

Glucagon Growth Hormone Stimulation Test

Background

Growth hormone is made and released by the pituitary or master gland of the body. This happens in little bursts over 24 hours, but mainly at night. Some substances, such as GLUCAGON*, cause the pituitary gland to make and release growth hormone. The growth hormone can then be measured in the blood to see how much your child can make.

Key points

- Your child will be able to have a light breakfast (either juice OR toast OR glass of milk) at 6am
- Your child can drink water
- Your child will need to fast for 6-8 hours before the test
- Your child will stay fasting until the end of the test
- If your child is unwell (fever, vomiting or diarrhoea), please phone the Day Treatment Unit on 6456 3772 to cancel and rebook.

The test will be arranged for first thing in the morning. Then your child will fast while awake for as short a time as possible. The fasting time may vary. The fasting time will have been discussed with you by your doctor.

Arrival

Please go to the Day Treatment Unit. It is on the first floor at Clinic E. Take the Yellow or Pink lifts.

The Glucagon Growth Hormone Stimulation Test

Once admitted a local anaesthetic cream will be applied. This cream is applied to your hand and/or inner elbow. This cream will numb the skin. This cream takes about an hour to work. An intravenous line can then be put in without causing any pain.

A needle is used to insert the intravenous cannula. Once in the vein the needle is taken out. A plastic tube is left lying in the vein. This plastic tube should not cause any pain. Once in, it stays in for the whole test.



At the start of the test a baseline blood sample is taken. A blood sugar level is measured straight away on the ward glucose meter. 30 minutes later a baseline blood sample is taken for growth hormone and another blood sugar level.

Glucagon is then given by injection using a fine needle into the fat or muscles of the thigh. Blood samples are taken through the plastic tube every 30 minutes for three hours after this injection.

Each sample is later sent to the laboratory for growth hormone levels** but also checked immediately in the ward for blood sugar levels. Possible side effects of glucagon are:

- a drop in blood sugar level
- nausea
- vomiting
- abdominal pain.

If the blood sugar level drops below normal, this will be immediately treated. The test will then continue. When the last blood sample for the test has been taken, your child can have something to eat and drink.

Blood sugar levels will continue to be measured for two hours after the test. If these are all normal and your child is feeling well, the intravenous line is taken out and your child can go home.

*Glucagon is a hormone that is found naturally in the body. It is made and released by the pancreas. It is also man-made and used as a medication to treat low blood glucose levels. However, it can sometimes cause low blood glucose levels. This is why blood glucose levels are checked regularly during the test.

** Sometimes your doctor may request that the hormone cortisol also be measured during the glucagon stimulation test. It has been shown that glucagon causes cortisol as well as growth hormone to be made and released. Each blood sample is then sent to laboratory for growth hormone as well as cortisol measurement. Cortisol is secreted normally by the adrenal gland, especially in times of physical stress (illness/injury).

Results

The results will be sent to your child's doctor in approximately 2-3 weeks. You will receive these results at your next Endocrine Clinic or private endocrine appointment, or your child's doctor may phone you.

This document can be made available in alternative formats on request for a person with a disability.

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Government of **Western Australia**
Child and Adolescent Health Service

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