

## Is Short Stature a Handicap? A Comparison of the Psychosocial Functioning of Referred and Non-Referred Children With Normal Short Stature and Children With Normal Stature

Heretofore, most reports that short stature conferred significant academic and social handicaps have utilized subjects who were referred for pediatric endocrinologic evaluation. The present authors evaluated the psychosocial status of 2 populations of children with normal short stature (NSS, or ISS; height below the National Center for Health Statistics [NCHS] 5th percentile not associated with illness, hormonal deficiency, or dysmorphic syndrome) in comparison to that of a third control group of children of average height. In 27 children with NSS referred for pediatric endocrinologic evaluation (group 1), mean height SDS was  $-2.7$  (range,  $-4.5$  to  $-1.3$ ). In 34 nonreferred children with NSS (group 2) who were identified through a public school screening program, the mean height SDS was  $-1.7$  (range,  $-3.2$  to  $-1.3$ ). For the 29 in the third group, the mean height SDS was  $0.06$  (range,  $-0.7$  to  $+0.7$ ). Tests of verbal and nonverbal intelligence (Kaufman Brief Intelligence Test [K-BIT]) and educational achievement (Kaufman Test of Educational Achievement [KTEA]) were administered. Family coherence and adaptability were assessed using the Family Adaptability and Cohesion Evaluation Scales (FACES II), as were the adaptive and problem behaviors (by the Behavior Assessment System for Children [BASC]).

No relationship was found between the height SDS and psychosocial functioning. The composite IQs of all 3 groups were similar (K-BIT). Composite and spelling achievement (KTEA) were similar in all groups, but the individuals in group 3 were significantly advantaged in mathematics and reading achievement over those in groups 1 and 2. As assessed by parents, the NSS subjects in group 1 had higher aggressivity, hyperactivity, conduct problems, and attention deficit scores, and lower social skill scores (BASC) than did nonreferred NSS or normal-statured students. Nonreferred ISS and normal height children (groups 2 and 3) had similar behavioral profiles. Teachers discerned no differences in adaptive or problem behaviors among the 3 groups. There were no intragroup differences in parental cohesion and adaptability (FACES II).

The investigators concluded that the results are consistent with the *hypothesis* that "discrepancies between earlier and more recent research on the psychosocial functioning of children with SS [short stature] may be explained, at least partly, by referral bias." These results also provide further evidence indicating that SS per se is not a handicapping condition.

Kranzler JH, et al. *J Pediatr* 2000;36:96-102.

**Editor's comment:** *This report confirms those of other investigators that NSS is not a "handicapping condition." The reason why average height children were more adept in mathematics and reading than NSS children in this study is not apparent. Could this reflect a gene or gene-associated phenomenon linking these 2 skills?*

*Voss and Saenger (J Pediatr 2000;136:103-110) debate the usefulness of treatment of NSS with GH. Voss argues that treatment with GH is not justified on the basis of auxologic findings (short stature, slow growth rate) because "short-term*

*growth data . . . cannot reliably distinguish between normal and abnormal growth" and because "there is no correlation between successive annual height velocities, so that height velocity neither predicts the future nor reports the past." Voss continues that treatment does not appear justified on the basis of either psychological or learning disabilities. Voss discusses in his presentation the definition of "normality," and concludes that "differences are tolerable; deviance demands action."*

*Saenger attempts to argue for treatment of NSS and to defer final judgment regarding treatment until more data have been accumulated on the auxologic and psychologic efficacy of therapy, a position that Voss effectively rebuts.*

*In a different article (Arch Dis Child 2000;82:10-15), Hall discusses the utility of growth screening in schools. He points out the many methodologic problems associated with measurements of height and suggests a height less than the 0.4 percentile ( $-2.67$  SD) as the cutoff measurement below which it is reasonable to do further evaluation. He states that in a group of 400 children with height less than this percentile, as many as 30 children with isolated GH deficiency and 12 with Turner syndrome, and an additional group consisting of undiagnosed illnesses producing SS, will be identified.*

Allen W. Root, MD

**2nd Editor's comment:** *Readers are referred to GGH 2000;16:1-5 to read the lead article, "Ethical Issues in Growth Hormone Therapy: Where Are We Now?" This article is based on a seminar workshop held at the University of Wisconsin in October 1999.*

Robert M. Blizzard, MD

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