

A definitive diagnosis of GH deficiency is based on absent or subnormal reserves of pituitary GH. Because GH levels are variable in children, GH stimulation testing is usually required for diagnosis. It is recommended that GH stimulation tests be reserved for children with low serum IGF-I and insulin-like growth factor binding protein 3 (IGFBP3) levels and poor growth who do not have other causes for short stature ([Hokken-Koelega, 2011](#)). GH stimulation testing involves the use of pharmacologic agents such as levodopa, clonidine, arginine, insulin, propranolol, or glucagon, followed by the measurement of GH blood levels ([Parks and Felner, 2016](#)). Children with poor linear growth, delayed bone age, and abnormal GH stimulation tests are considered GH deficient.

Therapeutic Management

Treatment of GH deficiency caused by organic lesions is directed toward correction of the underlying disease process (e.g., surgical removal or irradiation of a tumor). The definitive treatment of GH deficiency is replacement of GH, which is successful in 80% of affected children. Biosynthetic GH is administered subcutaneously on a daily basis. Growth velocity increases in the first year of treatment and then declines in subsequent years. Final height is likely to remain less than normal ([Deodati and Cianfarani, 2011](#); [Bryant, Baxter, Cave, et al, 2007](#)), and early diagnosis and intervention are essential.

The decision to stop GH therapy is made jointly by the child, family, and health care team. Growth rates of less than 1 inch per year and a bone age of more than 14 years in girls and more than 16 years in boys are often used as criteria to stop GH therapy ([Parks and Felner, 2016](#)). Children with other hormone deficiencies require replacement therapy to correct the specific disorders.

Nursing Care Management

The principal nursing consideration is identifying children with growth problems. Even though the majority of growth problems are not a result of organic causes, any delay in normal growth and sexual development may pose special emotional adjustments for these children.

The nurse may be a key person in helping establish a diagnosis.