



جامعة الإمام عبد الرحمن بن فيصل
IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY

مستشفى الملك فهد الجامعي
King Fahad Hospital The University

Diagnosis of diabetes



What are the important Definitions of diabetes diagnostic tests?

HbA1c:

A blood test which reflects the average levels of blood glucose over the previous two to three months in blood, most widely used test to monitor chronic glycemic control. It is used to diagnose diabetes and to monitor the efficacy of treatment.

Fasting Blood Sugar Test :

Blood test that measure the blood glucose after fasting (no caloric intake) for at least 8 hours.

Glucose Tolerance Test:

Blood test that measures blood sugar before (patient must fast for at least 8H) and after 2 hours of drinking a liquid containing glucose (75g of glucose in 250ml of water).



What are the important Definitions of diabetes diagnostic tests?

Random blood sugar test:

A blood test done to evaluate the level of glucose in blood at any point of time in a day.

Gestational diabetes:

A form of diabetes that is first detected during pregnancy. It usually occurs in the second or third trimester, in women who were not known to be diabetic before pregnancy. There is no known specific cause, but it is believed that the hormones produced during pregnancy reduces receptivity to insulin, resulting in high blood sugar. If not managed well it can develop into T2DM.



What are the normal diagnostic signs of diabetes?

HbA1c: < 5.7 %

Glucose tolerance test:

< 140 mg/dL

Fasting blood sugar test:

< 100 mg/dL



What are the diagnostic signs for pre-diabetes?

HbA1c: 5.7 to 6.4%

Glucose tolerance test:

140 to 199 ma/dL

Fasting blood sugar test:

100 to 125 ma/dL



What are the rates that must appear to diagnose diabetes?

- HbA1c: $\geq 6.5\%$
- Glucose tolerance test: >200 mg/dL
- Fasting blood sugar test: ≥ 126 mg/dL
- Random blood sugar test: ≥ 200 mg/dL with classic symptoms of DM.



What are the special tests for those expected to have type 1 diabetes?

✓ Autoantibodies screening test:

Most important antibodies to screen for:

- Islet cell cytoplasmic autoantibodies (ICA)
- Glutamic acid decarboxylase autoantibodies (GADA)
- Insulinoma-associated-2 autoantibodies (IA-2A)
- Insulin autoantibodies (IAA)

✓ Elevated ketones level (> 0.6 mmol/L) in urine (Ketones present B/C of breaking down fat for energy instead of glucose)



What are the special tests for those expected to have gestational diabetes?

Glucose Screening Test:

Blood test measuring blood glucose after 1 hour of drinking a liquid containing glucose. If result is higher than 140 mg/dL, you'll need to take a glucose tolerance test (previously discussed) to confirm the diagnosis.



Resources and references:

All illustrations used are from Canva.com

Review and audit:

The content of this booklet has been reviewed by
at King Specialists of Medical Laboratory Department
Fahd University Hospital.

Medical Laboratory Department

Health Awareness Unit
IAU-22-347



جامعة الإمام عبد الرحمن بن فيصل
IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY

مستشفى الملك فهد الجامعي
King Fahad Hospital The University