Inappropriate Infant Feeding Practices

Definition/ cut-off value

Routine use of any of the following**:**

a. Infant not fed breastmilk or iron-fortified formula as primary source of nutrients during first 6 months of life and as primary fluid consumed during the second 6 months of life (includes infants prescribed low iron formula without iron supplementation).
b. Feeding goat's milk, sheep's milk, imitation milks, or substitute milks in place of breast milk or FDA-approved infant formula during the first year of life.
c. Late introduction of solids: failure to introduce solids by 7 months of age.
d. Not using a spoon to introduce and feed early solids.
e. Infant not beginning to finger feed by 7-9 months.
f. Feeding solids in a bottle (including enlarging the nipple to accommodate thickened liquid).
g. Using a syringe-action nipple feeder.
h. Feeding foods of inappropriate consistency, size, or shape that put the infant at risk of choking.
i. Inappropriate, infrequent or highly restrictive feeding schedules or forcing an infant to eat a certain type and/or amount of food.
j. Feeding any amount of honey to infant under 1 year of age (added to liquids or solid foods, used in cooking, as part of processed foods, on a pacifier, etc.).
k. Feeding >10 oz./day of full strength juice.

Participant category and priority level

Category	Priority
Infants	IV

Justification

a) During the first year of life, breastfeeding is the preferred method of infant feeding. For infants fed infant formula, iron-fortified formula is generally recommended (1, 2, 3) as a substitute for breastfeeding. "The American Academy of Pediatrics recommends breast milk for the first 12 months of life because of its acknowledged benefits to infant nutrition, gastrointestinal function, host defense, and psychological well-being." (4)
b) Goat's milk, sheep's milk, imitation milks and substitute milks do not contain nutrients in amounts appropriate for infants (5, 6, 7, 8).
c) From 4-12 months of age, the transition should take place whereby nutrient and caloric intake from a liquid diet of breastmilk or infant formula is gradually replaced with solid foods. There is a critical or sensitive period of development in relation to eating, when a specific stimulus, solid food, must be introduced for the infant to learn the

Justification (cont)

action of accepting and eating table food, which is more difficult to masticate. If solid foods are withheld until a later age, the infant will have considerably more difficulty in accepting them (9, 10).

d) Adding dilute cereal or other solid foods to bottles rather than spoon feeding deprives infants of the opportunity to learn to feed themselves (11, 12, 13).

e) Between 24 and 28 weeks of age, chewing movements (up-and-down movement of the jaws) occurs. This, combined with the ability to grasp, the hand-to-mouth route of grasped objects, and sitting posture, indicates a readiness of the infant to finger feed. Thus, the shape of the food presented for the child to finger feed is important. Melba toast, crackers, and teething biscuits are frequently introduced at this time (14).

f/g) This type of feeding results in force-feeding, inappropriately increases the energy and nutrient composition of the formula, deprives the infant of experiences important in the development of feeding behavior, and could cause an infant to choke (15,16).

h) Cases of choking and aspiration have occurred when feeding infants foods of inappropriate size, shape, and consistency. In particular, hard, round, smooth, slick, sticky pieces or pieces that do not break apart easily that can block breathing should be avoided (such as carrots, grapes, hot dogs, nuts, seeds, hard round candies, popcorn, raw vegetables, tough meat and others.) The texture of solid foods fed to infants should be decided based on age and developmental readiness. Early solids should have a smooth texture, which can gradually be thickened to a firmer texture over time. Table foods should be tender and cut in pieces that can be easily chewed and swallowed (17, 18).

i) Infants held to rigid feeding schedules are often underfed or overfed. Caregivers insensitive to signs of hunger and satiety, or who overmanage feeding may inappropriately restrict or encourage excessive intake. Infrequent breastfeeding can result in lactation insufficiency and infant failure-to-thrive (19, 20, 21).

j) Honey has been implicated as the primary food source of *Clostridium botulinum* during infancy. These spores are extremely resistant to heat and are not destroyed by present methods of processing honey. Botulism in infancy is caused by ingestion of the spores, which germinate into the toxin in the lumen of the bowel (22, 23, 24).

k) An excessive amount of juice consumption (>10 oz./day) increases the risk of loose stools and diarrhea and may replace other nutrient dense foods. Juices, while providing vitamin C and carbohydrates should not replace infant formula or breast milk (4).

Clarifications/ Guidelines

With the exception of honey, before assigning this risk code, be sure to determine if the practice is routine and document the inappropriate feeding practice on the diet/health history form.

Clarifications/ Guidelines (cont)

If any of the feeding practices are a result of a development delay and/or were directed by a physician, assign the risk code but to not counsel on or contradict the instructions from the health care provider.

References

1. Institute of Medicine: WIC Nutrition Risk Criteria: A Scientific Assessment; 1996; p. 261.
2. CON, AAP: Pediatric Nutrition Handbook; 1993; pp. 1, 15.
3. AAP Statement on Iron-fortified formula; 1989.
4. CON, AAP: Pediatric Nutrition Handbook; 1998; p 3, 47.
5. Institute of Medicine: WIC Nutrition Risk Criteria: A Scientific Assessment; 1996; p. 262.
6. CON, AAP: Pediatric Nutrition Handbook; 1993; p. 20.
7. Fomon, S.: Nutrition of Normal Infants; 1993; pp. 446-447.
8. Pipes, and Trahms: Nutrition in Infancy and Childhood; 1993; p. 100.
9. Pipes and Trahms: Nutrition in Infancy and Childhood; 1993; p. 106.
10. Satter, E.: Feeding with Love and Good Sense; 1986; p. 237.
11. Institute of Medicine: WIC Nutrition Risk Criteria: A Scientific Assessment; 1996; p. 263.
12. Satter: Feeding with Love and Good Sense; 1986; pp. 235, 422.
13. Pipes and Trahms: Nutrition in Infancy and Childhood; 1993; p. 102.
14. Pipes and Trahms: Nutrition in Infancy and Childhood; 1993; p. 112.
15. Satter: Feeding with Love and Good Sense; 1986, pp. 235, 422.
16. Pipes and Trahms: Nutrition in Infancy and Childhood; 1993; p. 102.
17. Satter: Feeding with Love and Good Sense; 1986; pp. 251-252.
18. Pipes and Trahms: Nutrition in Infancy and Childhood; 1993; p. 104.
19. Institute of Medicine: WIC Nutrition Risk Criteria: A Scientific Assessment; 1996; p. 264.

References (cont)

20. Satter: Feeding with Love and Good Sense; 1986; pp. 411-419.

19. Pipes and Trahms: Nutrition in Infancy and Childhood; 1993; pp. 115-116, 118.

20. Satter: Feeding with Love and Good Sense; 1986; pp. 251-252.

21. Pipes and Trahms: Nutrition in Infancy and Childhood; 1993; pp. 104-106.

22. FNS-288: Infant Nutrition and Feeding; 1993; p. 143.