

Breastfeeding After 6 Months: A Forgotten but Revitalized Global Issue

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ABSTRACT

Purpose: The safest manner of fluid intake in the first year(s) of life is consumption of human milk which is clean, includes anti-infective factors as well as appropriate hormones and living cells. Programming in support of breastfeeding has concentrated on the important issues of early initiation and exclusive breastfeeding for the first six months of life. This presentation addresses the rationale for increasing support for breastfeeding after 6 months of age. This is of particular concern as WHO and others are increasing emphasis on the frequency of complementary feeding in this age group without attention to frequency of breastfeeding.

Data/ information used: Recent systematic reviews and new WHO recommendations on complementary feeding are examined in terms of their potential impact on breastfeeding and overall nutritional intake, and outcomes of a WABA meeting in Penang on this issue will be presented.

Methods used: The literature on the impact of breastfeeding on maternal and child health after six months of child age is reviewed and outcomes of expert review are presented.

Major results: Active support for frequency of complementary foods without concomitant support for frequency of breastfeeding or quantity of human milk consumed can result in increased malnutrition in this age group.

According to the conceptual framework on the causes of malnutrition adopted by UNICEF as a foundation for its country programming (UNICEF, 1990), nutrient intake and the presence or absence of disease are the direct determinants of child survival, growth, and development.

Recommendations and policy implications: Protection of child health and well-being demands support and maintenance of breastfeeding after 6 months, improving health and nutrition outcomes.

RESULTS

Energy (kcal) from human milk and the amount needed from complementary foods (CF) by children in developing and industrialized countries, by age group in months

Age group (months) / Country Setting	Energy consumed from breastfeeding			Energy needed from complementary foods			Estimated energy consumed from recommended CF ^{ab}	Energy deficit, consuming lowest level for human milk	Energy deficit, consuming highest level for human milk
	Low	Avg	High	Low	Avg	High			
6-8 / Developing	217	413	609	465	269	73	118	347	
6-8 / Industrialized	274	486	698	408	196	0	118	290	
9-11 / Developing	157	379	601	673	451	229	176	497	53
9-11 / Industrialized	41	375	709	789	455	121	176	613	
12-23 / Developing	90	346	602	1002	746	490	235	767	255
12-23 / Industrialized	0	313	669	1092	779	423	235	857	188

^a Energy estimate calculated by assuming 2, 3, and 4 meals per day¹ (at 6-8, 9-11, and 12-23 months, respectively) with food from at least four food categories². Each meal consists of a 2 oz (56.7g) mixture of rice cereal, bananas, corn, sweet potato, and whole milk plus a 1 oz. snack.
^b Food analyses provided by USDA Natural Nutrient Database

DISCUSSION

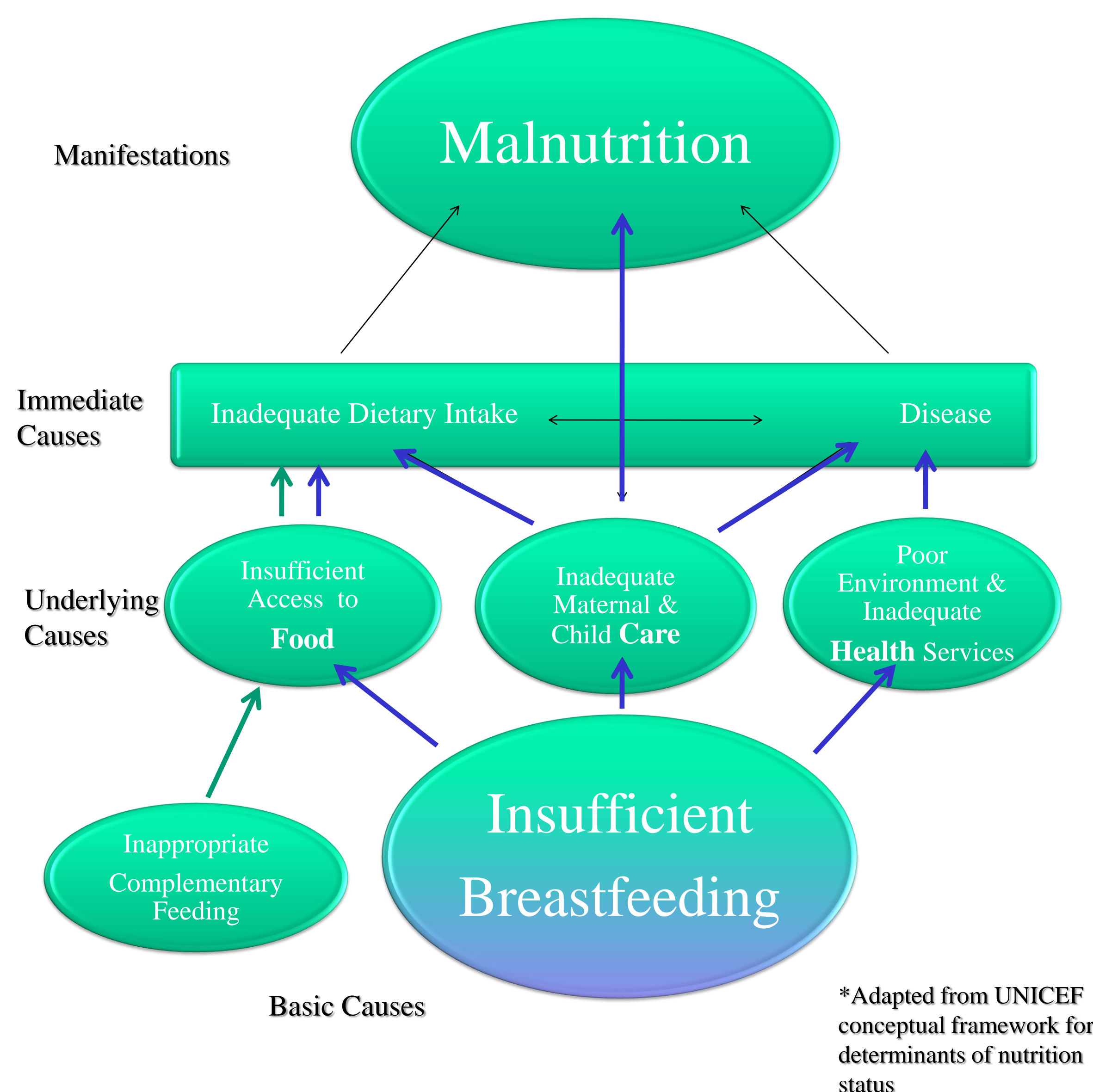
Breastfeeding alone meets the nutritional needs of infants under six months of age, but promotion of continued breastfeeding has been overshadowed with advice and programming on complementary foods (CF). However, there is strong evidence that available CFs do not provide adequate nutrients for optimal growth and health, particularly in developing countries. Continued breastfeeding has been described as the “neglected aspect of infant and young child feeding recommendations;” it is estimated that about 20% of deaths of children aged 12<24 months in developing countries are due to lack of continued breastfeeding.

As may be seen in the table, the new WHO CF recommendations are not sufficient if the meal size is 2 oz. per meal. However, current recommendations do not provide guidance for quantity and frequency of breastfeeds needed to maintain adequate nutrition in children greater than six months of age. If a decrease in breast milk consumption occurs, it will become increasingly more difficult to obtain adequate levels of both micro- and macro-nutrients and energy.

While rates of EBF among children 0-6 months have been increasing, the rates of continued breastfeeding at one year have been stagnant or falling. Both WABA and WHO/UNICEF/USAID held meetings to develop recommendations on CF. WABA emphasizes the need for support for continued breastfeeding during the addition of complementary foods. However, WHO/UNICEF/USAID does not mention the importance of quantity of breastfeeding in the recommendations for infant feeding after six months of age. This set of recommendations, if put into practice, sends the message that promotion of the quantity and quality of the CFs is more important to growth and health than the maintenance of adequate breastfeeding.

The composition of the expert group from each meeting were marked different, and this may provide insight into the recommendations that were produced at each meeting. The 56 WABA participants hailed from 21 different countries from parts of Asia, Europe, Africa, and North America. The professions of these participants range from physicians to dietitians, journalists to public health researchers. The WHO/UNICEF/USAID attendees were almost 50% nutritionists, predominantly representing US agencies. Since intake from breastfeeding is difficult to measure, those present would not accept even a proxy indicator for optimal breastfeeding. The WHO/UNICEF/USAID priority was measuring “nutrient intake” while that of WABA was protection and promotion of “breastfeeding for nutrition, health, and care,” leading to the disparate conclusions.

BASIC CAUSES OF MALNUTRITION



Benefits of Breastfeeding for Children after 6 Months of Age

Author & Title	Methods	Key Findings
Adair L, et al. Growth dynamics during the first two years of life: a prospective study in the Philippines. 1993.	Prospective study of children ages 6 to 24 months using data from the Cebu Longitudinal Health and Nutrition Survey	Breastfeeding had a positive association with weight gain in children aged 6 – 24 months
AHQR. Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries. 2007.	Literature review covering 400 individual studies, graded for methodological quality.	History of breastfeeding was associated with a reduction in the risk of acute otitis media, non-specific gastroenteritis, severe lower respiratory tract infections, atopic dermatitis, asthma (young children), obesity, type 1 and 2 diabetes, childhood leukemia, sudden infant death syndrome (SIDS), and necrotizing enterocolitis.
Fisher, JO, et al. Breastfeeding through the first year predicts maternal control in feeding and subsequent toddler energy intakes. 2000.	Longitudinal study of 55 white infants and their mothers from age 12 or 13 months to age 18 months in Pennsylvania	Toddler energy intakes of breast milk at 18 months were positively associated with mean length from 12 or 13 to 18 months, and negatively associated with mean skin-fold measurements for the same age group. Possible that breastfeeding through the first year influences the breastfed infant's acceptance of solid foods, which in turn affects maternal control.
Fox MK, et al. Sources of Energy and Nutrients in the Diets of Infants and Toddlers. 2006.	Analyses of 24-hour dietary recall data from the 2002 Feeding Infants and Toddlers Study including 3,586 unique food items spanning a random sample of 3,022 infants and toddlers 4 to 24 months of age, USA	Among toddlers, juices and fruit-flavored drinks are the second and third most important sources of energy. Among infants 6-11 months, non-milk foods included in the top 10 sources of energy are infant cereal, 100% juice, commercial baby food dinners, bananas, cookies, applesauce, and commercial baby food desserts. Relatively few infants consume meats before 9 months of age.
Gibson RS, et al. Complementary foods for infants 9-11 months, assuming a breast infant feeding in developing countries: their milk intake of average volume and composition nutrient adequacy and improvement. 1998.	The energy and nutrient content of 23 plant-based complementary foods consumed in developing countries was analyzed and compared with the estimated nutrient needs from complementary foods for infants 9-11 months, assuming a breast infant feeding in developing countries: their milk intake of average volume and composition and three complementary feedings per day.	Analyses suggest that there is a high risk of inadequate intakes of vitamins A and B2, and calcium, iron and zinc from cereal-based diets.
Islam MM, et al. Effects of energy density and feeding frequency of complementary foods on total daily energy intakes and consumption of breast milk by healthy breastfed Bangladeshi children. 2008.	Nine separate, randomly ordered dietary periods lasting 3-6 days each, food and breast milk consumption by 18 health breastfed children 8-11 mo of age was measured.	Total daily energy intake from complementary foods increases in relation to the energy density and feeding frequency of analyzed foods. Breast milk consumption decreases in relation to these two characteristics of the complementary feeding regimen, mainly because of shorter time spent nursing. Most likely, the decrease occurs in response to the infant's greater meal-related satiety.
Onyango, AW. Continued breastfeeding and child growth in the second year of life: a prospective cohort study in western Kenya. 1999.	Prospective cohort study of 264 children for 6 months (mean age 14 months [range 9-18] at baseline)	Results consistent with the evolving evidence that the nutritional benefits of long-term breastfeeding are more evident in deprived than in better-off environments. Continued breastfeeding during the 2 nd year of life had a positive association with growth; zinc and iron though low in breast milk are more bio-available than in the cereal based supplementary foods.
Onyango AW et al. The contribution of breast milk to toddler diets in western Kenya. 2002	24-h dietary recall of complementary foods measured once every 3 weeks over a 6-month period; 250 toddlers (mean baseline age 13.9 +/- 2.4 months)	Three quarters of non-breast milk energy was obtained from carbohydrate. Only 13% of energy was obtained from animal source foods. Breast milk made an important contribution to the fat and vitamin A intakes. The amount of food offered and accepted increased when human milk was no longer consumed, but the composition of the diet did not change to compensate qualitatively for the loss of breast milk.

CONCLUSIONS

•Emphasis on complementary foods by public health initiatives and commercial producers without due attention to maintaining adequate milk supply could be potentially harmful, not only to children, but at the population level, as it removes the protective impact of breastfeeding and can create dependency on externally prepared products to ensure adequate nutrient density.

- To ensure that nutritional needs are met as the infant transitions to an adult diet after 6 months of age, infants should be offered human milk before complementary foods, especially in developing countries. With an adequate consumption of breast milk after 6 months of age, infants' nutritional needs can be met by consuming family foods in most populations, and therefore does not require special complementary foods.
- Programs to improve toddler nutrition should encourage continued breastfeeding in the 2nd year of life. I
- Implementation of programs focused on improving maternal nutritional status with simultaneous support for breastfeeding may yield strongest improvements in child nutrition.
- Encourage a holistic approach to transitional foods, including maintenance of breastfeeding supply, responsive feeding and food safety.

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References available in handout