

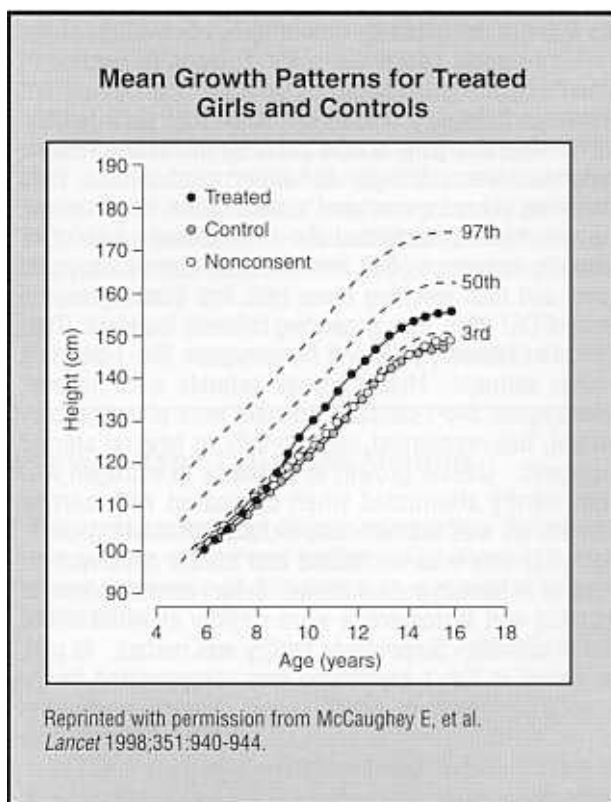
## Randomized Trial of Growth Hormone in Short Normal Girls

In a randomized study, the investigators administered recombinant human growth hormone (rhGH) (30 IU/m<sup>2</sup>/wk [0.33 mg/kg/wk]) to 7 normal short girls (height more than 2 SD below mean height for age) for an average of 6.2 years each. They compared the growth of these children to that of 6 girls who were randomized to a control, untreated group and 19 girls who did not consent to a randomized selection process.

The authors found (Figure) that at near-final height (chronologic age, 16 years) the rhGH-treated subjects were: (1) substantially taller (155.3 cm) than either untreated group (randomized, 147.8 cm; nonrandomized, 149.3 cm); (2) all within their target height range; and (3) 3.5 cm taller than their pretreatment predicted height (whereas the other groups were a mean of 5.5 cm below predicted height). Neither bone age nor puberty advanced more rapidly in rhGH-treated subjects than in the other groups. The increased stature in the rhGH-treated subjects was realized before the onset of adolescent maturation. The authors concluded that rhGH increased final height in normal short girls without affecting the timing or rate of progression of puberty.

McCaughey ES, et al. *Lancet* 1998;351:940-944.

**Editor's comment:** The majority of studies of the effectiveness of rhGH in increasing height in short normal subjects have been performed in males and have been disappointing.<sup>1</sup> McCaughey et al now report that rhGH can increase adult stature in females. Buchlis et al<sup>2</sup> also report that the adult height of short females receiving rhGH was 6.8 cm greater than that of (historical) control subjects, while adult stature of rhGH-treated males was only 3.0 cm greater than that of (untreated) control males. These observations in small groups of short females are tantalizing. Coupled with the observation that rhGH increases adult stature in patients with Turner syndrome,<sup>3</sup> one wonders if the genes on the Y chromosome that influence growth and program the taller stature of



males somehow inhibit the growth-promoting effects of exogenous GH in this sex.<sup>4,5</sup>

Allen W. Root, MD

Guyda HJ. *Trends Endocrinol Metab* 1994;5:334-340.  
 Buchlis JG, et al. *J Clin Endocrinol Metab* In press.  
 Rosenfeld R, et al. *J Pediatr* 1998;132:319-324.  
 Ogata T, Matsuo N. *J Med Genet* 1997;34:323-325.  
 Lahn BT, Page DC. *Science* 1997;278:675-680.

### CME CERTIFICATION

The GGH Editorial Board is pleased to announce Category 1 credit for *GROWTH, Genetics, & Hormones* from the University of Virginia School of Medicine. This enduring material has been planned and produced in accordance with the ACCME Essentials.

**Overview:** This enduring material is designed to provide physicians and other health professionals with current research and clinical information essential to providing quality patient care to children with growth problems and genetic disorders.

**Target Audience:** This enduring material is designed for pediatricians, pediatric endocrinologists, pediatric geneticists, and family medicine physicians interested in pediatric growth, genetics, and endocrine issues.

**Method of Physician Participation:** Physicians can study each issue of *GROWTH, Genetics, & Hormones*, respond to the post-test self-evaluation questions, and request CME credit for each issue. The estimated length of time to complete this enduring material is 1 hour.

**Learning Objectives:** Through participation in this enduring materials series, the participant will have the opportunity to:

1. Apply current research and advances to the management of patient care for optimum clinical outcomes.
2. Utilize current research and clinical care issues to initiate discussions with colleagues with a focus toward increased awareness of current issues and controversies.
3. Conceptualize areas for future research in the field of growth and genetics.