# Growing pains

## Human growth hormone therapy for short kids has its pros and cons

Concern over a child's growth may require treatment, though in the majority of cases, it's simply down to the genes you were born with.

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By ERIKA PRAFDER

TO what heights will you go for your child's self-esteem?

Many parents are contemplating this question as they weigh the pros and cons of exploring growth hormone (GH) for their short-statured children.

"People come to see us after being referred by a pediatrician because their child is not growing up to their expectations. We evaluate what the realistic expectation should be, but there is a large range of what might be considered normal in kids of different ages and by gender," says Phyllis W. Speiser, MD, chief of the division of pediatric endocrinology at the Steven and Alexandra Cohen Children's Medical Center of New York and professor of pediatrics at Hofstra-North Shore LIJ School of Medicine.

In general, "If a child is above the first percentile (measured against a population of those of the same age and sex) for height and growing at a consistent rate, he or she is not going to be a candidate for growth hormone," says Dr. Speiser. "But, a child who is destined to be unusually short (below 1.2 percentile for height — 5'3" for a boy and 4'11" for a girl) may be considered for growth hormone treatment."

According to Dr. Speiser's research, "About 500,000 children in the U.S. are potential candidates for GH treatment and about twice as many boys than girls are treated."

One reason a child may fall into this category is that he or she is deficient in GH, which is produced by the pituitary gland — the controller of all hormonal functions. GH deficiency may also develop after birth from trauma, infection, radiation to the head, and various diseases (such as brain tumors), according to WebMD.com.

Children with growth hormone deficiency have a slow or flat rate of growth, usually less than 2 inches per year. The slow growth rate may not appear until a child is 2 or 3 years old, according to the National Institute of Health (www.nih.gov).

For those kids who are on the small side but don't have a medical condition, "Most often, growth hormone treatment (injections of GH) is not covered by insurance companies," says Dr. Speiser. Treatment costs can run upward of $20,000 and $40,000 annually, according to the doctor.

By analyzing a child's growth pattern (based on previous measurements from annual physical exams), body proportions, and the family's height range, "We may or may not order further tests. When parents are unhappy about where their kid is on the growth chart, it doesn't necessarily warrant injecting them," says Dr. Speiser.

"If short stature is not solely caused by GH deficiency, you can't always be remedied by receiving it," she continues. "You may have a structural bone defect. There is less of an effect of GH if genetically you're not meant to be tall." Sometimes, a child can simply be underweight or late in experiencing puberty. "He or she may need to see a nutritionist," adds Dr. Speiser.

Blood tests are another tool used by pediatric endocrinologists to help diagnose GH deficiency.

"It has to be done in a pediatric endocrinologist's office, and a child may have to sit for a growth stimulation test, which consists of obtaining serial blood samples for GH before and up to several hours after medication is administered to stimulate the pituitary," says Dr. Speiser.

Since the FDA regulates the use of GH, typically, only endocrinologists and pediatric nephrologists do so, according to Dr. Speiser.

If you are concerned about your child's growth rate, while there's no limit at what age to evaluate growth deficiency, "Typically, we see kids in the middle school or junior high school years, when puberty hits," says Dr. Speiser. "If a child has completed puberty, it's too late to treat. We have to have open bone growth plate when treatment begins."

GH therapy entails daily injections for the duration of growth, according to the medical expert. "Most kids will be on it for two to three years," says Dr. Speiser. A child's response to treatment "Is commonly evident in the first six or twelve months," she adds. "The more deficient you are, the more likely you are to benefit."

As with any drug, there are associated risks. Known side effects include headaches, joint aches, raised blood sugar, orthopedic abnormalities (which may need surgical fixation) and scoliosis. And if you're prone to diabetes, GH could exacerbate that risk.

One longer-term effect of GH treatment is, "There is a GH-dependent protein associated with higher risk for certain types of cancer. We wouldn't treat a child with active cancer — he or she would need to be in remission for at least a year. We make patients aware of this," says Dr. Speiser. Additionally, in the U.S., "We haven't tracked people who have had GH treatment long-term. We don't know the data, so we need to be circumspect."

While your doctor can't precisely predict the risks, "Fewer than three percent of those taking GH will experience major or minor side effects," says Dr. Speiser.

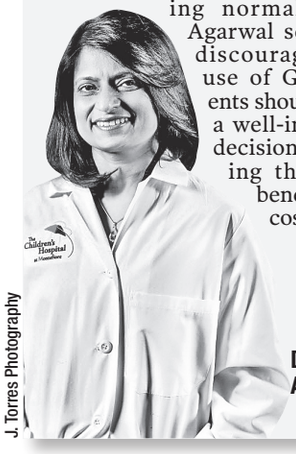
Given that the average child who is not medically deficient in GH may achieve 1.5 or 2 inches (at best) by taking GH, "You must consider whether your child's quality of life will be distinctly better after receiving GH or not," says Dr. Speiser. "Realize that you're medicalizing an issue that is really not, in many cases, a medical problem. A child may then feel that he or she is different and somehow inadequate. A child may have other talents and gifts, but often parents focus solely on a child's growth pattern... and turn it into a major problem."

## WEIGHING UP THE RISKS

Before you pursue the GH path for your child, here are some points to consider, according to Chhavi Agarwal, MD, MRCP, and pediatric endocrinologist with the division of pediatric endocrinology and diabetes at The Children's Hospital at Montefiore.

- Most short children do not have a serious growth problem and will reach an adult size about the same as their parents.
- If you're concerned about your child's growth curve, talk with your healthcare professional or a pediatric endocrinologist.
- Inquire about having a bone-age scan of your child's wrist, which can help doctors to determine skeletal maturity. By comparing your child's X-ray to those of healthy children, doctors can measure whether bone age, or skeletal age, correlates to chronological age.
- GH deficiency can be related to congenital abnormalities, genetic defects in the GH gene, tumors, infection, inflammation or trauma.
- If side effects to treatment occur, GH is stopped and starts back at lower doses, gradually increasing.
- If your child is short but growing normally, Dr. Agarwal seriously discourages the use of GH. Parents should make a well-informed decision, weighing the risks, benefits and cost.

*— Erika Prafder*



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