Three types of anemia—iron-deficiency anemia, sickle cell anemia, and thalassemia—all of which affect children, are discussed.

**IRON-DEFICIENCY ANEMIA**

Iron-deficiency anemia is a condition that results when the demand for stored iron is greater than what the body can supply. The number of RBCs may be normal, but the hemoglobin level is low, resulting in decreased oxygen-carrying capacity. The cause of iron-deficiency anemia in infants can be blood loss, but more commonly it is due to poor intake of iron and iron-rich foods after 6 months of age. Infants have adequate iron stores from birth to 4 to 6 months. In children and adolescents, iron-deficiency anemia may develop during periods of rapid physical growth.

**Manifestations**

The child with iron-deficiency anemia will appear pale, tired, and irritable (Figure 20-5 ■). If undiagnosed or untreated for a long period of time, the child can display tachycardia, muscle weakness, systolic heart murmur, and growth retardation, as well as be mentally delayed. Over time, the nail beds become deformed.

**clinical ALERT**

Anemia may be associated with *pica*, a craving to eat substances that are not food. A child who is seen eating dirt, clay, chalk, glue, ice, starch, or hair should be assessed to determine whether anemia is the cause. Teach parents to recognize and report these symptoms promptly.

**Diagnosis**

Diagnosis of iron-deficiency anemia is made by history, physical examination, and laboratory tests. Hemoglobin, hematocrit, reticulocyte counts, serum ferritin, and serum iron concentration will be decreased while RBC count and total iron-binding capacity are increased. See Table 20-1 ■ for classifications of iron-deficiency anemia.

**Treatment**

Treatment for iron-deficiency anemia includes administration of oral supplemental iron preparations (Table 20-2 ■). Dietary counseling is also important to ensure adequate dietary intake of iron. For instance, children are more apt to eat raisins and