

Therapeutic Management

After the diagnosis of iron-deficiency anemia is made, therapeutic management focuses on increasing the amount of supplemental iron the child receives. This is usually done through dietary counseling and the administration of oral iron supplements.

In formula-fed infants, the most convenient and best sources of supplemental iron are iron-fortified commercial formula and iron-fortified infant cereal. Iron-fortified formula provides a relatively constant and predictable amount of iron and is not associated with an increased incidence of gastrointestinal (GI) symptoms, such as colic, diarrhea, or constipation. Infants younger than 12 months old should *not* be given fresh cow's milk because it may increase the risk of GI blood loss occurring from exposure to a heat-labile protein in cow's milk or cow's milk-induced GI mucosal damage resulting from a lack of cytochrome iron (heme protein) (Kett, 2012; Subramaniam and Girish, 2015; Ziegler, 2011). If GI bleeding is suspected, several stool analyses for occult blood known as *guaiac tests* are performed to identify any intermittent blood loss.

The addition of iron-rich foods to the diet may not provide sufficient supplemental quantities of the mineral as the sole treatment of iron-deficiency anemia. If dietary sources of iron cannot replenish the body stores, oral iron supplements are prescribed. Ferrous iron, more readily absorbed than ferric iron, results in higher Hgb levels. Ascorbic acid (vitamin C) appears to facilitate absorption of iron and may be given as vitamin C-enriched foods and juices with the iron preparation.

If the Hgb level fails to rise after 1 month of oral therapy, it is important to assess for persistent bleeding, iron malabsorption, noncompliance, improper iron administration, or other causes of the anemia. Parenteral (IV or intramuscular [IM]) iron administration is safe and effective but painful, expensive, and occasionally associated with regional lymphadenopathy, transient arthralgias or serious allergic reaction (Andrews, Ullrich, and Fleming, 2009; Bregman and Goodnough, 2014; Lerner and Sills, 2011). Therefore, parenteral iron is reserved for children who have iron malabsorption, chronic hemoglobinuria, or intolerance to oral preparations. Transfusions are indicated for the most severe anemia and in cases of serious infection, cardiac dysfunction, or surgical emergency when anesthesia is required. Packed RBCs (2 to 3