

Summary - screening for type 2 diabetes

The unit of measurement for HbA1c changed in early October 2011 to mmol/mol. An HbA1c is the recommended diagnostic screening test for diagnosing diabetes. It should be measured by an accredited laboratory. Point-of-care assays are not sufficiently accurate at this time for use in diagnosis. If it is not possible to measure HbA1c, or there are concerns about its validity, then a fasting plasma glucose is recommended.

The diagnosis of diabetes is made on the basis of a laboratory measured HbA1c or venous plasma glucose measurements (see Table 1).

- In symptomatic individuals an HbA1c ≥ 50 mmol/mol (and, if measured, a fasting blood glucose ≥ 7.0 mmol/l or a random glucose ≥ 11.1 mmol/l) is sufficient to establish the diagnosis of diabetes.
- In asymptomatic individuals the same criteria apply but, to confirm the diagnosis of diabetes, a confirmatory test (preferably HbA1c) is needed on a separate occasion.
- Those with an HbA1c of 41-49 mmol/mol and, if measured, a fasting glucose concentration of 6.1 - 6.9 mmol/l are categorized as 'pre-diabetes' (also called 'dysglycaemia' or 'borderline diabetes'). Patients with values in this range should be advised on diet and lifestyle modification, and if over 35 years of age, have a full cardiovascular risk assessment and appropriate management. HbA1c measurement should be repeated after 6-12 months.
- A HbA1c of ≤ 40 mmol/mol should be repeated at the next cardiovascular risk reassessment interval. Cardiovascular risk should be assessed and treated as per National guidelines.

Meeting these diagnostic criteria should result in a clear diagnosis of diabetes. A full cardiovascular risk assessment and appropriate CV and glycaemic management should follow. Additionally entry into microvascular screening programmes (retinal photography, microalbuminuria, eGFR, foot checks) should then be commenced.

Table 1

What to do following a screening test for type 2 diabetes

Result	Action	Why
Symptomatic		
HbA1c ≥ 50 mmol/mol and, if measured, Fasting glucose ≥7.0 mmol/L Or Random blood glucose ≥11.1mmol/L	No further tests required	Diabetes is confirmed
Asymptomatic		
HbA1c ≥ 50 mmol/mol and, if measured, Fasting glucose ≥7.0 mmol/L Or Random glucose ≥ 11.1 mmol/L	Repeat HbA1c or a fasting plasma glucose	Two results above the diagnostic cutoffs, on separate occasions are required for the diagnosis of diabetes*
HbA1c 41-49 mmol/mol and, if measured, Fasting glucose 6.1–6.9 mmol/L	Advise on diet and lifestyle modification. Repeat the test after 6-12 months	Results indicate 'pre-diabetes' or impaired fasting glucose*
HbA1c ≤ 40 mmol/mol and ,if measured, Fasting glucose ≤6 mmol/L	Retest at intervals as suggested in cardiovascular risk factor guidelines	This result is normal

* When HbA1c and fasting glucose are discordant with regard to diagnosis of diabetes, repeat testing at an interval of 3-6 months is recommended. The test that is above the diagnostic cut point should be repeated – if the second test remains above the diagnostic threshold then diabetes is confirmed. If the second result is discordant with the first then subsequent repeat testing at intervals of 3-6 months is recommended. Patients with discordant results are likely to have test results near the diagnostic threshold.