LANCET LABORATORIES
Rwanda

NOVEMBER 2023

DIABETIC PANEL OF TESTS

Compiled by: ICL Lancet Laboratories

Diabetic Panel is a series of blood test used to determine a person's average blood sugar. It is used to help diagnose diabetes. It can also be used to diagnose type 2 diabetes and pre-diabetes. Tests are recommended since early diabetes does not usually show symptoms.

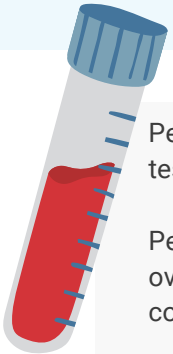
Blood Glycated Hemoglobin (A1C test)

Hemoglobin A1C is a blood test used to determine a person's average blood sugar over **a period of three months.** It is used to help diagnose diabetes. It can also be u**sed to diagnose type 2 diabetes and pre-diabetes**. It measures the percentage of blood sugar attached t**o hemoglobin, the oxygen carrying protein in red blood cells. This measurement can give a person a more accurate assessment** of how well they are managing their glucose levels because it is not based on single measurements taken at a specific time**.**

Key Indicators

- A blood sample will be taken after an overnight fast.
- A fasting blood sugar level less than 100 mg/ dL
- An A1C level of 6.5 percent or higher on two separate tests indicates diabetes.
- An A1C between 5.7 and 6.4 percent indicates pre-diabetes.
- Below 5.7 is considered normal.

The higher blood sugar levels, the more hemoglobin will have with sugar attached.



People with diabetes should receive regular hemoglobin A1C tests (Hba1c tests).

People who have risk factors for diabetes such as being overweight, or having a family history of diabetes should consider receiving periodic hemoglobin A1C tests (hba1c tests

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Monitoring/controlling Diabetes

- Patient Preparation: Overnight fasting is preferred.
- Preferred specimen(s) : serum or plasma in EDTA
- The normal fasting range for NEFA is approximately 0.1-0.9 mmol/l Random blood sugar test: A blood sample will be taken at a random time. Regardless of when you last ate, a random blood sugar level of 200 milligrams per deciliter (mg/dL) — 11.1 millimoles per liter (mmol/L) — or higher suggests diabetes.

Useful for monitoring of control of diabetes mellitus (serum-free glycerol is a very useful companion test in assessing diabetes). The correlation with insulin resistance and downstream cardiovascular risk may be a useful treatment aid in some patients.

Blood Glucose Test

Non-Esterified Fatty Acids Fibro Test is validated for the following diseases: If the A1C test results aren't consistent, the test isn't available, or in conditions that can make the A1C test inaccurate — pregnancy or presence of a hemoglobin variant, blood glucose tests are used to diagnose diabetes

- A blood glucose test measures the amount of glucose in the bloodstream. It is used to screen for diabetes and to monitor management/progress of an already been diagnosed diabetes.
- Blood glucose tests can be fasting or random. Fasting tests provide the most accurate results and are easier to interpret than random tests.
- NEFA: The Nonesterified Fatty Acids (Free Fatty Acids) assay is useful in evaluating lipolysis and fatty acid oxidation. Nonesterified Fatty Acids may be useful in evaluating patients with hypoglycemia and for nutritional assessment. Non-esterified fatty acids (NEFA) are molecules released from triglycerides by the action of the enzyme lipase and are transported in the blood bound to albumin.

They contribute only a small proportion of the body's fat, but provide a large part of its energy. Serum free fatty acids are increased in patients with uncontrolled type 2 diabetes mellitus and are an indicator of insulin resistance.

Measurement of NEFA is particularly important in diabetes where insulin deficiency results in the metabolism of fat. Levels are also frequently increased in obese patient. Elevated NEFA concentrations in obesity are thought to arise from an increased adipose tissue mass, which in turn leads to insulin resistance in insulin target tissues

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