

Insulin stress test (insulin tolerance test)

Department of Endocrinology

Your doctor has recommended that you take this test to help with the diagnosis and the management of your condition. Please would you read this carefully and ask us about anything that is not clear or if you would like more information.

What is the purpose of the test?

This test will tell us if your pituitary gland (at the base of the brain) is producing sufficient growth hormone, and/or properly regulating your production of cortisol (a natural steroid hormone or chemical signal).

In children, growth hormone is important for growth and bone strength. In adults, a lack of growth hormone sometimes reduces their quality of life. It may also affect their body composition (the amounts of fat and muscle in the body), with a tendency to have more fat and less muscle. NICE (the National Institute of Clinical Excellence) have issued guidelines about GH treatment, and specified that it should only be given to patients who meet certain criteria.

Cortisol is produced by the adrenal glands, which are just above the kidneys, in response to instructions from the pituitary gland, which is a small gland beneath the brain. A problem with either of these glands can result in low cortisol levels. Cortisol has many vital roles in maintaining normal healthy functioning, and is a very important part of the response to 'stress' of any kind, including other illnesses.

How long will the test take?

The test will take a full morning. After lunch you will be free to go home. We advise you not to drive until two hours after the test has finished.

Who will carry out the test?

The test will be carried out by an endocrine specialist nurse and a doctor.

What will I have to do?

Please have nothing to eat or drink except water for 10 hours before the test. You should have a discussion with your endocrinologist or

endocrine specialist nurse before the test, who will advise you about whether or not to take your regular tablets and medicines on the morning of the test.

Is any drug or medicine used during the test?

You will be given an injection of insulin. This is a natural hormone used to treat patients with diabetes. In this test insulin is used to make your blood sugar levels fall lower than normal for a short time. This is a stress for your body and should stimulate a growth hormone and cortisol response.

What will happen during the test?

We will weigh you so that we can work out the correct dose of insulin for you. You will have (or have had previously) an ECG (heart tracing) to check that this is normal. The doctor or nurse will use a needle to insert a small plastic tube into a vein in your arm. We will use this to take blood samples and to give you the injections. After we have taken the first blood samples, we will give you the injection of insulin. We measure your response to the test through blood samples that we will take over the next two hours.

What are the possible risks or side-effects of the test?

When your blood sugar levels fall lower than normal you are likely to experience some side-effects. You may feel a bit light headed, dizzy, shaky, flushed, sweaty or notice a racing heart. Some people find this quite uncomfortable but others say that it is not too bad. The side effects should only last a short time (up to 15 minutes). You may feel a bit tired after the test. Very rarely the test may cause a faint or a fit: the doctor and nurse have all the necessary treatments available in the unlikely event of this occurring.

What are the alternatives to the test?

There are other tests that can be used instead of the insulin stress test: your endocrinologist will have considered the available options and will usually discuss this with you before recommending this test. If you have further queries, please contact the endocrine specialist nurse.

What will happen after the test?

You will have lunch and your blood sugar will be checked to be sure it is normal. You will then be free to go home, but we advise you not to drive until two hours after the test has finished. We will send your blood samples to the laboratory for analysis. When your results are available, either the endocrine specialist nurse or your endocrinologist will discuss these with you. This will usually be at your next clinic appointment. They will advise you about whether you need growth hormone (and/or cortisol) hormone replacement therapy.

Who do I contact if I have any questions?

Royal Sussex County Hospital
Endocrine specialist nurse

01273 696955
Extension 4379

Princess Royal Hospital, Haywards Heath
Endocrine specialist nurse

01444 441881
Extension 5660

If you have any urgent or emergency questions then your GP can advise you or they will contact the hospital on your behalf.

Patient self-help groups and further information:

The Pituitary Foundation

Website: www.pituitary.org.uk

Support and Information Helpline: 0117 370 1320

Monday-Friday 10am-4pm

Pituitary Foundation Endocrine Nurse Helpline: 0117 370 1317

providing medical information and support

Mondays 10am -1pm, 6pm - 8pm; Tuesdays 11am - 2pm;

Wednesdays 10am -12 noon, 6pm - 8pm.

Text Support - 07786 202 249 Ask questions via text message and the Helpline team will respond within 24 hours (except at weekends and Bank Holidays). The reply to you will appear as a text from 'Pituitary' on your mobile phone.

© Brighton and Sussex University Hospitals NHS Trust

Disclaimer

The information in this leaflet is for guidance purposes only and is in no way intended to replace professional clinical advice by a qualified practitioner.

Ref number: 212.3

Publication Date: September 2019

Review Date: September 2021

