



Standard Operating Procedures Clinical and *Translational Research Center*

Title:	Oral Glucose Tolerance Test (O.G.T.T)		
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Purpose:

The Oral Glucose Tolerance Test (OGTT) is the gold standard test for the diagnosis of diabetes mellitus, although it is often possible to establish this diagnosis without resorting to a full OGTT. OGTT also allows the diagnosis of impaired fasting glycemia (IFG), impaired glucose tolerance (IGT) and gestational diabetes. IFG and IGT indicate increased cardiovascular risk.

A variation of the OGTT (collecting blood at half-hour intervals for both glucose and growth hormone) is considered the gold standard test for the diagnosis of acrogomaly. A prolonged OGTT may also be useful to demonstrate reactive hypoglycaemia. For details, please see the relevant protocols.

The glucose tolerance test measures the clearance of a standardized glucose load from the body.

Procedure:

1. The patient should eat a normal diet (>150 g carbohydrate daily) for at least 3 days prior to the test, and undertake normal physical activity.
2. Glucose for test for adults - **For the dose to be used in children, please see below.**
 - a. Glucose can be obtained from the hospital Pharmacy in sealed sterilized bottles containing 75 g anhydrous glucose in 200 ml water.

3. Instruct the patient to fast for at least 12 hours immediately prior to the test. Water as required is permitted.
4. Leave the glucose solution in the fridge overnight (4°C).
5. Check that the patient has fasted for 12 hours, and that he/she understands to remain in the waiting area for 2 hours without eating, drinking or smoking.
6. Collect a venous blood sample for glucose and label as specified by study protocol, include the sample date and time (or “fasting”).
7. Instruct the patient to drink the glucose solution over a maximum of 15 minutes (ideally within 5 minutes). Note the time.
8. The patient then remains seated within the waiting area for 2 hours, without eating, drinking or smoking. The test is invalid if these conditions are not imposed.
9. 2 hours after administering the glucose, collect a second venous blood sample for glucose. Label as specified by the protocol and included the sample date and time (or “2 hour”). Send both blood samples with a properly-completed Clinical Chemistry request form (requesting “OGTT” or “Glucose tolerance test”) to the Pathology Laboratory. The test is now complete.

Please ensure that all staff involved in undertaking any elements of this test have been provided with suitable training and are assessed to be competent.

Children

The most common form of diabetes in childhood is type 1 diabetes, and a formal glucose tolerance test is rarely necessary for the diagnosis of this. We expect the majority of these tests to be undertaken in secondary care. Where a glucose tolerance test is required, the dose of glucose is 1.75g/kg body weight, up to a maximum of 75g.

The ready reckoner below can be used to obtain the dose. Weigh the child after he/she has removed outdoor clothing and shoes. Deduct 1 kg from the observed weight to allow for the weight of other clothing, and then read the glucose load (g) from the table (e.g. a 14 kg child should have 25 g of glucose).

Wt (kg)	0	1	2	3	4	5	6	7	8	9
0		2	4	5	7	9	11	12	14	16
10	18	19	21	23	25	26	28	30	32	33
20	35	37	39	40	42	44	46	47	49	51
30	53	54	56	58	60	61	63	65	67	68
40	70	72	74	75	75	75	75	75	75	75

Complications

Patients may experience faintness, nausea and vomiting after taking the glucose solution. This is often more significant during pregnancy. If it is anticipated, Lucozade may be better tolerated. If necessary, take the patient to lie down.

If the patient vomits, the test cannot be completed unless this happens towards the end of the test (after 1 hour). If in doubt, discuss with Principal Investigator for the study.