Use of Glycated Hemoglobin (A1C) in the Diagnosis of Type 2 Diabetes Mellitus in Adults

Frequently Asked Questions

1. What is A1C?
A1C, or glycated hemoglobin, is a measure of a patient's blood glucose control over the previous 2 to 3 months.

2. Why has the Canadian Diabetes Association adopted A1C as a criterion for the diagnosis of diabetes?
There are many advantages of using A1C as a criterion for the diagnosis of diabetes.

- A1C at 6.5% or more places one at risk for diabetic eye damage (retinopathy)
- A1C is a continuous cardiovascular risk factor and a better predictor of macrovascular events than Fasting Plasma Glucose (FPG).
- A1C can be measured at any time of day and is more convenient than FPG or 2-hour oral glucose tolerance test (OGTT).
- A1C testing avoids the problem of day-to-day variability of glucose values because it reflects the average plasma glucose over the previous 2 to 3 months.

3. Are there any cases where A1C is not recommended?
A1C is not recommended for diagnostic purposes in children, adolescents, pregnant women or people with type 1 diabetes.

4. Are there any cases where A1C can be misleading?
Yes. There are a number of cases where A1C can be misleading.

- A1C can be misleading and should not be used as a diagnostic tool in individuals with various hemoglobinopathies, iron deficiency, hemolytic anemias, and severe hepatic and renal disease.
- A1C can be misleading in certain ethnicities. Studies show that African Americans, American Indians, Hispanics, and Asians have A1C values up to 0.4% higher than Caucasian patients.
- A1C values are also affected by age and rise by up to 0.1% per decade.

5. What was the previous A1C criterion for the diagnosis of diabetes?
Using A1C for diabetes diagnosis is a new concept. Previously, diabetes was only diagnosed based on glucose criteria.

6. What is prediabetes?

Prediabetes refers to blood glucose levels that are higher than normal, but not yet high enough to be diagnosed as type 2 diabetes (i.e. an FPG level of 7.0 mmol/L or higher). Individuals with prediabetes are at increased risk for developing diabetes in the future. The Association currently defines prediabetes as impaired fasting glucose (fasting glucose 6.1 to 6.9 mmol/L) or impaired glucose tolerance (2-hr value on a glucose tolerance test 7.8 to 11.0 mmol/L). The Association is currently evaluating the potential role of A1C for diagnosing prediabetes.