

GROWTH HORMONE SUPPRESSION TEST - ADULTS

INTRODUCTION

This test is useful in confirming the presence of active acromegaly or gigantism, particularly in the early stages. In these conditions the normal suppression of growth hormone (GH) by food or glucose does not occur. Although the test appears similar to a full Glucose Tolerance Test the timing of samples are different and additional samples are collected for GH analysis. Urine samples are not required.

CONTRAINDICATIONS AND SIDE EFFECTS

The patient should not be receiving GH stimulating drugs. The test should not be performed on seriously ill patients and those showing metabolic response to trauma and surgery.

PATIENT PREPARATION

This test is usually done as an outpatient procedure and should be preceded by an overnight fast of **10–16 hours**, during which water may be drunk. Smoking is not permitted during the test.

PROTOCOL

1. Take basal blood samples: **Glucose (minimum 1ml in fluoride tube – grey top)**
GH (minimum 5ml blood in SST tube – yellow top)
2. **Give the appropriate glucose load orally (see box below) over a period of 5 minutes.** Care should be taken to avoid vomiting. Timing of the test is from the beginning of the drink.

Glucose Load – given as Polycal solution

Adults: 113mL (140g) of Polycal = 75g glucose

Children: Polycal by weight (g) = child's weight (kg) x 3.27
(maximum dose is 113mL (140g) of Polycal)

3. Take further blood samples: **Glucose (minimum 1ml in fluoride tube – grey top)**
GH (minimum 5ml blood in SST tube – yellow top)
at 30, 60, 90, 120 and 150 minutes after glucose ingestion

Label the samples with patient details and actual time taken. When test is complete, send request form and samples to the Clinical Biochemistry Department as soon as possible.

N.B. AT THE END OF THE TEST THERE SHOULD BE 6 GREY TOP AND 6 YELLOW TOP TUBES

INTERPRETATION

Normal Response: serum GH should suppress to <1.25 ug/L (3 mU/L) at some point during the test.

In patients with active disease, there is a failure of a high basal serum GH to suppress and there may be a paradoxical rise. Often there is evidence of decreased glucose tolerance. A paradoxical rise in GH may also occur in renal failure and diabetes mellitus. Failure of suppression is sometimes seen in advanced liver disease, heroin addiction and anorexia nervosa.

CONTACTS

Basildon Hospital Biochemists: ext. 3025 / 3539

Southend Hospital Biochemist: ext. 8795

REFERENCES

Imperial endocrinology handbook. <http://imperialendo.co.uk/Bible2018.pdf>. (accessed 22/05/2018)