

Short boys are 2 to 3 times as likely as short girls to receive growth hormone

June 10 2015

Short boys are three times more likely than short girls to receive recombinant human growth hormone treatment for idiopathic short stature (ISS), even though in a general pediatric population, equal proportions of both genders fall under the height threshold designating ISS. Researchers who analyzed records of over 283,000 U.S. children and adolescents found a clear-cut and persistent gender bias in the provision of treatment.

"Growth is an important sign of child health, so growth failure merits equal consideration for both boys and [girls](#)," said study leader Adda Grimberg, M.D., a pediatric endocrinologist at The Children's Hospital of Philadelphia (CHOP) and senior fellow of the Leonard Davis Institute of Health Economics at the University of Pennsylvania. "Gender bias in treatment may have doubly undesirable effects—short girls who have an underlying disease may be overlooked, while short healthy boys may receive overzealous, unnecessary treatment with an expensive drug that requires years of nightly injections and has potential side effects."

Grimberg and colleagues published their study online June 9 in the journal *Scientific Reports*.

The study team drew on health records from 28 [primary care](#) practices in the CHOP pediatric network, comprising 189,280 patients, and compared them to 93,736 patients from the four U.S. pediatric [growth hormone](#) registries. All the subjects were children and adolescents (up to age 20).

In the primary care population, 2073 subjects (1.1% of the total) had height below the threshold for idiopathic short stature (ISS)—short stature from an unknown cause. There were no gender differences in the prevalence of height below this threshold, nor in the distributions of height in the entire primary care population. The U.S. Food & Drug Administration defines ISS as height more than 2.25 standard deviations below mean for age and gender, without evidence of underlying disease. This statistical definition of height corresponds to the shortest 1.2 percent of the U.S. population.

In contrast, among patients receiving recombinant human growth hormone for ISS, 74 percent were male. Among patients who received the hormone for all diagnoses, 66 percent were male. At the time of initiating growth hormone for ISS, treated boys outnumbered girls for every year of age starting at age 1, but the biggest differences occurred around puberty, when late bloomers and limited remaining time for potential medical intervention raise concern.

The authors note that both physicians and parents contribute to the gender-based treatment bias. Grimberg and colleagues found in a 2005 study that twice as many boys as girls were referred to specialists for evaluation of short stature, and that girls who were referred had greater height deficits than boys who were referred. Similarly, in the growth hormone registries in the current study, the girls treated for ISS were on average shorter than the treated boys at the start of growth hormone treatment.

The authors added that although primary care physicians make the referrals, they are influenced by parental concerns, and that some parents directly seek specialist care regarding short stature in their children. "Social pressures regarding height seem to affect males more than females, at least in the U.S.," said Grimberg. "In the absence of an underlying condition, treating short children with recombinant human

growth hormone represents medicalization of a physical trait." Human growth hormone treatment costs roughly \$20,000 annually per child and requires daily injections.

Finally, in previous research, Grimberg found that proportionally more girls who were referred for evaluation of [short stature](#) were much more likely to have an underlying disease than boys who were referred. "The [gender bias](#) in referral and treatment suggests that diagnoses of underlying diseases are more likely to be delayed or missed altogether in short girls, and this suggests missed opportunities to address those conditions, not all of which require growth hormone treatment."

More information: "Gender Bias in U.S. Pediatric Growth Hormone Treatment," *Scientific Reports*, published online June 9, 2015.

Provided by Children's Hospital of Philadelphia

Citation: Short boys are 2 to 3 times as likely as short girls to receive growth hormone (2015, June 10) retrieved 4 May 2024 from <https://medicalxpress.com/news/2015-06-short-boys-girls-growth-hormone.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--