

aimed at isolating organic causes, which, in addition to GH deficiency, may include tumor growth, hypothyroidism, oversecretion of cortisol, gonadal aplasia, chronic illness, nutritional inadequacy, Russell-Silver dwarfism, or hypochondroplasia. A detailed family history, growth history and previous health status, physical examination, and psychosocial evaluation are important. Specific radiographic imaging, including magnetic resonance imaging (MRI), endocrine studies, and genetic testing may be warranted (Stanley, 2012). Accurate measurement of height and weight, and comparison with standard growth charts, are essential. Multiple height measures reflect a more accurate assessment of abnormal growth patterns (Box 28-2). Parental height and familial patterns of growth are important clues to diagnosis. A skeletal survey in children younger than 3 years old and radiographic examination of the hand/wrist for centers of ossification (bone age) (Box 28-3) in older children are important in evaluating growth.

Box 28-2

Evaluating the Growth Curve

Ensure reliability of measurements: Accurately obtain and plot height and weight measurements.

Determine absolute height: The child's absolute height bears some relationship to the likelihood of a pathologic condition. However, the majority of children who have a height below the lowest percentile (either the third or fifth percentile on the height curve) do not have a pathologic growth problem.

Assess height velocity: The most important aspect of a growth evaluation is the observation of a child's height over time, or height velocity. Accurate determination of height velocity requires at least 4 and preferably 6 months of observation. A substantial deceleration in height velocity (crossing several percentiles) between 3 and 12 or 13 years of age indicates a pathologic condition until proven otherwise.

Determine weight-to-height relationship: Determination of the weight-to-height ratio has some diagnostic value in ascertaining