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# Diabetes Resources

## Practical Information for New Mexico Health Care Professionals



A quarterly publication for clinicians caring for people with diabetes - Vol. 15 No. 3, 2011

In each issue of **Diabetes Resources** we have provided specific information about management for diabetes, including important tests and resources to help reduce complications associated with the disease. Information is included about the ABCs of diabetes: **A1C testing 2-4 times per year, Blood pressure screening at every visit, and annual Cholesterol testing. Additional clinical information is also provided. A dilated eye exam, sensory foot exam and screening for kidney disease are each recommended annually. Attention to these risk factors reduces the chance for cardiac, renal, eye and vascular disease secondary to diabetes.**

In support of the **New Mexico Adult Diabetes Practice Guideline 2011**, please see the reverse side of **Diabetes Resources** for recommendations for care including resources and tools that can help in your efforts to provide education and support among your patients with diabetes.

Check [www.nmtod.org](http://www.nmtod.org) for organizations that have graciously provided funding for **Diabetes Resources**.

New Mexico Health Care Takes On Diabetes, a New Mexico non-profit corporation, is a broad coalition of New Mexico's diabetes care professionals, New Mexico Health Plans, the New Mexico Department of Health, and the New Mexico Medical Review Association, with technical and administrative support from the American Diabetes Association.

## Using the A1C to Identify Diabetes and Those at Increased Risk for Diabetes

### The Issue:

The health and economic tolls of diabetes are growing. Effective application of preventive measures to decrease the burden of diabetes requires early identification of those with diabetes as well as those at risk for diabetes. Since 1997, a fasting plasma glucose (FPG) > 125mg/dL or a 2-hour post glucose challenge plasma glucose > 200mg/dL have been the accepted criteria for diagnosing diabetes. However, both of these tests require fasting and show considerable day-to-day variability, making them less than optimal screening tests. In 2009, an International Expert Committee recommended using the A1C as a diagnostic test for diabetes. The American Diabetes Association endorsed this approach in its Standards of Care for 2010.

### Cut-Points:

Previous diagnostic cut-points were based on correlation with frank, symptomatic diabetes. Current cut-points are based on the relationship between levels of glycemia and risk of complications. At an A1C of 6.5%, there is a sharp inflection point for retinopathy prevalence, so this level was chosen as the lower cut-point for diabetes diagnosis. The lower cut-points for increased risk are more arbitrary. The risk of developing diabetes does not end at the lower limit of the ranges, but is a continuum. Even below the cut-points, risk for developing diabetes and the complications of diabetes is present.

### Interpreting Screening Results: Examples

In the absence of unequivocal hyperglycemia, the results of the initial screening test should be confirmed with repeat testing. The confirmation test should be the same as the initial test. If two tests are done simultaneously (e.g., a FPG and an A1C) confirmatory testing may or may not be necessary. If the two tests are in concordance (e.g., both meet criteria for diabetes), confirmatory testing is not necessary. However, if the two test results are not in concordance, the test with the higher value should be repeated. The result of this test will determine the appropriate diagnosis.

### Did you know?

The A1C cut-point of  $\geq 6.5\%$  identifies 1/3 fewer cases of undiagnosed diabetes than a fasting glucose cut-point of  $\geq 126$  mg/dl. However, it is hoped that greater practicality will result in more people being tested and may increase the number of diagnoses made

American Diabetes Association  
 Diagnosis & Classification of  
 Diabetes, 2010

	Diabetes	Categories of Increased Risk for Diabetes
Fasting Plasma Glucose (no caloric intake for at least 8 hrs)	$\geq 126$ mg/dL	Impaired Fasting Glucose: 100-125 mg/dL
2h Oral Glucose Tolerance Test (45 gram glucose load following WHO standards)	$\geq 200$ mg/dL	Impaired Glucose Tolerance: 140-200 mg/dL
A1C* (NGSP certified/DCCT standardized)	$\geq 6.5\%$	5.7% - 6.4%
Random Plasma Glucose (in the presence of symptoms)	$\geq 200$	N/A

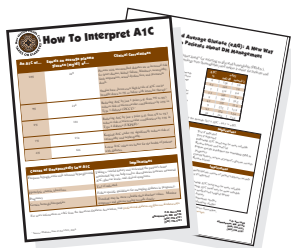
FPG	A1C	Repeat Test	Diagnosis
127	6.6%	not needed	Diabetes
127	6.1%	FPG: 119	Pre-diabetes
114	7.0%	A1C: 7.1%	Diabetes
104	6.6%	A1C: 6.4%	Pre-diabetes

\*Point of care A1C testing is not considered to be sufficiently accurate to use as a screening test.

## Resources for Clinicians

The following resources are FREE and can be downloaded from the New Mexico Health Care Takes On Diabetes website at [www.nmtod.org](http://www.nmtod.org). For further information contact Charm Lindblad, Executive Director, at 505.796.9121 or toll-free 1.866.796.9121.

**How to Interpret the 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.” This invaluable “memory jogger” can be downloaded free from the New Mexico Health Care Takes On Diabetes website.



**Reducing Cardiometabolic Risk: Patient Education Tool Kit**—To assist with your educational efforts, a comprehensive kit of reproducible patient education handouts on topics related to cardiometabolic risk reduction, pre-diabetes, diabetes, and CVD. Developed by the American Diabetes Association, American College of Cardiology and Preventive Cardiovascular Nurses Association, the kit covers 29 topics and is available in English and in Spanish. A CD-ROM version of this toolkit is also available. Request a copy at [http://professional.diabetes.org/ResourcesForProfessionals.aspx?cid=77080&utm\\_source=offline&utm\\_medium=print&utm\\_campaign=RCMR](http://professional.diabetes.org/ResourcesForProfessionals.aspx?cid=77080&utm_source=offline&utm_medium=print&utm_campaign=RCMR).

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

- ❖ National Diabetes Education Program: [www.ndep.nih.gov](http://www.ndep.nih.gov)
- ❖ American Diabetes Association: [www.diabetes.org](http://www.diabetes.org)
- ❖ American Diabetes Association Position Statements:  
Standards of Medical Care in Diabetes - 2010 (pgs. S11-14 screening and diagnosis)  
[http://care.diabetesjournals.org/content/33/Supplement\\_1/S11.full.pdf+html](http://care.diabetesjournals.org/content/33/Supplement_1/S11.full.pdf+html)  
Diagnosis and Classification of Diabetes Mellitus (pgs. S62-9)  
[http://care.diabetesjournals.org/content/33/Supplement\\_1/S62.full.pdf+html](http://care.diabetesjournals.org/content/33/Supplement_1/S62.full.pdf+html)
- ❖ International Expert Committee Report on the Role of the A1C Assay in the Diagnosis of Diabetes (pgs. 1327-34) <http://care.diabetesjournals.org/content/32/7/1327.full.pdf+html>
- ❖ Editorial: Redefining the Diagnosis of Diabetes Using Glycated Hemoglobin (pgs. 1344-5) <http://care.diabetesjournals.org/content/suppl/2009/06/08/dc09-9033.DC1/DC09-9034.pdf>
- ❖ National Institutes of Health: [www.diabetes.niddk.nih.gov](http://www.diabetes.niddk.nih.gov)
- ❖ American Heart Association, Heart of Diabetes Program: [www.americanheart.org/diabetes](http://www.americanheart.org/diabetes)
- ❖ NM Department of Health, Diabetes Prevention and Control Program: [www.diabetesnm.org](http://www.diabetesnm.org)

These websites may be accessed directly or through the New Mexico Health Care Takes On Diabetes website [www.nmtod.org](http://www.nmtod.org).\*

\*Please note that these websites do not necessarily represent the views of NMHCTOD. They are listed for your reference and convenience. NMHCTOD does not evaluate websites for content accuracy or application to any clinical situation.

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