size, such children are more likely to develop a positive self-image.

Professionals and families can find resources for research, education, support, and advocacy from the Human Growth Foundation.* Treatment is expensive, but the cost is often partially covered by insurance if the child has a documented deficiency.

Pituitary Hyperfunction

Excess GH before closure of the epiphyseal shafts results in proportional overgrowth of the long bones until the individual reaches a height of 2.4 m (8 ft) or more. Vertical growth is accompanied by rapid and increased development of muscles and viscera. Weight is increased but is usually in proportion to height. Proportional enlargement of head circumference also occurs and may result in delayed closure of the fontanels in young children. Children with a pituitary-secreting tumor may also demonstrate signs of increasing intracranial pressure, especially headache.

If oversecretion of GH continues after epiphyseal closure (growth plate), growth occurs in the transverse direction, producing a condition known as **acromegaly**. Typical facial features include overgrowth of the head, lips, nose, tongue, jaw, and paranasal and mastoid sinuses; separation and malocclusion of the teeth in the enlarged jaw; disproportion of the face to the cerebral division of the skull; increased facial hair; thickened, deeply creased skin; and an increased tendency toward hyperglycemia and diabetes mellitus (DM). Acromegaly can develop slowly, leading to delays in diagnosis and treatment.

Diagnostic Evaluation

Excessive secretion of GH by a pituitary adenoma causes most cases of acromegaly. Diagnosis is based on a history of excessive growth during childhood and evidence of increased levels of GH. MRI may reveal a tumor or an enlarged sella turcica, normal bone age, enlargement of bones (e.g., the paranasal sinuses), and evidence of joint changes. Endocrine studies to confirm excess of other hormones, specifically thyroid, cortisol, and sex hormones, should also be included in the differential diagnosis.

Therapeutic Management