Welcome to the Endocrine Unit
☎ 0161 446 3479

Information sheet (4)

Glucagon stimulation test

Your doctor has recommended that you have a glucagon stimulation test to check if your body is producing enough cortisol (this is your body’s natural steroid hormone) and growth hormone.

Cortisol is produced by the adrenal glands which sit above the kidneys. Cortisol production is controlled by the pituitary gland which is a tiny gland underneath the brain. The pituitary gland produces a hormone called ACTH (adrenocorticotropic hormone). This hormone travels through the blood stream to the adrenal glands and stimulates them to make cortisol. Low cortisol levels can indicate a problem with either the pituitary gland or the adrenal glands.

Cortisol is a vital hormone which is responsible for enabling your body to respond to stress and illness. Cortisol also regulates your immune system, blood pressure and blood sugar levels.

Growth hormone is produced by the pituitary gland. 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. Growth hormone also controls energy levels, memory and your general feeling of well-being.

Preparation for the test

- You may need to stop oestrogen therapy including the contraceptive pill and HRT for 6 weeks before your test as they can affect your results. If you are stopping the contraceptive pill you must use alternative contraception if you wish to avoid pregnancy. Please talk to your endocrine doctor.

- If you are taking steroid tablets you will need to miss your dose in the evening before your test and on the morning of your test. This must be discussed with your endocrine doctor first. Please call the Endocrine Unit ( 0161 446 3479 ).

- If you are using steroid creams or inhalers please contact the Endocrine Unit for further instructions as you may need to stop using these medications for a short time if possible.

- You can take your other regular medication. Please bring all your medication with you.

- You need to fast from midnight the night before your test but you can drink water.

- You will be able to drive home.
What will happen during the test?

- A doctor or nurse will explain your test to you and will ask you to sign a consent form if you agree to have the test and understand the reasons for having it.
- You will need to lie down on a bed for the duration of your test. You will have an ECG (a heart tracing test which reads the rate and rhythm of your heart).
- 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 glucose levels. The nurse will then give you an injection of a hormone called glucagon into a muscle in your buttock. Glucagon occurs naturally in the body. It raises blood sugar and stimulates insulin production. This will stress your body and should stimulate growth hormone and cortisol production.
- The nurse will take blood samples to measure your growth hormone, cortisol and glucose every half an hour for three hours. Once the test is completed the nurse will remove the cannula and give you something to eat. You will need to stay on the Endocrine Unit for one hour after the test for the nurses to monitor you. You will then be able to go home.

Are there any risks with this test?
The known side effects associated with this test are headaches and nausea and rarely, vomiting.

Is there an alternative test?
There are two other tests that can be used for assessing your growth hormone and cortisol response, the insulin tolerance test and the Arginine stimulation test.

It is often necessary for two different growth hormone stimulation tests to be performed. So once your results have been reviewed by the endocrine team you might be asked to come for a second test.

Your results will be reviewed by the Endocrinology doctors. We will inform you and your GP of your results and any changes to treatment or medication by letter. 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.

If you have any questions about your test or results please contact the Endocrine Unit.

The timing of endocrine tests is important so please attend at the time specified on your appointment letter. If you are unable to keep your appointment please contact the department and we will rearrange it for you.