PATIENT & CAREGIVER EDUCATION

About Pediatric Growth Hormone Stimulation Testing Using Clonidine and L-arginine

This information explains growth hormone (GH) stimulation testing using clonidine (KLON-uh-deen) and L-arginine (L-AR-jah-neen) at MSK, including how to get ready and what to expect after. In this resource, the words “you” and “your” refer to you or your child.

About growth hormone

Growth hormone (GH) is a hormone made by your pituitary gland, which is a small gland in your brain. Your pituitary gland releases GH into your bloodstream. GH’s main job is to help children and teenagers grow to their full height. GH works with other hormones, along with exercise, proper nutrition, and rest, to help children and teenagers grow.

GH also affects:

- How well your heart and blood vessels work

- How your body uses fat, makes muscle, and strengthens bones
- Your moods and emotions
- Your overall health

If your body isn't making enough GH on its own, you can take medicine to replace it.

Causes of GH deficiency

GH deficiency is when you don't have enough GH. It's usually caused by damage to your pituitary gland. This damage can be caused by:

- Cancer treatments, such as radiation or surgery to your head or brain
- A tumor in or near your pituitary gland

GH deficiency can be total or partial. With total GH deficiency, no GH is made. With partial GH deficiency, some GH is made, but not enough to support normal growth.

About GH stimulation testing

A GH stimulation test is done to find out if your pituitary gland is releasing the right amount of GH.

During your GH stimulation test, you'll take medicine to make your pituitary gland release GH. The medicine used for your GH stimulation testing are clonidine and L-arginine. Next, your nurse will take blood samples and measure the amount of GH in your blood. Because GH is released in bursts, the level of GH in a single blood sample is likely to be very low. To get the most accurate results, your nurse will take several blood samples over several hours.

Before your GH stimulation test

Before your GH stimulation test, ask your doctor or nurse which medicine you should take the day of your testing.

Instructions for eating and drinking



Starting at midnight the night before your GH stimulation test, do not eat or drink anything except water. This includes hard candy, gum, and flavored water.

Eating food or drinking anything except water can change your test results.

The day of your GH stimulation test

If you feel sick or have a fever of 100.4° F (38° C) or higher, call your doctor's office. You may need to reschedule your test.

Take your medicine

If your doctor or nurse instructed you to take certain medicine before your testing, take only those medicines with a sip of water. Depending on what medicines you take, this may be all, some, or none of your usual medicine.

Things to remember

- Wear comfortable clothes. If possible, wear a short-sleeved shirt.
- Bring books, toys, or games to use during your test.
- Bring a snack to eat after your test.

Where to go

Your test will be done in the Pediatric Ambulatory Care Center (PACC). The PACC is in MSK's main hospital, at 1275 York Avenue. To get to the PACC, take the B elevators to the 9th floor.

What to expect

Once it has started, your GH stimulation testing will take about 4 hours. We ask parents to stay with their child during the test.

You should stay in bed during your test because the medicine may cause lightheadedness or dizziness. If you can, go to the bathroom before your testing so you don't need to move around after it starts. This will lower your risk of falling.

To begin, your nurse will insert an IV (intravenous) line into a vein, usually in your arm or hand. The IV will be used to draw blood samples and give medicine. It will be left in place so you won't need any other needle pricks during the testing.

You can expect the following schedule during your GH stimulation testing:

- A blood sample will be drawn before you get any medicine.
- Next, you'll get clonidine. Clonidine is a pill that you'll swallow.
- Blood samples will be drawn 30 minutes, 60 minutes, and 90 minutes after you've taken clonidine.

- Next, your nurse will put L-arginine into your IV over a 30-minute period.
- Blood samples will be drawn 30 minutes, 60 minutes, and 90 minutes after the L-arginine is finished.

After the last blood sample is drawn, your nurse will remove your IV line. They will apply pressure to stop any bleeding and put a small bandage (such as a Band-Aid®) over the spot where the needle was.

After your GH stimulation test

- You can start eating your normal diet right away.
- Drink plenty of liquids for the rest of the day. Aim for 8 (8-ounce) glasses.
- Don’t go to school, play any sports, or exercise for the rest of the day.
- Two to 3 days after your testing, your doctor will contact you about the test results and plan your care.

Side effects

For the first 24 hours (1 day) after your GH stimulation test, you may:

- Feel dizzy and lightheaded

- Feel sleepy
- Have a dry mouth
- Have dry eyes or blurry vision
- Feel nauseous (feeling like you're going to throw up)

For the first 24 hours after your test:

- Stand up slowly after sitting or lying down.
- Be careful when climbing stairs.
- Avoid any activities that require alertness or clear vision, such as playing sports.

Getting a good night's sleep after your GH stimulation testing can help these side effects go away. If these side effects don't go away 24 hours after your testing, call your doctor's office.

Contact Information

If you have any questions or concerns, talk with a member of the Pediatric Long Term Follow-Up Team. You can reach them Monday through Friday from 9:00 a.m. to 5:00 p.m. at 212-639-8138. If you have an emergency after 5:00 p.m., during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

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