-MSSD-CPG007
	Revision Due Date: August 2021	

Applies to:

Hospitals     Primary Healthcare Centers     Specialized Centers     Others (Specify):

## 1. Clinical criteria:

### 1.1 Introduction:

The protocols are designed to meet the following objectives:

- (i) To standardize the nutrition management and care in clinical practice.
- (ii) To provide a ready reckoner of updated evidence based guidelines for the dietitians and those involved in the nutritional management of patients with.
- (iii) To enhance the quality of life of the patients with effective nutrition care.
- (iv) To improve the quality of nutritional care provided in the hospitals and primary health care facilities under the Ministry of Health and Prevention,

### 1.2 Inclusion Criteria

Healthy Infant referral to Nutrition clinic from ( 6 month to 24 month).

### 1.3 Exclusion Criteria

Un healthy Infant (0 -6) month and children over than 24 month

## 2. Protocol

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.

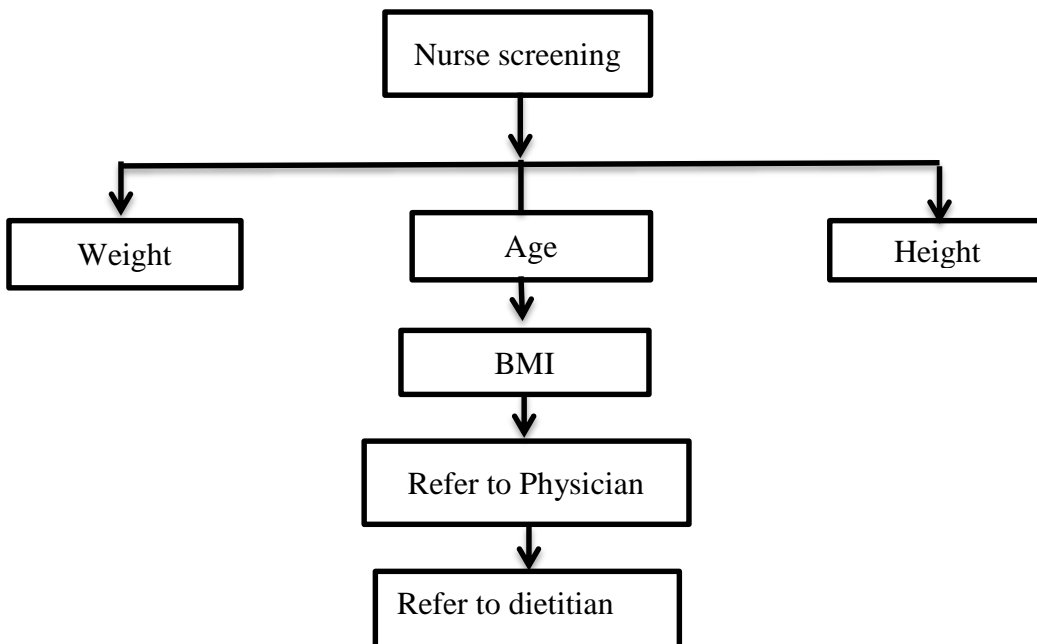
COMPLEMENTARY FOODS are foods and beverages other than human milk or infant formula (liquids, semisolids, and solids) provided to an infant or young child to provide nutrients and energy.

Appropriate infant nutrition including breastfeeding reduces the risk in children under the age of five of infections, iron deficiency anemia, excessive weight, and short stature. This risk reduction may continue beyond childhood. For example, early and persistent iron deficiency anemia is associated with an adverse effect on early psychomotor development and may cause irreversible negative developmental impacts in cognitive and motor areas.  
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### Nutrition Screening

First step for the child to be screened by the nurse for the Weight, Age and Height, then to be referred to the

Physician



## WHO classification of nutrition condition in children based on anthropometry

To interpret the plotted graph

Classification	Condition	Age: Birth to 60 months <sup>1,3</sup> Indicator and cut-off
Based on body mass index (BMI)	Possible risk of overweight	BMI-for-age (or weight-for-height) > 1SD
	Overweight	BMI-for-age (or weight-for-height) > 2SD
	Obese	BMI-for-age (or weight-for-height) > 3SD
	Thin	
	Severely thin	
Based on weight and height	Stunted	Height-for-age <-2SD to -3SD
	Severely stunted	Height-for-age <-3SD
	Underweight	Weight-for-age <-2SD to -3SD
	Severely underweight	Weight-for-age <-3SD
	Wasted	Weight-for-height <-2SD to -3SD
	Severely wasted	Weight-for-height <-3SD

Z-score	Growth indicators			
	Length/height-for-age	Weight-for-age	Weight-for-length/height	BMI-for-age
Above 3	See note 1	See note 2	Obese	Obese
Above 2			Overweight	Overweight
Above 1			Possible risk of overweight (See note 3)	Possible risk of overweight (See note 3)
0 (median)				
Below -1				
Below -2	Stunted (See note 4)	Underweight	Wasted	Wasted
Below -3	Severely stunted (See note 4)	Severely underweight (See note 5)	Severely wasted	Severely wasted

Measurements in the shaded boxes are in the normal range.

Use of the BMI-for-age growth chart is not recommended for children younger than age two years at this time.

While the WHO growth standards include a BMI chart beginning at birth, the expert panel generally agreed that many questions about BMI during infancy remain unanswered so use of the BMI chart is not recommended for clinical use before age two years.

The BMI in infancy is based on recumbent length rather than stature and, to date, there has been little research on what BMI calculated from length means in infancy and on the consequences of high or low BMI in infancy.

**Breast feeding :**

The American Academy of Pediatrics recommends, "...exclusive breastfeeding for about six months, followed by continued breastfeeding as complementary foods are introduced, with continuation of breastfeeding for one year or longer as mutually desired by mother and infant."<sup>1</sup> Exclusive breastfeeding refers to offering no other foods or fluids for infant feeding.

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**Risks of Not Breastfeeding**

Infant has a higher risk of	Mother has a higher risk of
<ul style="list-style-type: none"> <li>• Obesity in childhood</li> <li>• Diarrhea</li> <li>• Respiratory tract infection</li> <li>• Ear infections</li> <li>• Sudden Infant Death Syndrome (SIDS)</li> <li>• Type 1 and 2 diabetes</li> <li>• Gastroenteritis</li> <li>• Asthma</li> <li>• Lower IQ</li> <li>• Necrotizing enterocolitis</li> <li>• Urinary tract infections</li> <li>• Atopic dermatitis</li> </ul>	<ul style="list-style-type: none"> <li>• Post-partum weight retention<sup>29</sup></li> <li>• Depression<sup>22</sup></li> <li>• Ovarian cancer<sup>30</sup></li> <li>• Breast cancer<sup>31</sup></li> </ul>

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❖ **Introducing Complementary Feeding:**

- The first year of life is the time when habits and preferences are beginning to form, so it is important to foster healthy eating habits early. Parental and caregiver feeding beliefs and practices directly affect the quality and quantity of their infant’s nutrition intake.
- 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.**



- **Guiding principles for complementary feeding of the breastfed child :-**

1. **Duration of exclusive breastfeeding and age of introduction of complementary foods.**

Practice exclusive breastfeeding from birth to 6 months of age, and introduce complementary foods at 6 months of age (180 days) while continuing to breastfeed.

2. **Maintenance of breastfeeding.** Continue frequent, on-demand breastfeeding until 2 years of age or beyond.

3. **Responsive feeding.** Practice responsive feeding, applying the principles of psycho-social care. Specifically:

(a) feed infants directly and assist older children when they feed themselves, being sensitive to their hunger and satiety cues;

(b) feed slowly and patiently, and encourage children to eat, but do not force them;

(c) if children refuse many foods, experiment with different food combinations, tastes, textures and methods of encouragement;

(d) minimize distractions during meals if the child loses interest easily;

(e) remember that feeding times are periods of learning and love - talk to children during feeding, with eye-to-eye contact.

4. **Safe preparation and storage of complementary foods.** Practice good hygiene and proper food handling by

(a) washing caregivers' and children's hands before food preparation and eating,

(b) storing foods safely and serving foods immediately after preparation,

(c) using clean utensils to prepare and serve food,

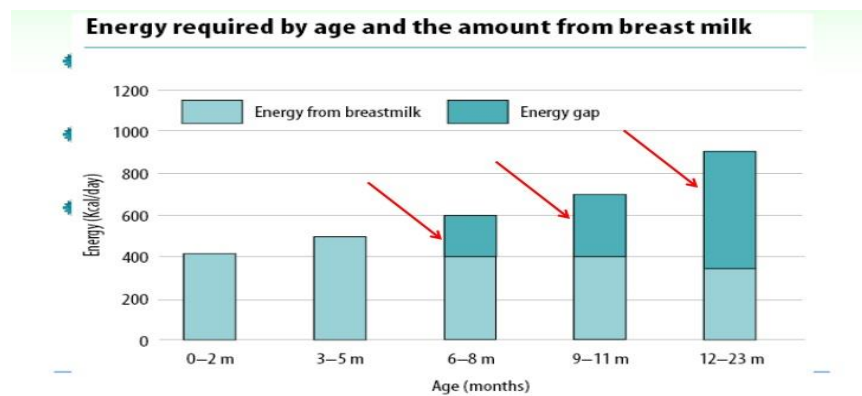
(d) using clean cups and bowls when feeding children, and

(e) avoiding the use of feeding bottles, which are difficult to keep clean.

## 5. Amount of complementary food.

- Start at 6 months of age with small amounts of food and increase the quantity as the child gets older, while maintaining frequent breastfeeding.

- The energy needs from complementary foods for infants with "average" breast-milk intake.



Practical guidance on the quality, frequency and amount of food to 6–23 months of age who are breastfed on demand: offer children:

AGE	ENERGY NEEDED PER DAY IN ADDITION TO BREAST MILK	TEXTURE	FREQUENCY	AMOUNT OF FOOD AN AVERAGE CHILD WILL USUALLY EAT AT EACH Meal
6–8 months	200 kcal per day	Start with thick porridge, well mashed foods, continue with mashed family foods	2 meals per day depending on the child's appetite and 1–2 snacks may be offered	Start with 2–3 table spoonfulls per feed, increasing to one-half bowl (of 250 ml) ( ½ of 250 ml).
9–11 months	300 kcal per day	Finely chopped or mashed foods and foods that baby can pick up	3 meals per day depending on the child's appetite and 1–2 snacks may be offered	One-half of a 250 ml bowl ( ½ of 250 ml).
12–23 months	550 kcal per day	Family foods, chopped or mashed if necessary	3 meals per day depending on the child's appetite and 1–2 snacks may be offered	Full 250 ml bowl
The amounts assume an energy density of the meal is about 0.8 – 1 Kcal/g- Source : Adapted from WHO 2009file:///C:/Users/nmabdulla/Downloads/clinical-guidelines-on-infant-and-young-child-feeding-iycf.pdf				

#### 6. Food consistency.

Gradually increase food consistency and variety as the infant gets older, adapting to the infant's requirements and abilities.

Infants can eat pureed, mashed and semi-solid foods beginning at six months.

By 8 months most infants can also eat "finger foods.

By 12 months, most children can eat the same types of foods as consumed by the rest of the family

Avoid foods that may cause choking (i.e. items that have a shape and/or consistency that may cause them to become lodged in the trachea, such as nuts, grapes, raw carrots).

#### 7. Meal frequency and energy density.

Increase the number of times that the child is fed complementary foods as he/she get older.

The appropriate number of feedings depends on the energy density of the local foods and the usual amounts consumed at each feeding.

For the average healthy breastfed infant, meals of complementary foods should be provided 2 - 3 times per day at 6 - 8 months of age and 3 - 4 times per day at 9 - 11 months and 12 - 24 months of age, with additional nutritious snacks (such as a piece of fruit or bread ..) offered 1 - 2 times per day, as desired.

If energy density or amount of food per meal is low, or the child is no longer breastfed, more frequent meals may be required.

#### 8. Nutrient content of complementary foods.

Feed a variety of foods to ensure that nutrient needs are met. Meat, poultry, fish or eggs should be eaten daily, or as often as possible.

Vegetarian diets cannot meet nutrient needs at this age unless nutrient supplements or fortified food products are used .

Vitamin A-rich fruits and vegetables should be eaten daily.

Provide diets with adequate fat content.

Avoid giving drinks with low nutrient value, such as tea, coffee and sugary drinks such as soda. Limit the amount of juice offered so as to avoid displacing more nutrient-rich foods.

#### 9. Use of vitamin-mineral supplements or fortified products for infant and mother.

Use fortified complementary foods or vitamin-mineral supplements for the infant, as needed.

#### 10. Feeding during and after illness

Increase fluid intake during illness, including more frequent breastfeeding, and encourage the child to eat soft, varied, appetizing, favourite foods. After illness, give food more often usual and encourage the child to eat more.

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- **Infants who are introduced to complementary foods too early, or before they are developmentally ready:**

- 1- may choke on the food
- 2- damage their intestinal track.
- 3- consume inadequate amounts of human breast milk or commercial infant formula.
- 4- and possibly gain excess weight.

- **Infants who are fed complementary foods too late** or after they are developmentally ready, may not consume an adequate variety and/or amount of complementary food to meet their nutritional needs and thereby compromise growth and nutrient status particularly iron status.<sup>62</sup> Furthermore, infants may develop negative feeding behaviors, such as rejecting age appropriate foods and textures, delaying independent

eating skills, and resisting a mealtime routine.

- At around six months, an infant will be ready to be introduced to complimentary foods when they repeatedly show the ability to:
  - Sit up with little or no support
  - Reach out and grab objects, bringing them to the mouth
  - Chew or gnaw on objects
  - Close lips around a spoon
  - Transfer food from the front of the mouth to the b
- Some effective parental and caregiver feeding practices for 6-12 month old infants include:
  - Having nutritious foods readily available at home and child care.
  - Eating family meals, including the baby, at established and regular meal times.
  - Feeding according to developmental readiness, such as adding appropriate food size and texture when ready.
  - Feeding when infant displays hunger cues; ending the feeding when the infant displays age appropriate satiety cues.
  - Creating a supportive and predictable atmosphere for enjoyable eating which is free from significant pressure to eat certain foods or amounts of food.

**Table : Feeding recommendations for healthy full -term infants according to developmental stage and nutrition needs:-**

Developmental Stage	Approximate Age	Feeding Recommendations to Meet Nutrient Needs
<ul style="list-style-type: none"> <li>▪ Rooting reflex will gradually diminish</li> <li>▪ Sucks and swallows liquids</li> <li>▪ May push food out with tongue</li> </ul>	Birth to six months	<p><b>What to feed?</b></p> <ul style="list-style-type: none"> <li>➤ Exclusive breastfeeding until six months of age. Prior to six months, infant digestive tract may not be mature.</li> <li>➤ If not breastfeeding or offering banked human milk, use iron-fortified commercial infant formula.</li> <li>➤ No complementary foods at this time.</li> <li>➤ No other fluids such as tea, juice, vitamin waters or other adult beverages. Water may be recommended by a physician in some medically necessary circumstances.</li> </ul> <p><b>How to feed?</b></p> <ul style="list-style-type: none"> <li>➤ Feed when the infant shows early signs of hunger. Signs of hunger can vary by child but often include the baby holding their hands near the mouth, sucking noises and puckering of the lips. Note that crying is a late sign of hunger.</li> </ul>



		<ul style="list-style-type: none"> <li>➤ Watch for infant's cues of satiety. Provide pauses during the feeding so that the baby can communicate with cues the desire to continue feeding or to stop.</li> </ul> <p>Cues of satiety often include a slowing or stoppage of a baby's sucking, relaxation of the hands and arms, or turning or pushing away from the nipple. ☑ Breastfeed on-demand at least 10 times or more in 24 hours. There is no maximum limit.</p>
<ul style="list-style-type: none"> <li>▪ Sits with support</li> <li>▪ Holds head steady</li> <li>▪ Keeps food in mouth and swallows it</li> </ul>	<p>Six months</p>	<p>What to feed?</p> <ul style="list-style-type: none"> <li>➤ Continue to breastfeed or provide banked human milk or iron-fortified commercial infant formula on demand. Breast milk or commercial infant formula is still the primary source of nutrients.</li> <li>➤ Introduce complementary foods. Watch for signs of allergic reactions that could include hives, rash, coughing or wheezing.</li> <li>➤ Plain iron-fortified infant cereal can be mixed with breastmilk or commercial infant formula.</li> <li>➤ Sugar, honey, soy sauce or salt does not need to be added.</li> <li>➤ While fish is ok, DO NOT feed large predatory fish, such as shark and swordfish because these large fish can accumulate heavy metals in their flesh.</li> </ul> <p>How to feed?</p> <ul style="list-style-type: none"> <li>➤ A new complementary food can be introduced 3 days after the last new food. Start with single-ingredient foods. The order of foods is not critical, although high-iron foods are recommended first such as pureed meat and iron-fortified cereals.</li> <li>➤ Feed with a spoon. The infant should be sitting upright and supervised.</li> <li>➤ Feed 2-3 small meals per day, with snacks optional.</li> <li>➤ Start using a cup for expressed breast milk or formula.</li> <li>➤ A strainer, blender or baby food grinder can be used to make baby food.</li> <li>➤ Meat, chicken, eggs or cooked beans can be strained or pureed; tofu can be mashed.</li> <li>➤ Cooked vegetables and soft fruits may be offered strained or pureed.</li> <li>➤ DO NOT put cereal or other foods in the bottle.</li> </ul>



		<ul style="list-style-type: none"> <li>➤ DO NOT force feed or extend feeding time beyond a half hour.</li> <li>➤ DO NOT feed too much complementary foods, for instance no more than one half cup of complementary food at a sitting.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Grasps and holds onto things.</li> <li>▪ Sits with ease and without support.</li> <li>▪ Begins to chew Uses a cup with help May self-feed finger foods.</li> <li>▪ Begins to chew Uses a cup with help May self-feed finger foods.</li> <li>▪ Begins to chew.</li> <li>▪ Uses a cup with help.</li> <li>▪ May self-feed finger foods.</li> </ul>	7 to 8 months	<p><b>What to feed?</b></p> <ul style="list-style-type: none"> <li>➤ Continue to breastfeed or provide banked human milk or iron-fortified commercial infant formula by cup.</li> <li>➤ Offer a variety of foods pureed with lumps; gradually progress to mashed foods.</li> <li>➤ Sugar, honey, soy sauce or salt does not need to be added.</li> </ul> <p><b>How to feed?</b></p> <ul style="list-style-type: none"> <li>➤ Provide 3-4 meals per day with 1-2 snacks. □ Begin meals with the family.</li> <li>➤ Encourage and explore self-feeding by providing soft, easy to swallow finger foods cut in small pieces. Self-feeding is also an important opportunity for mastery of fine motor skills.</li> <li>➤ Avoid foods in a form that may cause choking (i.e., items that have a shape and/or consistency that may cause them to become lodged in the trachea, such as whole nuts, whole grapes, and pieces of hot dog, popcorn, and raw vegetables, whole or in pieces).</li> <li>➤ DO NOT force feed or extend feeding time beyond a half hour. Note: Satiety cues at this age include changes in posture, closing mouth tightly, distractibility, playing with or throwing utensils, and more active hands.</li> <li>➤ DO NOT leave child alone during feeding.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Takes a bite of food</li> <li>▪ Self feeds finger foods</li> <li>▪ Uses a cup without help or with minimal help</li> </ul>	8 to 10 months	<p><b>What to feed?</b></p> <ul style="list-style-type: none"> <li>➤ Continue to breastfeed or provide banked human milk or iron-fortified commercial infant formula by cup.</li> <li>➤ Offer chopped soft cooked foods.</li> <li>➤ Continue to offer a variety of new foods.</li> <li>➤ Finger foods such as soft cheese, unsalted crackers or small pieces of tortilla, tofu or toasted breads.</li> <li>➤ Sugar, honey, soy sauce or salt does not need to be added.</li> </ul>



		<p><b>How to feed?</b></p> <ul style="list-style-type: none"> <li>➤ Provide soft, baby bite-size pieces of complementary foods for self-feeding, such as soft cheese, unsalted crackers or small pieces of tortilla, tofu or toasted breads.</li> <li>➤ Continue to be cautious of foods that may cause choking.</li> </ul>
Starts to use a spoon to self-feed	10 to 12 months	<p><b>What to feed?</b></p> <ul style="list-style-type: none"> <li>➤ Continue to breastfeed or provide banked human milk or iron-fortified commercial infant formula by cup.</li> <li>➤ Provide chopped and ground meats, and small, bite-size pieces of cooked or soft foods that the family is eating.</li> <li>➤ Restrict sweets and fatty foods as infants require nutrient-dense foods to meet their nutrition needs.</li> <li>➤ Sugar, honey, soy sauce or salt does not need to be added.</li> <li>➤ How to feed?</li> <li>➤ Begin to structure feeding times with family members to create mealtime socialization.</li> <li>➤</li> </ul>
<ul style="list-style-type: none"> <li>▪ Uses a spoon without help Begins to use a fork</li> </ul>	1 year old	<p><b>What to feed?</b></p> <ul style="list-style-type: none"> <li>➤ Continue to breastfeed.</li> <li>➤ Continue with breastmilk or provide whole milk starting no earlier than 1 year of age. If the child is at risk for overweight or has a family history of obesity, dyslipidemia, or cardiovascular disease, in which case reduced fat milk is recommended rather than whole milk.</li> <li>➤ Continue to expand complementary foods offered.</li> <li>➤ Sugar, honey, soy sauce or salt does not need to be added.</li> </ul> <p><b>How to feed?</b></p> <ul style="list-style-type: none"> <li>➤ Provide 3-4 meals per day, with snacks.</li> <li>➤ If breastfeeding, offer all other liquids in a cup.</li> <li>➤ If bottle feeding, complete transition from bottle to cup.</li> <li>➤ Continue to include in family meals.</li> </ul>

Fluids During Infant Feeding :-

Fluids	Cautions During Infant Feeding
Water	<ul style="list-style-type: none"> <li>- Healthy infants do not require plain water added to their diet in the first six months of life. Exclusively breastfed infants can meet their water requirements from breastmilk alone even in hot, dry or humid climates. Infants fed infant formula do not need additional water if the formula is prepared correctly.<sup>2</sup></li> <li>- Water and electrolyte needs may be increased during some medical circumstances such as vomiting and/or diarrhea. In this case, a health care professional should medically manage the infant. Breastmilk helps prevent dehydration through periods of vomiting and diarrhea and should not be considered “milk” when an infant is to stop taking “milk products” (i.e. commercial infant formula, cow’s milk, cheese, etc.)</li> <li>- Hyponatremia and malnutrition may occur if infants are fed excessive amounts of water or if commercial infant formula is prepared improperly by over diluting.</li> </ul>
Herbal Supplements & Teas	<ul style="list-style-type: none"> <li>- Teas and herbal supplements are not recommended for infants because there is limited research on the effectiveness and safety of herbs and supplements, and in some cases they have been shown to be harmful to infants.</li> <li>- Herbal and other tea use may point to parental concerns about underlying conditions that need to be addressed by the health care practitioner.</li> <li>- Teas are often administered to improve colic, however teas have not been shown to help with colic.</li> </ul>
Fruit Juice	<ul style="list-style-type: none"> <li>- It is recommended to offer mashed fresh fruits instead of fruit juices since they have a higher nutritional value.</li> <li>- Infants do not need to consume fruit juice to meet their nutritional needs. Whole fruits provide nutritional benefits that juices do not.</li> <li>- Excessive fruit juice consumption may lead to overweight, failure to thrive, and early childhood caries.</li> <li>- If fruit juices are given to infants after six months, limit the volume to 4 ounces/day of juice with a cup and not a bottle.</li> </ul>

	<ul style="list-style-type: none"> <li>- Use of a bottle or Sippy cup with juice or sweetened beverages is not recommended by the American Dental Association or the American Academy of Pediatrics because of the risk of early childhood caries.</li> </ul>
Milk	<ol style="list-style-type: none"> <li>1. 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.</li> <li>2. Offer cow's milk with no added sugars (e.g., no flavored milks). Added sugars may interfere with the development of your toddler's p including dental cavities, and lead references for healthy food (such as vegetables and fruit) and may cause oral health problems, to extra calorie intake.</li> <li>3. 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.</li> <li>4. 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.</li> <li>5. At each meal, or as part of a snack, offer your toddler ½ cup (4 ounces) of milk.</li> <li>6. 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.</li> <li>7. 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.</li> <li>8. 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.</li> </ol>
<p>Cow or goat milk, chocolate milk, cocoa, coffee, sugar sweetened drinks-including fruit drinks, sugar sweetened drink mixes, or soft drinks</p>	<ol style="list-style-type: none"> <li>9. Cow's milk should NOT be offered before the child turns 1 year old because it may cause intestinal bleeding.</li> <li>10. Others are NOT appropriate beverages to offer to infants.</li> </ol>

Plant-based beverages (e.g., soy, rice, almond milks)	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.
Honey	Honey should NOT be given to children under 12 months old since it may cause a serious condition known as botulism.

### **Important Considerations for Infants and Toddlers:**

- **FOOD SENSITIVITY**
- Major types of adverse reactions to food include ( Food hypersensitivity (allergy) and Food intolerance).
- Hypersensitivity to a food is an immunologic reaction to an ingested food or food additive.
- Food intolerance is an abnormal physiologic response to an ingested food or food additive and generally is less serious.

Hypersensitivity to a food	Food intolerance
- Hypersensitivity to a food is an immunologic reaction to an ingested food or food additive.	- Food intolerance is an abnormal physiologic response to an ingested food or food additive and generally is less serious.
- Food hypersensitivity may cause diarrhea, vomiting, coughing and wheezing, respiratory symptoms, ear infections, abdominal pain, gas, hives, skin rashes, and less commonly systemic reactions (anaphylactic shock, failure to thrive).	- Food intolerance more frequently involves symptoms such as intestinal gas, abdominal pain or diarrhea.
- Food allergies are commonly associated with consumption of cow's milk, whole eggs (or egg white), wheat, tree nuts, finfish and shellfish, and legumes such as soy beans and peanuts. <sup>73</sup> Reactions to environmental allergens may confuse the diagnosis of food hypersensitivities or intolerances.	
- The American Academy of Allergy, Asthma & Immunology (AAAAI) suggests highly allergenic complementary foods may be introduced after a few non-allergenic complementary foods have been fed and tolerated.	
- The AAAAI suggests parents be advised that some allergic reactions are immediate and happen at ingestion and some are not.	
- Consultation with an immunologist is recommended if the infant has persistent moderate-to-severe atopic dermatitis despite quality care, a sibling who has a peanut allergy or if the infant has had a previous allergic reaction.	
- Caregivers should stop feeding any food that causes an adverse reaction and should consult their health care professionals immediately.	
- Honey should be avoided in the first year of life due to the potential for botulism because of botulism spores that germinate in the infant bowel. Anise tea should be avoided in the first year of life due to possible increased risk of seizures	

Ref : California infant feeding guide

- **Sleep Considerations for Infants and Toddlers**

- Healthy sleep habits increase sleep duration and prevent sleep problems. Lack of sleep among children under 2 has been identified as a risk factor for the development of childhood obesity.
- Healthy sleep requires adequate duration, appropriate timing, good quality, regularity, and the absence of sleep disturbances or disorders.

Recommended amount of sleep for children under 2 years of age	
Infants ages 4 to 12 months	should sleep 12 to 16 hours per 24 hours (including naps) on a regular basis to promote optimal health.
Children ages 1 to 2 years	should sleep 11 to 14 hours per 24 hours (including naps) on a regular basis to promote optimal health

Note: Adapted from the American Academy of Sleep Medicine (Paruthi et al. 2016).

- **Screen Time and Physical Activity**

- **for the infant :**

1. 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.
2. Engage in fun, developmentally appropriate active play with your baby every day.
3. Provide supervised times during the day for your infant to freely move and explore the world around her/him.

- **for the toddlers 12- 24 months:**

1. 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.
2. Do not expose your toddler to screens during meals and for one hour before bedtime.



3. Avoid using media to calm your child.
4. Keep bedrooms, mealtimes, and playtimes screen-free for you and your child.
5. Avoid exposing your toddlers to apps with advertising and/or unhealthy messages.
6. 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.
7. 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.
8. 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.

- **Food Safety Considerations for Infants and**

**Preventing Foodborne Illnesses**

Pasteurization and cooking temperature :

- 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.

Four steps to keep food safe from bacteria:

- Always follow these four steps to keep food safe from bacteria:
  1. CLEAN: Wash hands and food preparation/serving surfaces often. Fruits and vegetables should be thoroughly rinsed with warm water before offering to child.
  2. SEPARATE: Keep raw meats, poultry, eggs, and fish separate from other ready-to-eat food.
  3. COOK: Cook food to the proper internal temperatures.
  4. CHILL: Keep cold food in the refrigerator and get other food into the refrigerator within two hours of being opened or prepared.

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

1. Supervise your infant during feeding time and avoid offering food items that are a choking hazard.

2. Toddlers can choke on food items that have certain shapes (small and round) and/or textures (hard, very slippery or elastic).
3. 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.
4. 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.
5. 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).21

- **Spoon, Cup, and Self-Feeding:**

1. Between 6 and 12 months, it is recommended to transition infants from using a bottle to a cup.
2. By 12 months, your baby should be able to spoon feed herself/himself and hold a cup with both hands.
3. 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.
4. 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.
5. 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.

**Important Instruction when you introducing complementary food :**

1. -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.
2. -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.
3. 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.
4. -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.
5. -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.
6. -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.



7. -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).
8. -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.
9. -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.
10. 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.
11. Between 6 and 11 months, babies eat about every two to three hours or about five or six occasions during the day.
12. 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.
13. 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 cerealAND
  - Up to 2 tablespoons of vegetables or fruit, or a combination of both
14. 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.
15. 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.
16. 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.



Infant Feeding Meal Patterns with Typical Portion Sizes by Age Group

Meal	0 to 5 months	6 to 11 months	Sample Menu: 6 to 11 months
Breakfast Lunch or Dinner	4 to 6 fluid ounces of breast milk or formula at each feeding	<ul style="list-style-type: none"> <li>- 6 to 8 fluid ounces of breast milk or iron fortified formula</li> <li>- AND</li> <li>- 0 to 4 tablespoons infant cereal, meat, fish, poultry, whole eggs, cooked dry beans or peas; or</li> <li>- 0 to 2 ounces of cheese; or 0 to 4 ounces of cottage cheese; or 0 to 8 ounces of yogurt; or a combination</li> <li>- AND</li> <li>- 0 to 2 tablespoons vegetable, fruit, or both</li> </ul>	<p><b>Breakfast</b></p> <ul style="list-style-type: none"> <li>➤ 6 to 8 fluid ounces of breast milk or iron-fortified formula</li> <li>➤ 0 to 4 tablespoons of oat or rice baby cereal mixed with breast milk or formula</li> <li>➤ 0 to 1 tablespoon of pureed/mashed/ sliced banana</li> <li>➤ 0 to 1 tablespoon of pureed/mashed/ sliced fruit (peaches)</li> </ul> <p><b>Lunch</b></p> <ul style="list-style-type: none"> <li>➤ 6 to 8 fluid ounces of breast milk or iron-fortified formula</li> <li>➤ 0 to 2 tablespoons of barley cereal mixed with breast milk or formula</li> <li>➤ 0 to 2 tablespoons of pureed/mashed cooked peas</li> <li>➤ 0 to 1 tablespoons of pureed/mashed</li> <li>➤ 0 to 1 tablespoons of fruit cooked carrots(unsweetened apple sauce)</li> </ul> <p><b>Dinner</b></p> <ul style="list-style-type: none"> <li>➤ 6 to 8 fluid ounces of breast milk or iron-fortified formula</li> <li>➤ 0 to 2 tablespoons of pureed/mashed cooked green beans</li> <li>➤ 0 to 2 tablespoons of pureed/mashed/ finely cut deboned fish or chicken</li> <li>➤ 0 to 2 tablespoons cooked lentils</li> </ul>



Snack	4 to 6 fluid ounces of breast milk or formula at each feeding	<ul style="list-style-type: none"> <li>- 2 to 4 fluid ounces of breast milk or formula</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>- 0 to 1/2 slice of bread; or 0 to 2 crackers; or 0 to 4 tablespoons of infant cereal or ready-to-eat breakfast cereal</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>- 0 to 2 tablespoons vegetable, fruit, or a combination of both</li> </ul>	<ul style="list-style-type: none"> <li>➤ 2 to 4 fluid ounces of breast milk or formula</li> <li>➤ 0 to 2 whole wheat crackers</li> <li>➤ 0 to 2 tablespoons of pureed/ mashed cooked sweet potatoes</li> </ul>
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Note: Adapted from CACFP New Infant Meal Patterns available at:

[http://www.fns.usda.gov/sites/default/files/cacfp/CACFP\\_infantmealpattern.pdf](http://www.fns.usda.gov/sites/default/files/cacfp/CACFP_infantmealpattern.pdf). Portion ranges

include “0” to acknowledge the fact that not all children are introduced to solid foods by 6 months of age. Ranges also acknowledge that the amount of food consumed per feeding episode is expected to increase gradually during the second semester of life.

Infant formula and infant cereal must be iron-fortified. Fruit and vegetable juices must not be served.

Toddler Daily Meal Patterns with Portion Sizes: 1 to 2 years olds

	Breakfast*		Lunch		Dinner		Snack		
	portion	menu	portion	menu	portion	menu	Snack** portion	Snack 1	Snack 2
Milk***	1/2 cup	1/2 cup of whole milk	1/2 cup	1/2 cup of whole milk	1/2 cup	1/2 cup of whole milk	1/2 cup		
Meat and meat alternates			1 ounce or 1/4 cup	1/4 cup of hummus	1 ounce	1 ounce of diced grill chicken	1/2 ounce	1/4 cup of plain yogurt (iv)	
Vegetables (v)	1/8 cup		1/8 cup	1/8 cup of cooked spinach	1/8 cup	1/4 cup of cooked broccoli	1/2 cup		1/2 cup of sliced cucumber
Fruit	1/8 cup	1/4 cup of sliced strawberries	1/8 cup	1/8 cup of blueberries	1/8 cup		1/2 cup	1/2 cup of sliced apples	1/2 cup of cut up cherry



		es							tomatoes
Grains	1/2 cup	1/2 cup of breakfast cereal (vi)	1/2 ounce equivalent	1/2 slice of pita bread	1/2 ounce equivalent	1/2 cup of cooked pasta	1/2 ounce equivalent		

- Note: Adapted from CACFP New Meal Patterns available at: [http://www.fns.usda.gov/sites/default/files/cacfp/CACFP\\_childadultmealstandards.pdf](http://www.fns.usda.gov/sites/default/files/cacfp/CACFP_childadultmealstandards.pdf) .
- \*Meat and meat alternates may be used to substitute the entire grains component.
- \*\*Select two of the five components for snack. Some children may need one or two snacks.
- \*\*\*Only unflavoured whole milk must be served to 1-year-olds.
- iv Yogurt must contain no more than 23 grams of sugar per 6 ounces.
- v Vegetables and fruit recommendation were combined on the breakfast and dinner menus.
- vi Breakfast cereals must contain no more than 6 grams of sugar per dry ounce.



### 15. Revision History

New Policy	Edition Date:
Remarks (if any)	

Revised Policy	Date of Revision:
Date of 1 <sup>st</sup> Edition:	Revision Number:

Policy and Procedure Status	Change	Reference Section

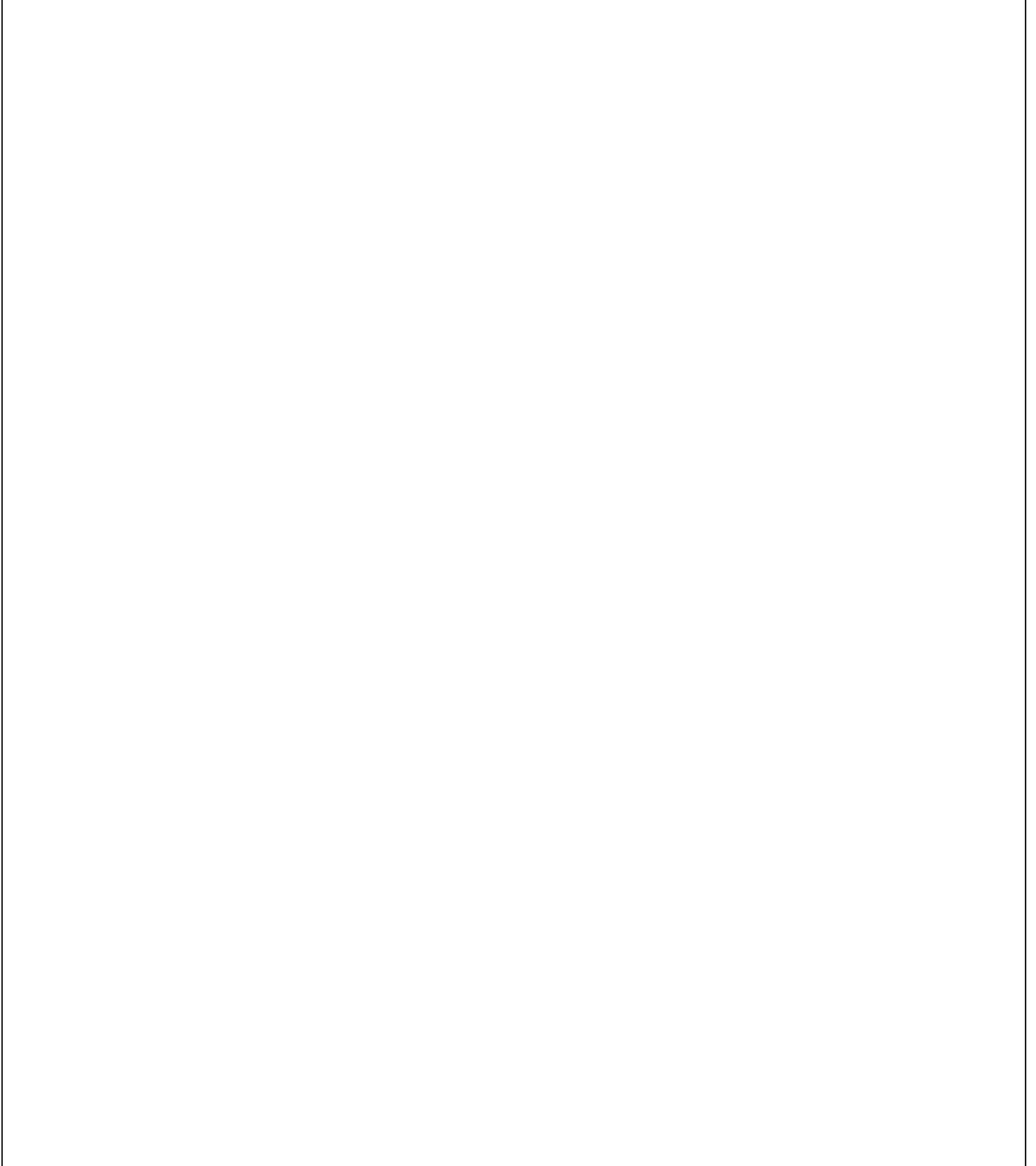
**16. Performance Indicator:** Numbers of relatives of infants been counselled in complementary feeding after doctor referral.

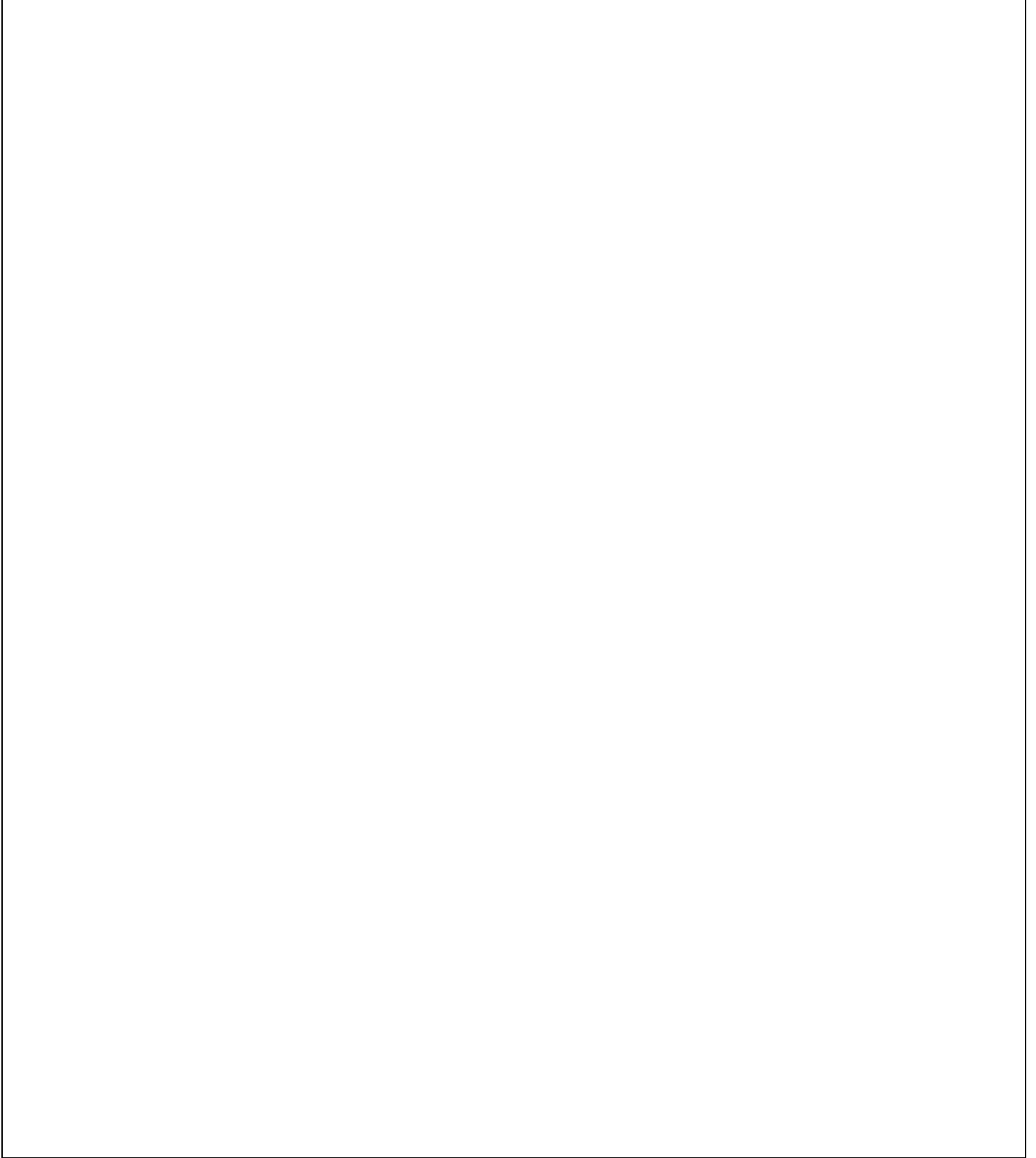
**17. Search words:**



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- 2- Unicef 2016, FROM THE FIRST HOUR OF LIFE Making the case for improved infant and young child feeding everywhere.
- 3- Infant Feeding for Children Birth to Age 1 December 2016- California Infant Feeding Guide, Suzanne Haydu, M.P.H., R.D., Nutrition and Physical Activity Coordinator, Maternal, Child and Adolescent Health Division, Center for Family Health, California Department of Public Health. Ryan Gamba, M.P.H., Doctoral Candidate in Nutritional Epidemiology, University of California, Berkeley.
- 4- World Health Organization 2009, Infant and young child feeding- Model Chapter for textbooks- for medical students and allied health professionals.
- 5- USDA 2009, Infant Nutrition and feeding – A guide for use in WIC and CSF programs.







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