



Diabetes Resources

Practical Information for Nevada Health Care Professionals

A1C: An Update on Clinical Relevance

The Issue:

- ❖ The A1C remains the best way for clinicians to monitor the long-term blood glucose control of their patients with diabetes. It corresponds to the average glucose over a 3-month period.
- ❖ For patients with Type 2, every 1-point fall in A1C is associated with a reduction in relative risk for microvascular complications by 35%, diabetes-related deaths by 25%, and MI by 14%.
- ❖ For patients with Type 1, every 1-point fall in A1c is associated with a reduction in relative risk for retinopathy by 38%, nephropathy by 25%, and neuropathy by 14%.
- ❖ Reduction in risk for macrovascular complications is not as clearly correlated with A1C.
- ❖ Many people with DM don't understand A1C. Some providers don't use the term "A1C." Referring to it as "the test that gives your average sugar over the past three months" may be more helpful. According to a recent study only 25% of people with diabetes know their A1C.

The Current Clinical Recommendation:

The *iDo Adult Diabetes Practice Guide* recommends that all people with diabetes have an A1C test 2- 4 times per year.

- ❖ The general A1C goal for non-pregnant adults is <7%. Lowering A1C to 7% or below has been shown to reduce microvascular and neuropathic complications. Evidence suggests that lowering A1C to 7% or below in the years soon after diagnosis of diabetes is associated with a long-term decrease in risk for macrovascular disease.
- ❖ A lower A1C goal may be appropriate for selected individual patients if this can be achieved without significant hypoglycemia. Studies suggest a small, but incremental reduction in microvascular complications with A1C closer to normal.
- ❖ Less stringent treatment goals may be appropriate for patients with history of severe hypoglycemia, patients with limited life expectancies, very young children or older adults, and individuals with comorbid conditions.

Estimated Average Glucose (eAG): A New Way to Talk to Patients about DM Management

The American Diabetes Association (ADA) recommends the use of a new term in diabetes management, estimated average glucose, or eAG. Health care professionals can now report A1C results to patients using the same units (mg/dl or mmol/l) that patients see routinely in blood glucose measurements.

To access the ADA's Glucose Calculator, visit <http://professional.diabetes.org/glucosecalculator.aspx>.

A1C	eAG	
	mg/dl	mmol/l
6	126	7.0
6.5	140	7.8
7	154	8.6
7.5	169	9.4
8	183	10.2
8.5	197	11.0
9	212	11.8
9.5	226	12.6
10	240	13.4

Source: Diabetes Care, vol. 33, supplement 1, January 2010 s47.

Resources for Clinicians

The following resources are FREE and available to the public.

How to Interpret A1C—A1C is the most important indicator of glucose control in diabetes, but it can be difficult to interpret the clinical relevance of an A1C value. The goal is an A1C <7.0%, but do you know why? Did you know an A1C level of 9.0% equates to an average glucose level of 212 mg/dl? Do you know how to interpret the A1C when patients have repeated episodes of hypoglycemia or when they are anemic? “How to Interpret the A1C” will help answer those questions and will show you how A1C levels relate to average blood glucose levels and clinical complications. This chart may help clinicians explain the importance of A1C to their patients by relating A1C to “average sugar level.”

A1C Tool for Patients—The National Institutes of Health has available excellent patient education information that explains A1C in simple terms. The information can be downloaded free in both English and Spanish from the National Institutes of Health National Diabetes Education Program website http://ndep.nih.gov/media/knowNumbers_Eng.pdf.

A1C Analyzers for Office or Home Use—It is possible to perform A1C testing in the office to make immediate diabetes management adjustments during the patient visit. In-home A1C testing is also available, although its role in improving diabetes outcomes is unknown. The American Diabetes Association takes no position on in-home testing. If your patients use in-home testing, you may wish to encourage them to discuss the results with you.

- ❖ To review different manufacturers of A1C analyzers for office or home use there is a website that compares A1C Analyzers. Go to: Hemoglobin A1C Analyzers - Diagnostics Product Matrix - Medcompare to review current products on the market for office use.
- ❖ Per the Medcompare website only Bayer Diagnostic offers a combination analyzer that gives both A1C and microalbumin/creatinine test results. www.medcompare.com/matrix/531/hemoglobin-a1c-analyzers.html

Point-of-care A1C testing should not be used for diagnosing diabetes due to insufficient accuracy. iDo does not endorse any particular manufacturer. Check with individual health plans for information on insurance coverage.

Source: Diabetes Care, Volume 33, Supplement 1, January 2010

Websites—The editorial committee has identified websites that you may find informative:

- ❖ National Diabetes Education Program: www.ndep.nih.gov
- ❖ American Diabetes Association: www.diabetes.org
- ❖ National Institutes of Health: www.diabetes.niddk.nih.gov
- ❖ American Heart Association, Heart of Diabetes Program: www.americanheart.org/diabetes
- ❖ American Diabetes Association Position Statements: Standards of Medical Care in Diabetes - 2010 (pgs. S11-14 screening and diagnosis): <http://care.diabetesjournals.org>
- ❖ Diagnosis and Classification of Diabetes Mellitus (pgs. S62-9): <http://care.diabetesjournals.org>
- ❖ International Expert Committee Report on the Role of the A1C Assay in the Diagnosis of Diabetes (pgs. 1327-34): <http://care.diabetesjournals.org>
- ❖ Editorial: Redefining the Diagnosis of Diabetes Using Glycated Hemoglobin (pgs. 1344-5): <http://care.diabetesjournals.org>

Please see iDo Adult Diabetes Practice Guide at www.snmic.com/ido-improving-diabetes-obesity-outcomes/ for additional clinical management recommendations.

702.743.1964
6830 West Oquendo Road, Suite 102 Las Vegas, NV 89118