

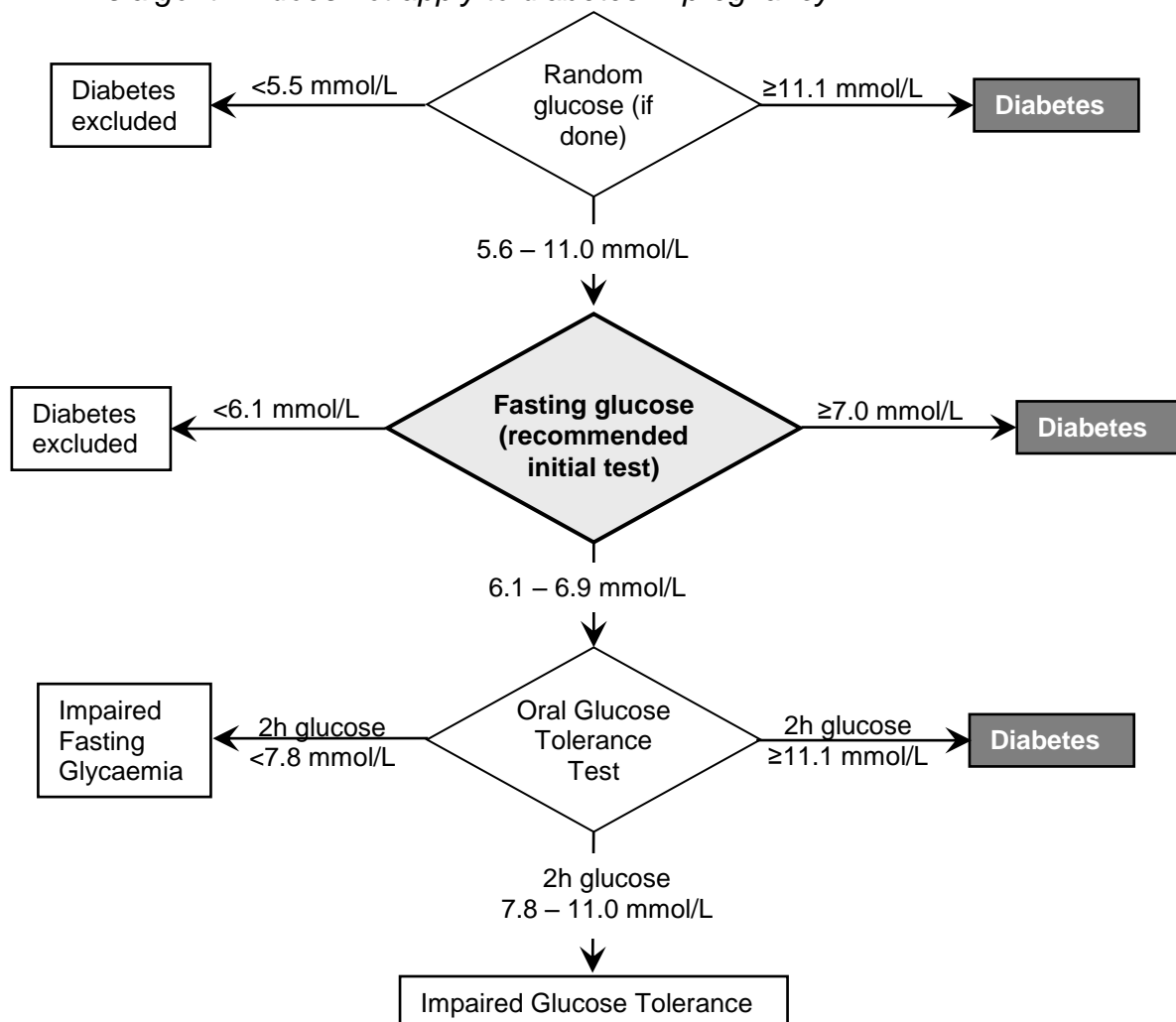
Clinical Guideline for DIAGNOSIS OF DIABETES MELLITUS

Diabetes mellitus can be diagnosed using either glucose or glycated haemoglobin (HbA1c). Glucose based diagnosis is possible in most cases and is the more cost effective diagnostic modality. HbA1c **may** be used in some patient groups, where hyperglycaemia is of more than three months' duration and in the absence of haematological factors that could affect HbA1c formation or measurement.

Diagnosis of diabetes must be based on **either** glucose **or** HbA1c **but not a combination of the two**

Diagnostic algorithm for glucose based diagnosis of diabetes mellitus and glucose intolerance (WHO 2006)

N.B. This algorithm does not apply to diabetes in pregnancy



- In the absence of classical symptoms, (thirst, polyuria and unexplained weight loss) at least two diagnostic glucose results on different days are essential.
- If discordant results are obtained, either fasting (if reliable) or 2h OGTT value may be diagnostic, but re-testing after an interval is recommended.
- Tests should not be carried out during intercurrent illness or periods of stress as this may result in false positive results.
- Impaired Glucose Tolerance and Impaired Fasting Glycaemia carry increased risk of progression to diabetes – recommended re-assess in one year.

Diagnosis of diabetes mellitus using HbA1c

HbA1c must **not** be used if hyperglycaemia has developed rapidly, for example:

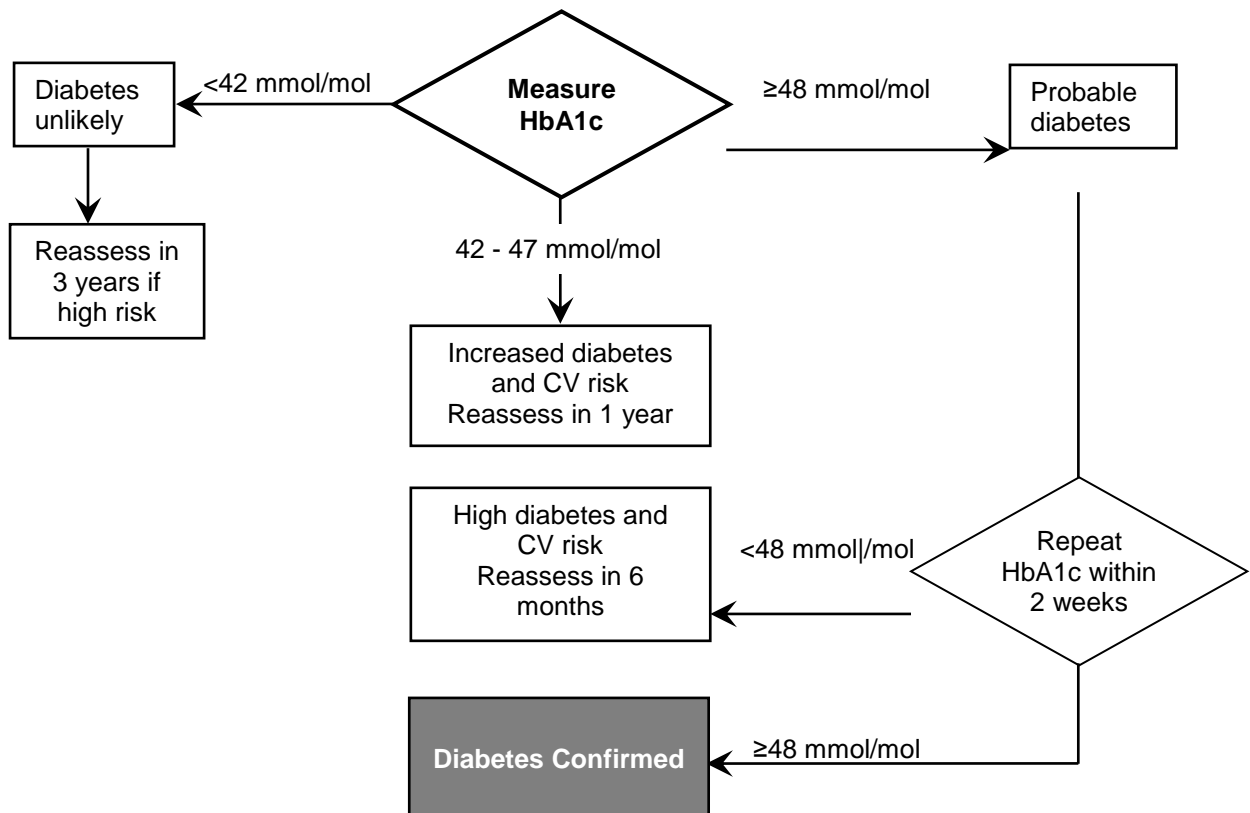
- Possible Type 1 diabetes
- Symptomatic children and young adults
- Symptoms less than three months
- Acutely ill patients
- Medication that may cause rapid rise in glucose e.g. corticosteroids, antipsychotics
- Acute pancreatic damage or pancreatic surgery

HbA1c must **not** be used in the presence of factors affecting HbA1c formation or measurement. These include:

- Iron and vitamin B₁₂ deficiency
- Haemolytic anaemias
- Administration of iron, vitamin B₁₂ or erythropoietin
- Chronic liver disease
- Chronic renal failure (CKD 4 and 5)
- Alcoholism
- Rheumatoid arthritis
- Splenomagaly or splenectomy
- Haemoglobinopathies
- Drugs that may affect erythrocyte lifespan e.g. antiretrovirals, ribavirin, dapsone

HbA1c must **not** be used to diagnose diabetes in pregnancy

Diagnostic algorithm for HbA1c based diagnosis of diabetes mellitus (WHO 2011)



- Repeat HbA1c is not necessary in patients with classical symptoms, (thirst, polyuria and unexplained weight loss).