protective functions; the oligosaccharides (prebiotic) in human milk stimulate the growth of *Lactobacillus bifidus* (a probiotic) and prevent bacteria from adhering to epithelial surfaces. Human milk contains two proteins, whey (lactalbumin) and casein (curd), in a ratio of approximately 60 : 40 (vs. 80 : 20 in most cow's milk–based formula). This ratio in human milk makes it more digestible and produces the soft stools seen in breastfed infants. Thus, human milk has a laxative effect, and constipation is uncommon. The whey protein lactoferrin in human milk has iron-binding characteristics with bacteriostatic capabilities, particularly against gram-positive and gram-negative aerobes, anaerobes, and yeasts (Lawrence and Lawrence, 2011).

Lysozyme is found in large quantities in human milk and has bacteriostatic functions against gram-positive bacteria and *Enterobacteriaceae* organisms. Human milk also contains numerous other host defense factors, such as macrophages, granulocytes, and T and B lymphocytes. Casein in human milk greatly enhances the absorption of iron, thus preventing iron-dependent bacteria from proliferating in the gastrointestinal tract. Secretory immunoglobulin A (IgA) is found in high levels in colostrum, but levels gradually decline over the first 14 days of life. Secretory IgA prevents bacteria and viruses from invading the intestinal mucosa in breastfed newborns, thus protecting from infection. The whey protein is also believed to play an important role in preventing the development of certain allergies.

Several digestive enzymes also present in human milk include amylases, lipases, proteases, and ribonucleases, which enhance the digestion and absorption of various nutrients. The amounts of lipid- and water-soluble vitamins, electrolytes, minerals, and trace elements in human milk are sufficient for growth, development, and energy needs during the first 6 months of life. The one possible exception is vitamin D, which is found in varying amounts depending on the mother's intake of vitamin D–fortified food and exposure to ultraviolet light. Therefore, to prevent vitamin D–deficiency rickets, the American Academy of Pediatrics Section on Breastfeeding now recommends that infants who are exclusively breastfed or who are ingesting less than 1000 ml/day of vitamin D–fortified formula be supplemented with 400 IU vitamin D (oral) per day (Wagner, Greer, American Academy of Pediatrics Section on