Insulin tolerance test

Why do I need this test?

Your doctor has recommended an insulin tolerance test to check whether your body produces enough growth hormone and, if required, cortisol.

Growth hormone

Growth hormone is produced by the pituitary gland, a tiny gland beneath the brain. It helps control growth and metabolism during childhood.

In adulthood, growth hormone helps maintain muscle and bone mass and affects body fat levels. It also helps control energy levels, memory and your general sense of wellbeing.

Cortisol

Cortisol is produced by the adrenal glands, which sit above the kidneys. The pituitary gland controls its production.

This vital hormone helps your body respond to stress and illness. It also regulates your immune system, blood pressure and blood sugar levels.

Preparation for your test

- You need to fast from midnight the night before your test (water is allowed)
- If you are taking steroid medications orally (e.g. hydrocortisone, plenadren, prednisolone or dexamethasone) and oestrogen therapy (including contraceptive pill and HRT), you need to contact us on the number below to discuss if you can continue taking them
- You can take all your other regular medications. Please bring all of your medication with you when you attend for your test
- If you are intending to come by car, we would recommend that you ask someone to drive you as it is not advisable for you to drive for at least 2 hours after your test
- The test will last for at least 4 hours
- Please come to Endocrine Day Case Unit at 08:30am on the morning of the test
- Children are not advised 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. Your heart rate, oxygen level and blood pressure will be monitored throughout the 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 sugar levels at the beginning of the test
- The nurse will then give you insulin through the cannula into your vein
- The insulin will cause your blood sugar level to drop which should stimulate growth hormone and cortisol productions in your body
- The nurse will monitor your blood sugar levels closely throughout the test. Once your blood sugar drops to a low enough level, you will be given something to eat and drink to bring your levels back up
- The nurse will take blood samples every half an hour for up to two hours
- Once the test is completed, the nurse will remove the cannula
- You will need to stay in the Endocrine Unit for up to two hours after the test for the nurses to monitor you. You will then be able to go home
- It is not advisable for you to drive for 2 hours after the test

Are there any risks with this test?

- There are risks associated with this test. If your blood sugar levels are very low, you may feel hot, sweaty, light-headed, shaky and tired
- You might feel that your heart is racing
- Very rarely, this test can cause fits. It is important that you tell your endocrine doctor before you come for your appointment if you have ever had a fit or blackout or if you have a history of heart problems

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 because you have a history of epilepsy or heart problems, your endocrine doctor will ask for an alternative test to be performed. This might be a glucagon stimulation test or an arginine stimulation test.
- It is often necessary to perform two different growth hormone stimulation tests. When your results have been reviewed by the endocrine team, you might be asked to come back for a second 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
- 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 ward 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): EndocrineNurses@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): EndocrineCNSreferral@heartofengland.nhs.uk
Phone: 0121-424-2487
(we will aim to return telephone call within 3–5 working days)

Please use the space below to write down any questions you may have and bring this with you to your next appointment.

Queen Elizabeth Hospital Birmingham

Mindelsohn Way, Edgbaston
Birmingham B15 2GW
Telephone: 0121 627 2000

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