

demonstrate decreased growth rates and nutritional deficiencies even beyond the hospitalization period. These infants often have inadequacies of calcium, phosphorus, protein, sodium, vitamins, and energy. Specially designed supplements for human milk have been developed to address these deficits. Fortifiers containing protein; carbohydrate; calcium; phosphorus; magnesium; sodium; and varied amounts of zinc, copper, and vitamins are used to supplement breastmilk. Because fortifiers do not contain sufficient iron, supplemental iron is added, usually when the infant reaches 1 month of age.

A number of studies regarding the effects of long-chain polyunsaturated fatty acids on cognitive development, visual acuity, and physical growth in full-term and preterm infants have prompted formula companies to add docosahexaenoic acid (DHA) and arachidonic acid (AA) to their infant formulas. AA and DHA are present in human milk, and their presence has been reported to lead to an increase in cognitive development in human milk-fed infants compared with infants fed a formula without these fatty acids. However, one meta-analysis of four clinical trials demonstrated no clinically significant developmental benefits to supplementation of formula with AA and DHA in term and preterm infants at 18 months of age ([Beyerlein, Hadders-Algra, Kennedy, et al, 2010](#)).

Preterm infants may be able to successfully breastfeed earlier than previously believed (28 to 36 weeks); in addition, preterm infants who are breastfed rather than bottle fed demonstrate fewer incidences of oxygen desaturation; absence of bradycardia; warmer skin temperature; and better coordination of breathing, sucking, and swallowing ([Gardner and Lawrence, 2011](#)). Preterm infants should be carefully evaluated for readiness to breastfeed, including assessment of behavioral state, ability to maintain body temperature outside an artificial heat source, respiratory status, and readiness to suckle at the mother's breast. The latter may be accomplished with nonnutritive sucking at the breast during skin-to-skin (kangaroo) contact so the mother and newborn may become accustomed to each other ([Gardner and Lawrence, 2011](#)). Nasal cannula oxygen may also be provided during preterm breastfeeding on the basis of the infant's assessed requirements.

Time, patience, and dedication on the part of the mother and the