

Insulin Tolerance Test

What is an insulin tolerance test?

This test has nothing to do with diabetes. It will determine if your body is able to make enough growth hormone and cortisol in response to stress. A hormone is a chemical made by certain cells in the body and released into the bloodstream to send a message to another part of the body. When things are working normally, your pituitary gland (a small gland that lies just under the brain) produces several hormones. During the insulin tolerance test, your body is put into a state of hypoglycemia (low blood sugar) to create stress so that your body's normal hormonal response can be tested. The test will identify if the pituitary gland is producing sufficient growth hormone, and/or properly regulating your production of cortisol (a natural steroid hormone).

How is the test performed?

An appointment will be scheduled for you to have the test performed. You will be provided with the location and arrival time. Please plan for at least 5 hours of testing.

An intravenous (IV) cannula will be inserted into a vein in one of your arms and will remain there for the duration of the test. All of your blood samples will be drawn through this catheter, so you will not require any further needle pokes. You will also have your blood sugar checked prior to the start of the test using a glucometer. This will be done at regular intervals during the test, to ensure your safety and to make sure your blood sugar level fall enough to make the test valid. If your blood sugar does not fall to a level ordered by your doctor, the test results may not be valid and the test will need to be repeated.

The nurse will also be checking for signs of low blood sugar such as sweating, fatigue, blurred vision, weakness etc., which are also needed for the test to be successful.

Once your first blood tests are drawn, the nurse will administer insulin through the IV to lower your blood glucose. You will likely start to feel the symptoms of low blood sugar after about 20-30 minutes. These symptoms will be strongest for about 15 minutes. Slowly, your body will begin to recover and you will gradually feel better.

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During this time, you must stay awake and be assessed by the nurse as part of maintaining your safety. Blood samples will then be taken at regular intervals for approximately two hours. For some people, blood sugar levels increase slowly and the nurse may need to give you some juice to help boost your blood sugar. Otherwise, you will not be able to eat or drink until the test is completed.

Are there any risks or side effects to this test?

As with any blood test or IV insertion, you may have some bruising or redness at the site where the catheter was inserted. There is also a very small risk of infection.

Your endocrinologists will talk to you about the risks of this test. You may experience symptoms such as sweating, shakiness, hunger, dizziness or sleepiness when your blood glucose levels become low. These symptoms will resolve within the first hour of the test as your blood sugar rises. The insulin only acts to lower your blood sugar and once it rises, these symptoms will not start again.

How do I prepare for the test?

You will need to fast (no food or drinks other than water) after 10:00 pm the night before your test unless otherwise directed by your doctor. If your doctor has given you instructions on which medications to take or not take, please follow this advice carefully.

Bring your daily dose of medications to the appointment in case appointment takes longer than expected.

Please bring a snack to eat once the test is completed.

You will need a driver to take you home after the test as you may feel quite tired.

If desired, you can bring a change of clothes in case you are damp after the test due to sweating.

What should I do if I need to cancel?

If you need to cancel your appointment, please call 519-646-6000 ext. 64424 and state your name and test date. It's important to know that there may be a delay in rescheduling your appointment as the availability of test times are limited. If you need to cancel, we ask that you call as soon as possible.