GROWTH HORMONE TREATMENT

At Children’s Hospital of Pittsburgh of UPMC, we believe parents and guardians can contribute to the success of this treatment and invite you to participate. Please read the following information to learn about the treatment and how you can help.

Fast Facts About Growth Hormone (GH) Treatment

- Growth hormone injection treatment is prescribed for children who have been diagnosed with growth hormone (GH) deficiency and other conditions causing short stature.
- A number of other tests must be conducted first to confirm GH deficiency, Turner Syndrome, or other conditions for which GH therapy is indicated. These tests may include stimulation tests, MRIs, and x-rays.
- GH treatment has few side effects.
- GH treatment is a safe, effective way to treat growth hormone deficiency, Turner Syndrome, and a few other conditions associated with short stature.

How Growth Works

In order for a child to grow, a gland deep inside the brain, called the pituitary, must release enough growth hormone (GH). Natural growth hormone is released during deep sleep. Many factors influence the release of GH, including nutrition, sleep, exercise, stress, medications, blood sugar levels, and other hormones present in the body.

When a child’s body does not produce or release enough GH, he or she may have several symptoms, the most noticeable being slow or no growth or facial features that make the child look a lot younger than his or her peers. Although being small has no effect on a child’s intelligence, it may cause self-esteem issues and interfere with the development of mature social skills. For that reason, GH treatment may be prescribed to help a child reach his or her fullest growth potential—both in height and in personal development.

How Growth Hormone Treatment Works

Once a child has been diagnosed with GH deficiency, Turner Syndrome, or other conditions treatable with GH therapy, the pediatric endocrinologist will discuss the pros and cons of, and usually recommend, GH therapy. The GH used in treatment is manufactured in the laboratory to be identical to that produced by the pituitary gland, so it is safe and effective. GH is given through a subcutaneous (sub-Q-TAIN-ee-us) injection, which means that it goes into the fatty tissue just beneath the surface of the skin. GH can be given by a special injection device that looks like a pen. Because it is such a shallow injection, the needle is very small and does not hurt much at all.

What To Expect With Growth Hormone Treatment

The main thing to expect is growth! Although it takes about 3 to 6 months to realize any height differences, the important thing is that your child will grow — probably 1 to 2 inches within the first 6 months of starting treatment. There may be a few other things you notice:

- Your child may outgrow his or her shoes quickly. Foot growth may occur within 6 to 8 weeks, so you may have to buy new shoes more often.
- Your child may want to eat more. An increase in appetite is common, especially if he or she had a poor appetite before treatment.
- Your child may look skinnier for a while once height growth starts. An increase in lean body mass and decrease of fat mass are common with GH treatment.

It may take a number of years for your child to reach his or her adult height, so you should be aware that GH treatment is often a long-term commitment. Routine visits with the pediatric endocrinologist will be needed, as will periodic blood tests and x-rays to monitor your child’s progress on the treatment. Although the length of treatment varies, your child probably will have to stay on GH treatment until he or she has:

- Reached his or her full adult height
- Reached full bone maturity
- Grown less than 2 cm in the last year
Getting and Giving GH Injections

GH injections are quick and almost pain-free, so children ages 10 and up may be able to and often prefer to give themselves their own injections. It is important that a parent supervises the injection to make sure the child gives the correct dosage each day. Parents should give the injections to younger children. Because natural growth hormone is released mainly during sleep in children, GH treatment is more effective when taken at bedtime.

Learning how to give GH injections may sound intimidating at first, but once you and your child get used to it, it becomes just another daily habit. There are, however, some tips that you should know when you start GH therapy:

Storage

GH must be refrigerated at 36 to 42° F; letting it get too hot or too cold will decrease its effectiveness.

- If left out overnight, you may place it back into refrigerator and continue to use it.
- When traveling, keep it in the cooler provided in the starter kit for up to 10 hours, then put on ice after 10 hours. Be careful not to place GH pens directly in ice — keep them separate by placing pen in a Ziploc bag.

Time of Day

Give GH at night, preferably within an hour of sleep. Try to give it consistently within an hour timeframe, for example between 9 and 10 p.m. every night.

- You may change the time occasionally, by a few hours earlier or later, but do not give before 5 p.m, except under unusual circumstances (such as leaving for a trip, a sleep-over, etc.)
- Do not make up missed injections.
- For best results, try not to miss more than once per month.

Injection Sites

- Use 4 of the 8 possible injection sites, and rotate them each time. The sites are back of arms, top or outside of thighs, sides of belly, and outer quadrant of buttocks.
- Document the site used nightly on a calendar.
- Document when you open a new cartridge to keep track of expiration dates and how many injections have been used out of each cartridge.

Finishing A Cartridge

Because GH is very expensive, you should use up all of the medication in every cartridge.

- Pens will only allow you to dial to what is left of the medication. Use up the last of it, and start a new cartridge by doing a second injection with the amount missing.
- You may have to use up cartridges about once a week or so. If there is less than 0.2 mg left in the old cartridge, or if you are missing less than 0.2 mg of the last injection, do not give an additional injection.

Other Medications

Since GH does not interfere with other medications, it can be taken even if your child is mildly ill (colds, flu), unless your PCP tells you to stop.

- If your child becomes seriously ill or is hospitalized, call the Endocrinology Clinic for further instructions.

Possible Side Effects

Although infrequent, there are some possible side effects that you should be aware of. They are:

- Allergic reaction, including swelling at the injection site, rash, or hives
- Hip, knee, or other joint pain
- Headache
- Progression of spine curvature in patients with scoliosis
- Temporary increase in blood sugar levels, which stops when the GH treatment stops

If the headache is persistent or severe, however, call the Endocrinology Fellow on call immediately. If you have questions about a reaction, or your child is experiencing a reaction, call the Endocrinology Clinic or office.

Insurance Coverage

GH is sold under a number of different prescription brand names, but all of them contain the same medication. Which brand name your child will use, and the shape and color of the pen that delivers the medication, will depend upon your medical insurance.

Because GH is very expensive, Children’s Hospital works with insurance reimbursement specialists to determine which brand will be covered under your medical insurance. Within 2 to 4 weeks after your child has been prescribed HG treatment, an insurance reimbursement specialist will call your home. It is very important that you speak with the specialist — please pick up or return the call! Your child’s prescription will not be filled until you have spoken with the reimbursement specialist. You should receive your child’s GH with 2 to 4 weeks...
after approval; if you haven’t heard from the reimburs-ment specialist after 4 weeks, call the Endocrinology Clinic.

If your insurance changes during the course of GH treatment, please notify the Endocrinology Clinic as soon as possible or the continuity of your child’s treatment could be interrupted.

GH Injection Training
As soon as your child’s GH starter kit arrives, call the Endocrinology Clinic to schedule your family’s GH injection training session.

Your child and both parents or guardians should attend the training sessions before your child can begin GH treatment.

At the training session, the nurse consultant will teach you and your child how to:

- Care for the medication
- Recognize the side effects
- Practice with the demonstration model of your child’s brand of pen and
- Give a real GH injection

Special Needs and Questions
If you have any questions or if your child has any special needs you feel the Endocrinology Clinic needs to know about, please call the nurse consultant at Children’s Hospital before your child’s clinic appointment.

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To see the list of all available patient procedures descriptions, please visit www.chp.edu/procedures.