

have glucose-6-phosphate dehydrogenase (G6PD) deficiency, which can cause hemolytic anemia.

On average, newborns produce twice as much bilirubin as adults because of higher concentrations of circulating erythrocytes and a shorter life span of RBCs (only 70 to 90 days in contrasted to 120 days in older children and adults). In addition, the liver's ability to conjugate bilirubin is reduced because of limited production of glucuronyl transferase. Newborns also have a lower plasma-binding capacity for bilirubin because of reduced albumin concentrations compared with older children. Normal changes in hepatic circulation after birth may contribute to excess demands on liver function.

Normally, conjugated bilirubin is reduced to urobilinogen by the intestinal flora and excreted in feces. However, the relatively sterile and less motile newborn bowel is initially less effective in excreting urobilinogen. In the newborn intestine, the enzyme β -glucuronidase is able to convert conjugated bilirubin into the unconjugated form, which is subsequently reabsorbed by the intestinal mucosa and transported to the liver. This process, known as **enterohepatic circulation**, or **shunting**, is accentuated in newborns and is thought to be a primary mechanism in physiologic jaundice ([Blackburn, 2011](#)). Feeding (1) stimulates peristalsis and produces more rapid passage of meconium, thus diminishing the amount of reabsorption of unconjugated bilirubin; and (2) introduces bacteria to aid in the reduction of bilirubin to urobilinogen. Colostrum, a natural cathartic, facilitates meconium evacuation.

Breastfeeding is associated with an increased incidence of jaundice as a result of two distinct processes. **Breastfeeding-associated jaundice (early-onset jaundice)** begins at 2 to 4 days of age and occurs in approximately 12% to 35% of breastfed newborns ([Blackburn, 2011](#)). The jaundice is related to the process of breastfeeding and probably results from decreased caloric and fluid intake by breastfed infants before the milk supply is well established because decreased milk intake is associated with increased enterohepatic circulation of bilirubin ([Soldi, Tonetto, Varalda et al, 2011](#)). Reduced fluid intake results in dehydration, which also concentrates the bilirubin in the blood.

Breast milk jaundice (late-onset jaundice) begins at age 5 to 7