

GHRH-Arginine Test

Why have I been asked to have this test?

Your doctor has recommended this test for you to either help to diagnose or monitor your condition. Please read the following information carefully and ask us if the information is not clear to you.

What is the purpose of the test?

Growth Hormone is important for growth and bone strength when we are children. In adults a lack of growth hormone can affect quality of life and may affect the distribution of fat and muscle in the body in a healthy way. There are certain criteria that need to be met in order to receive Growth Hormone treatment; these have been set out by NICE (National Institute for Clinical Excellence).

Hormones that cause Growth Hormone to be produced are made in the pituitary gland that sits in the base of the brain. Stimulating the pituitary gland allows us to see if Growth Hormone can be made.

Who does the test?

The test will be carried out by the endocrine specialist nurse or an endocrine doctor.

How does the test work?

You will be given an injection of growth hormone releasing hormone (GHRH) followed by an infusion of 10% L-Arginine over 30 minutes.

GHRH is the main stimulator for growth hormone release in the body; it is made and released from the hypothalamus then travels through the blood stream to the pituitary gland where it acts on the specialized growth hormone producing cells.

The hypothalamus sits deep inside the base of the brain and the pituitary gland is attached beneath it by a thin stalk of nerve fibres.

By stimulating the pituitary gland in this way we are able to see whether the specialized cells are able to make growth hormone or whether you have a deficiency and may need growth hormone replacement.

What will I have to do?

You will be asked to stay nil by mouth for the duration of the test, but you can have water to drink. We will insert a small sterile plastic tube (cannula) into each arm for the test; these will be used to give you the injection and infusion and to take blood samples from without having to use a needle each time. We ask that you lie on the bed through the test as the Arginine infusion lowers the blood pressure temporarily.

After the last blood test you will be able to have lunch. 2 hours after the test has finished you will be able to get up from the bed.

The test will take a full morning: you will be free to go home after lunch.

Is there any preparation for the test?

Please have nothing to eat or drink except water from midnight before the test. You SHOULD take all your regular tablets and medicines.

Are any drugs or medicines used?

You will be given an injection of GHRH. This is a natural hormone (chemical signal) produced by the hypothalamus. The hypothalamus is part of the brain which controls hormone function. GHRH stimulates growth hormone production

by the pituitary gland, which is a small gland beneath the brain. You will also be given an injection of arginine, a natural amino acid (the building blocks of proteins) that also stimulates growth hormone release.

Are there any risks or side effects?

The GHRH may make you flush. If this does happen it will only last a short time (less than five minutes). Some people experience tingling in the hands and feet, nausea or a strange taste sensation after the GHRH injection.

What happens during the test?

When you arrive on the investigations unit the nurses will admit you, check your blood pressure, temperature and pulse and will measure your height and weight. We weigh you so that we can work out the correct dose of GHRH and L-arginine to give you.

You will be given an injection of growth hormone releasing hormone (GHRH) followed by an infusion of 10% L-Arginine over 30 minutes.

We will take two blood samples before the injections are given and then we will take further samples at 30, 45, 60, 90, 120 and 150 minutes after the start of the L- Arginine infusion. We will monitor your blood pressure at regular intervals throughout the test.

What happens after the test?

We send your blood samples to the laboratory for analysis. Your endocrinologist will discuss the results with you at your next clinic appointment.

Are there any alternatives to the test?

NICE guidelines state that patients must have a growth hormone stimulation test to qualify for GH treatment.

The insulin stress test is also used but it can not be used in older people or in people who have had previous brain injury. The GHRH arginine test is safer in these cases. Your doctor will have taken your situation into consideration before recommending this test.

Who can I contact for more information?

Charing Cross and Hammersmith Hospitals: Endocrine Specialist Nurse 020 331 11319
St Mary's Hospital: Metabolic Day Ward 020 331 21187