

Information for patients and carers

Insulin Tolerance Test

Endocrinology

A decorative graphic at the bottom of the page consisting of three overlapping, wavy bands of blue color, transitioning from a lighter blue at the top to a darker blue at the bottom.

What is an Insulin tolerance test?

This is a diagnostic test to assess if your pituitary gland is producing sufficient amounts of growth hormone and/or regulating your production of cortisol.

Why do we need growth hormone in adulthood?

Growth hormone (GH) controls the amount of fat, muscle and water present in the body. Bone structure and heart function are also influenced by GH. Our general well-being is also thought to be controlled by GH.

Why do we need cortisol?

Cortisol is one of the body's main steroid hormones which is vital for life. It enables us to cope with stresses such as illness, infection, surgery/traumas. It also regulates blood pressure, the body's fluid balance and metabolises fats, carbohydrates and proteins.

Preparation for the test

You must have nothing to eat or drink except water from midnight prior to your test the following day.

If you are on replacement steroid tablets you may be asked to stop taking these after your morning dose the day before your test is scheduled. This will be the case if we are testing the regulation of cortisol production by the pituitary, but if we are just testing the production of growth hormone you should continue with your normal steroid treatment.

You will need to have an ECG (heart rhythm tracing).

What the test involves

The test starts at 9am as cortisol levels are generally higher in the morning. The nurse will need to insert a cannula (narrow tube) into your arm so that blood tests can be taken, and the Insulin can be given through this. A first blood test is taken approximately 30 minutes after the cannula has been inserted. This is because cortisol levels will be

slightly higher immediately following insertion of the cannula. A dose of Insulin will then be given through the cannula which will make your blood sugar drop quickly (hypoglycaemia). Samples of blood will then be obtained from the cannula.

Once the nurse is certain adequate hypoglycaemia has been achieved diet and fluid will be offered. The test will take approximately 3 hours. If the initial dose does not lower blood sugar levels adequately a second dose of Insulin is required. This will mean taking additional blood samples and subsequently the test will take slightly longer than normal. Very occasionally the usual doses of insulin fail to lower your blood sugar adequately and a second test needs to be arranged at a separate time.

You will need to recommence previous steroid therapy on completion of the test.

Side effects

During the test you may feel

- Lightheaded
- Shaky
- Sweaty and may notice a faster heartbeat
- Sleepy

These side effects are normal symptoms of hypoglycaemia and should only last a short time (approx. 15 minutes). A nurse will be with you throughout to reassure you.

Contact details

Should you require further advice or information please contact

Endocrine Specialist Nurse: **01772 523533**

Sources of further information

www.lancsteachinghospitals.nhs.uk

www.nhs.uk

www.accessable.co.uk

www.patient.co.uk
www.lancsteachinghospitals.nhs.uk/veteran-aware
www.pituitary.org.uk
www.labtestsonline.org.uk

Lancashire Teaching Hospitals NHS Foundation Trust is not responsible for the content of external internet sites.

All our patient information leaflets are available on our website for patients to access and download:

www.lancsteachinghospitals.nhs.uk/patient-information-leaflets

Lancashire Teaching Hospitals is a smoke-free site. Smoking is not permitted anywhere on any of our premises, either inside or outside the buildings. Our staff will ask you about your smoking status when you come to hospital and will offer you support and advice about stopping smoking this will include Nicotine Replacement Therapy to help manage your symptoms of withdrawal and the opportunity to speak to a nurse or advisor from the specialist Tobacco and Alcohol Care Team. If you want to stop smoking, you can also contact Smokefree Lancashire on Freephone **08081962638**

**Please ask a member of staff if you would like help in understanding this information.
This information can be made available in large print, audio, Braille and in other languages.**

Department: Endocrinology
Division: Medicine
Production date: February 2025
Review date: February 2028
JR 1270 v1