

**Diabetes Mellitus- Traditional Diagnostic Criteria**

Diabetes is usually diagnosed by an HbA1c of 48 mmol/mol (6.5%) or more. The traditional criteria can be used when HbA1c measurements are not appropriate.

Traditional criteria:

In subjects with clinical symptoms of diabetes, by a single random plasma glucose  $\geq 11.1$ mmol/L or single fasting glucose  $\geq 7.0$ mmol/L

Or

In subjects that are asymptomatic of diabetes, by at least two elevated glucose results from 2 separate occasions-fasting samples recommended.

Fasting samples  $\geq 7.0$ mmol/L. Random samples  $\geq 11.1$ mmol/L

Or

On basis of OGTT result which also allows identification of people with impaired Glucose Tolerance who are at high cardiovascular risk.

**OGTT is indicated when an HbA1c test cannot be used to make the diagnosis and when results of fasting glucose tests are indeterminate 6.1-6.9mmol/L**

Interpretation of OGTT results

	Fasting plasma glucose (mmol/L)		2hr Venous Plasma Glucose (mmol/L)
Normal	$\leq 6.0$	and	$< 7.8$
Impaired Fasting Glycaemia (IFG)	6.1-6.9	and	$< 7.8$
Impaired Glucose Tolerance (IGT)	$< 7.0$	and	7.8-11.0
Diabetes	$\geq 7.0$	or	$\geq 11.1$

WHO guidance (1999) states that in cases with only a single elevated 2hr glucose results  $> 11.1$ mmol/L and fasting glucose  $< 7.0$ mmol/L the GTT should be repeated to confirm the diagnosis. The updated WHO 2006 guidance does not specify a need to repeat the test or clarify that this advice has been dropped.

Local consensus is that benefits in terms of vascular risk management retinal screening etc. outweigh the harms of diagnosing diabetes early in this group. The basis on which the diagnosis is made should be explained to patients and where there may be significant potential harm to an individual e.g. loss of employment due to diagnosis of diabetes the option to repeat the OGTT should be available.

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Date Approved by HERPC: Jan 2021 Review date: Jan 2024

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## ORAL GLUCOSE TOLERANCE TEST

### Equipments:

Rapilose OGTT solution – 75g glucose in 300ml \*

Alternatively use Polycal 113ml diluted with water to 200-300ml as per BNF

Drinking glass or cup

Measuring jug (only needed if using Polycal )

Phlebotomy equipment – 2 grey top fluoridated vacutainers

### Procedure:

It is important that the patient should have had normal meals during the last 3 days prior to the test and should not have been dieting.

The test should be performed in the morning after an overnight fast [8 - 14 hours].

The patient should be sitting quietly and must not smoke during the test procedure.

False results may occur if the patient has recently been ill or has had prolonged bed rest.

Water drinking is permitted during the period of fasting and during the test procedure

Explain the procedure to the patient.

Take the first fasting venous blood sample using a grey vacutainer and label it Number 1 FASTING with the patient's details and the time it was taken.

The patient then should drink the Rapilose (or diluted Polycal). It must all be drunk within a maximum of 5 minutes.

Ask patient to take a seat in the waiting room and remain seated for the next 2 hours.

Recall the patient just before the 2 hour follow up blood test is due.

Take the 2nd venous blood sample in a grey vacutainer exactly 2 hours after the Rapilose/Polycal was consumed. Label the second blood sample with number 2 and the patient's details, time it was taken. Note the time it was taken on the lab form.

**NB. If a patients vomits during the Oral Glucose test, ensure comfort and safety of the patient and advise them that the test will not continue that day.**

*\*Rapilose OGTT solution- 75g in 300ml. See BNF. NHS price £3.48*

### APPROVAL PROCESS

Written by:	Dr Jane Patmore August 2017, reviewed Jan 2021
Consultation process:	Dept. endocrinology
Approved by:	MMIG
Ratified by:	HERPC
Review date:	Jan 2024

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