

Growth Hormone with Suppression (Blood)



Does this test have other names?

GH

What is this test?

This test measures the level of growth hormone (GH) in your blood.

GH is made in your pituitary gland. It affects height, bone, and muscle growth in children. It affects how adults look and feel, as well as their bone and muscle health.

GH is made in a pulse-like manner. Most GH is made while you sleep. When you're awake, little or possibly no GH is found in your blood. That makes it hard to test your GH level. Specialists have developed methods to figure out if you make too much GH by testing your blood over time after suppressing GH production.

Some people with too much GH have a noncancerous tumor in their pituitary gland that makes GH, and this test helps your healthcare provider find out if you have a tumor. For the test, you are given a solution of sugar (glucose) to drink. This makes your pituitary gland stop making GH. Your blood is drawn right before you drink the sugar solution and then every 30 minutes for about 2 hours. If you have a tumor, it will keep on making GH, so the amount of GH in your blood will stay the same.

Why do I need this test?

You may need this test if your healthcare provider suspects that you have acromegaly. Acromegaly is a disorder in adults caused by too much GH. Other disorders caused by too much GH are growth hormone hypersecretion syndrome and anterior pituitary adenoma syndrome.

In children, acromegaly is called gigantism. Your child may need this test if your child's healthcare provider suspects that they might have gigantism.

Gigantism and acromegaly have many characteristics that develop slowly. Not everyone has every symptom. Symptoms may include:

- Faster growth in children
- Enlarged head, with specific changes in facial features, such as an enlarged jaw, a widened nasal bridge, a protruding forehead, and space between the teeth
- Enlarged hands and feet
- Enlarged tongue
- Headaches
- Visual disturbances

You may also have this test if you have been diagnosed with acromegaly to help your healthcare provider keep an eye on your disease.

You may also have this test if you have been given treatment to decrease GH production, so your healthcare provider can watch your dosage and change it if needed.

What other tests might I have along with this test?

Your healthcare provider may also order a blood test for insulin-like growth factor-1 (IGF-1). GH tells your liver to make IGF-1, so GH and IGF-1 are usually looked at together. GH is secreted in pulses while you sleep, but

IGF is always found in your blood. That makes it much easier to find IGF-1 in your blood than GH.

Your healthcare provider may also check the levels of other hormones including:

- Growth-hormone-releasing hormone, or GHRH
- Prolactin
- Testosterone
- Estradiol
- Luteinizing hormone, or LH
- Follicle-stimulating hormone, or FSH
- Thyroid-stimulating hormone, or TSH
- Cortisol
- Corticotropin, or ACTH

Your healthcare provider may also order an MRI to check for a pituitary tumor.

What do my test results mean?

Test results may vary depending on your age, gender, health history, and other things. Your test results may be different depending on the lab used. They may not mean you have a problem. Ask your healthcare provider what your test results mean for you.

Results are given in nanograms per milliliter (ng/mL). Normal GH levels should drop to less than 1 or 2 ng/mL after you are given glucose.

If you have higher levels of growth hormone, it means you may have:

- Acromegaly in adults. Acromegaly refers to an excessive enlargement of the limbs from the thickening of bones and soft tissue. This is caused by too much GH. In adults who have stopped growing, the areas most affected are the face, jaw, hands, and feet.
- Gigantism in children. Gigantism is an abnormal overgrowth of the body caused from the production of too much HG before the growing ends of the bones have closed (growth plates). A child with this condition may become an unusually tall adult, but the body proportions are usually normal.
- Noncancerous pituitary tumor
- Nonpituitary tumor, in very rare cases

Higher levels of GH may also be caused by chronic malnutrition, cirrhosis, and stress from surgery or a serious infection.

How is this test done?

The test is done with a blood sample. A needle is used to draw blood from a vein in your arm or hand.

Does this test pose any risks?

Having a blood test with a needle carries some risks. These include bleeding, infection, bruising, and feeling lightheaded. When the needle pricks your arm or hand, you may feel a slight sting or pain. Afterward, the site may be sore.

What might affect my test results?

Certain foods and beverages, especially those high in protein, can affect your results. Certain medicines, including oral contraceptives containing estrogen, and steroids, such as prednisone or hydrocortisone can also affect your results. Great physical or emotional stress and sleeping can affect your results.

How do I get ready for this test?

Your healthcare provider may ask you to stop taking oral estrogens for a time before this test. You also may be told to not eat or drink anything but water and not be physically active for a certain amount of time before the test.

Be sure your healthcare provider knows about all medicines, herbs, vitamins, and supplements you are taking. This includes medicines that don't need a prescription and any illegal drugs you may use.

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