

## Growth in Sotos' Syndrome

Persons with Sotos' syndrome have early accelerated growth, advanced bone age (BA), acromegaloid features, and developmental delay. Typically, the facies is distinguished by frontal bossing, large head circumference, antimongoloid slant of the palpebral fissures, and a prominent jaw. Diagnosis is based on the typical facies together with the large body size for age. Agwu et al report growth data on 40 patients (20 males and 20 females) who achieved their adult height. In addition to measurements of each patient's height and weight, arm span and body segment ratios were determined. Age of menarche was recorded, BA was determined, and target heights were calculated.

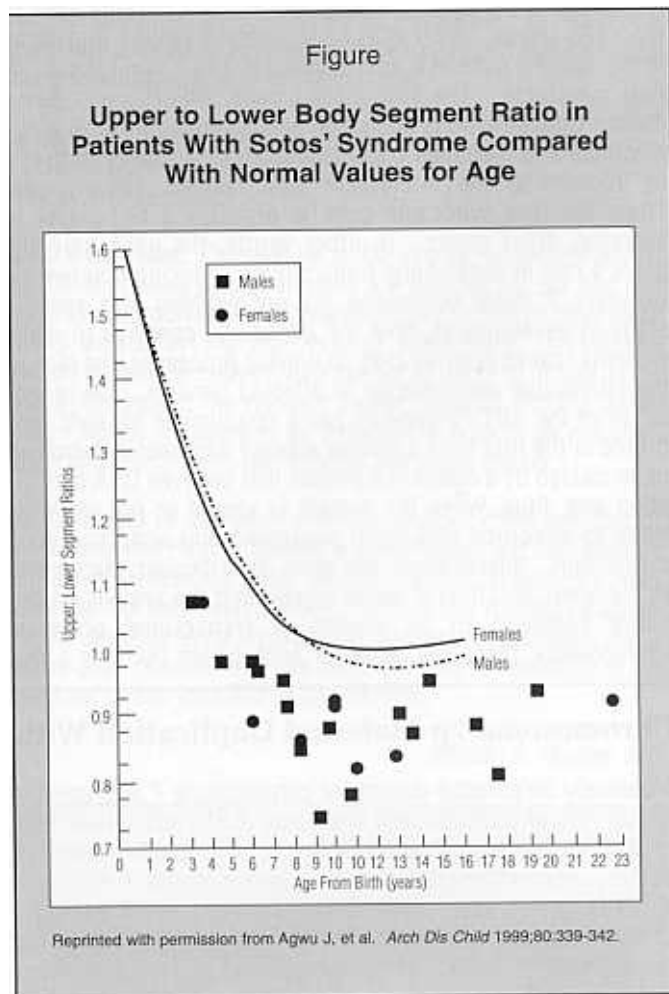
In boys, the mean height SDS in the 2nd and 6th years of life was 3.58 and 3.0, respectively. The mean height SDS for girls was 3.6 and 3.8 in the 2nd and 6th years, respectively. However, the mean height SDS at final height was 1.51 for men and 1.8 for women. These final heights are within the normal range for the British population for women and usually in the normal range for the men. However, the average final height in the men was 11.3 cm greater than their target height, whereas the average final height for women was only 6.2 cm above their target height. Upper to lower body segment ratio was reduced (Figure) and arm span was increased compared with population controls. BAs were advanced above the 97th percentile in those cases for which BAs were available. The mean age of menarche was 12.2 years (range, 8.9 to 15.4 years), which is slightly, but not significantly, earlier than the average for British girls (13 years). The excess arm span and reduced upper to lower body segment ratios suggest that much of the influence on height is a result of increases in limb lengths.

Agwu J, et al. *Arch Dis Child* 1999;80:339-342.

**Editor's comment:** *There has been significant concern as to whether linear growth velocity should be reduced in individuals with Sotos' syndrome. Agwu et al demonstrate that the final height of these individuals is not excessive even though it is somewhat above their target height. The article, which presents interesting and important information, would have been strengthened by the inclusion of separate growth curves for girls and boys in the study. Such graphic display of growth velocity at different times during childhood would have enhanced the readers' ability to understand the data. It appears*

*that children with Sotos' syndrome are born large and remain large throughout infancy and childhood, enter puberty slightly earlier than the normal population, and achieve their final height within the population norm. Thus, the information should be useful to physicians caring for these individuals. Steroid intervention must be individualized since the mean adult heights fall within the normal range, although patients may be tall for their target heights.*

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## Growth Hormone Treatment in Young Children With Down's Syndrome: Effects on Growth and Psychomotor Development

Between the ages of 6 months and 3 years, children with Down syndrome experience a significant reduction in growth velocity, and it also is during that time that a decline in intelligence quotient (IQ) is noted. Thus, Annerén et al treated 15 children (6 boys and 9 girls) with Down syndrome with exogenous GH (0.1 IU/kg/d) for 3 years beginning at 6 to 9 months of age. Height, weight, and head circumference were measured every third month during the first year, every 6 months during the second and third years, and 12 months after therapy. In addition, tests of motor development (motor perceptual tests) and mental development (Griffith's test)

were performed before GH treatment, 1 year into treatment, at the end of treatment, and 1 year after treatment was stopped. Measurements were made of insulin-like growth factor 1 (IGF-1) and serum IGF-binding protein 3 (IGFBP-3). Fifteen aged-matched children with Down syndrome served as controls. No child in either the treated or control group had any cardiac malformations.

Two girls dropped out of the GH treatment group during the first year: one because of the development of celiac disease and the other because of an increase in serum aminotransferases. There