

# DIAGNOSIS OF DIABETES

## (A) TYPE 1 DIAGNOSIS

Diagnostic tests include:

**1) Glycated hemoglobin (A1C) test.** This blood test indicates your average blood sugar level for the past two to three months. It measures the percentage of blood sugar attached to the oxygen-carrying protein in red blood cells (hemoglobin). The higher your blood sugar levels, the more hemoglobin you'll have with sugar attached. An A1C level of 6.5 percent or higher on two separate tests indicates diabetes.

If the A1C test isn't available, or if you have certain conditions that can make the A1C test inaccurate — such as pregnancy or an uncommon form of hemoglobin (hemoglobin variant) — your doctor may use these tests:

**2. Random blood sugar test.** A blood sample will be taken at a random time and may be confirmed by repeat testing. Blood sugar values are expressed in milligrams per deciliter (mg/dL) or millimoles per liter (mmol/L). Regardless of when you last ate, a random blood sugar level of 200 mg/dL (11.1 mmol/L) or higher suggests diabetes, especially when coupled with any of the signs and symptoms of diabetes, such as frequent urination and extreme thirst.

### 3. Fasting blood sugar test.

A blood sample will be taken after an overnight fast. A fasting blood sugar level less than 100 mg/dL (5.6 mmol/L) is normal. A fasting blood sugar level from 100 to 125 mg/dL (5.6 to 6.9 mmol/L) is considered prediabetes. If it's 126 mg/dL (7 mmol/L) or higher on two separate tests, you have diabetes.

If you're diagnosed with diabetes, your doctor may also run blood tests to check for autoantibodies that are common in type 1 diabetes. These tests help your doctor distinguish between type 1 and type 2 diabetes when the diagnosis is uncertain. The presence of ketones — byproducts from the breakdown of fat — in your urine also suggests type 1 diabetes, rather than type 2.

## After the diagnosis

i) You'll regularly visit your doctor to discuss diabetes management. During these visits, the doctor will check your A1C levels. Your target A1C goal may vary depending on your age and various other factors, but the American Diabetes Association generally recommends that A1C levels be below 7 percent, which translates to an estimated average glucose of 154 mg/dL (8.5 mmol/L).

ii) Compared with repeated daily blood sugar tests, A1C testing better indicates how well your diabetes treatment plan is working. An elevated A1C level may signal the need for a change in your insulin regimen, meal plan or both.

iii) In addition to the A1C test, the doctor will also take blood and urine samples periodically to check your cholesterol levels, thyroid function, liver function and kidney function. The doctor will also examine you to assess your blood pressure and will check the sites where you test your blood sugar and deliver insulin.

## (B) TYPE 2 DIABETES DIAGNOSIS

Type 2 diabetes is usually diagnosed using the glycated hemoglobin (A1C) test. This blood test indicates your average blood sugar level for the past two to three months. Results are interpreted as follows:

- i) Below 5.7% is normal.
- ii) 5.7% to 6.4% is diagnosed as prediabetes.
- iii) 6.5% or higher on two separate tests indicates diabetes.