Glucagon Stimulation Test (GST)

Your doctor has recommended that you have a glucagon stimulation test to check if your body is producing enough of the growth hormone and cortisol (if required) hormones.

The growth hormone is produced by the pituitary gland (a tiny gland, the size of a pea, found at the base of the brain). This hormone is responsible for controlling growth and metabolism in childhood. Growth hormone is also produced in adulthood and is important for maintaining muscle and bone mass and affects the levels of body fat. The hormone also controls energy levels, memory and your general feeling of well-being.

Cortisol is produced by the adrenal glands which sit above the kidneys. Cortisol production is controlled by the pituitary gland. This vital hormone is responsible for enabling your body to respond to stress and illness. Cortisol also regulates your immune system, blood pressure and blood sugar levels.

Preparing for your test

- You need to fast from midnight the night before your test but you can drink water.
- If you are taking steroid medications orally (via the mouth) (e.g. hydrocortisone, plenadren, prednisolone or dexamethasone), you need to contact us on the number below to discuss if you can continue taking them.
- If you are using steroid creams or inhalers, please contact us for further instructions as you may need to stop using these medications for a short time if possible.
- You can take all your other regular medications. Please bring all of your medications with you (including your steroid tablets if you are taking any).
- The test will last for at least 4 hours.
- Please come to the Endocrine Day Case Unit at 08:30am on the morning of the test.
- Children are advised not to attend. However, if this poses a particular problem for you please discuss this with us.

What will happen during your test?

- A doctor or nurse will explain the test to you.
- You will need to lie down on a bed for the duration of your test.
- A nurse will place a cannula, which is a small tube used to take blood samples, into a vein in your arm.
- Blood samples will be taken to measure your growth hormone, cortisol and sugar levels at the beginning of the test.
- The nurse will then give you glucagon injection into the muscle in your arm.
- The glucagon will stimulate growth hormone and cortisol productions in your body.
- The nurse will take blood samples every half an hour for up to three hours.
- Once the test is completed, the nurse will remove the cannula.

- You will be offered something to eat and drink after the test.
- The nurse will check your blood sugar, blood pressure and heart rate before sending you home to ensure that you are safe to go home.
- You are allowed to drive after the test.

Are there any risks with this test?

Some patients may experience headaches, nausea, and rarely vomiting, during the test. This is temporary and most patients will recover at the end of the test. However, if you are still feeling unwell at the end of the test, you will be able to stay in the department until the endocrine team is happy for you to go home.

Is there an alternative test?

This test is the preferred test for assessing your growth hormone and cortisol response. However, if you are unable to have this test, your endocrine doctor will ask for an alternative which may be an arginine stimulation test.

What will happen after your test?

- You will be able to take your medication as usual immediately after the test.
- The result of your test will be reviewed by the endocrinology doctor and this can take up to 4 weeks.
- You do not have to contact the department for your test result as you will be contacted directly if necessary.
- Your doctor will also be informed of the result of your test.
- If necessary, you will be called back into the clinic to discuss the result especially if you need to start on any treatment.
- Sometimes, it is also necessary for us to contact you by telephone, so please provide us with your home and mobile telephone numbers when you come in for your test.

Please remember the timing of your endocrine test is important so please report directly to the unit before 08.30am. If you are unable to keep your appointment, please contact the department and we will try to rearrange it for you.

Contact Details

Queen Elizabeth Hospital Birmingham
- Email (preferred method): **EndocrineSecretaries@uhb.nhs.uk**

- Phone: 0121-371-6950
(we will aim to return telephone call within 3-5 working days)

Birmingham Heartlands, Solihull and Good Hope Hospitals
-Email (preferred method): **EndocrineNursesHGS@uhb.nhs.uk**
- Phone: 0121-424-2487
(we will aim to return telephone call within 3-5 working days)

Accessibility

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