growth in all cells of the body (Amin, Mushtaq, and Alvi, 2015). Isolated GH deficiency without other associated pituitary hormone deficiencies or a known organic cause is seen in children (Stanley, 2012). Growth failure is defined as an absolute height of less than −2 standard deviation (SD) for age or a linear growth velocity consistently less than −1 SD for age. When this occurs without the presence of hypothyroidism, systemic disease, or malnutrition, then an abnormality of the GH–insulin-like growth factor (IGF-I) axis should be considered (Richmond and Rogol, 2008).

However, not all children with short stature have GH deficiency. In most instances, the cause is considered idiopathic. Most children with idiopathic short stature (ISS) have either familial short stature or constitutional growth delay. **Familial short stature** refers to otherwise healthy children who have ancestors with adult height in the lower percentiles. **Constitutional growth delay** refers to individuals (usually boys) with delayed linear growth, generally beginning as a toddler, and skeletal and sexual maturation that is behind that of age mates (Amin, Mushtaq, Alvi, 2015). GH therapy in children with ISS continues to be debated frequently by pediatric endocrinologists.

Clinical Manifestations

Children with GH deficiency generally grow normally during the first year and then follow a slowed growth curve that is below the third percentile. These children may appear overweight or obese due to stunted height in combination with good nutrition. A nourished appearance is an important diagnostic clue which may differentiate patients with GH deficiency from patients with failure to thrive. Sexual development is usually delayed but is otherwise normal unless the gonadotropin hormones are deficient. Growth may extend into the third or fourth decade of life, but permanent height is usually diminished if the disorder is left untreated. Because of an underdeveloped jaw, teeth may be crowded or malpositioned.

Diagnostic Evaluation

Only a small number of children with delayed growth or short stature have hypopituitary dysfunction. Diagnostic evaluation is