

- Physiologic (developmental) factors (prematurity)
- An association with breastfeeding or breast milk
- Dehydration (limited oral intake)
- Excess production of bilirubin (e.g., hemolytic disease, biochemical defects, bruises)
- Disturbed capacity of the liver to secrete conjugated bilirubin (e.g., enzyme deficiency, bile duct obstruction)
- Combined overproduction and undersecretion (e.g., sepsis)
- Some disease states (e.g., hypothyroidism, galactosemia, infant of a diabetic mother [IDM])
- Genetic predisposition to increased production or delayed metabolism (American Indians, Asians, Mediterranean)

The most common cause of hyperbilirubinemia is the relatively mild and self-limited **physiologic jaundice**. Unlike hemolytic disease of the newborn (HDN) (see later in chapter), physiologic jaundice is not associated with any pathologic process. Although almost all newborns experience elevated bilirubin levels, only about 50% to 60% demonstrate observable signs of jaundice ([Blackburn, 2011](#)).

Two phases of physiologic jaundice have been identified in full-term infants. In the first phase, bilirubin levels of formula-fed white and African-American infants gradually increase to approximately 5 to 6 mg/dl by 3 to 4 days of life and then decrease to a plateau of 2 to 3 mg/dl by the fifth day ([Blackburn, 2011](#)). Bilirubin levels maintain a steady plateau state in the second phase without increasing or decreasing until approximately 12 to 14 days, at which time levels decrease to the normal value of 1 mg/dl ([Blackburn, 2011](#)). This pattern varies according to racial group, method of feeding (breast vs. bottle), and gestational age. In preterm formula-fed infants, serum bilirubin levels may peak as high as 10 to 12 mg/dl at 5 or 6 days of life and decrease slowly over a period of 2 to 4 weeks ([Blackburn, 2011](#)).

As noted earlier, infants of Asian descent (as well as American Indians) have mean bilirubin levels almost twice those seen in whites or African Americans. An increased incidence of hyperbilirubinemia is seen in newborns from certain geographic areas, particularly areas around Greece. These populations may