

Blood test that provides prior blood sugar average now recommended for diabetes screening, diagnosis (w/ Video)

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(PhysOrg.com) -- In an annual supplement to the journal *Diabetes Care*, published Dec. 29 by the American Diabetes Association, the A1C test is given a prominent role in the 2010 guidelines for diabetes screening, diagnosis and prevention.

New official guidelines for diabetes screening and diagnosis now include a blood test that gives a person's average [blood glucose level](#) over the previous 2-3 months.

The [A1C test](#) is not new. It has been used since the late 1970s as a way to get a snapshot of how well [glucose control](#) is going in people with diabetes. But only in the last 15 years has its use and scoring become more standardized and reproducible from place to place and time to time than other diabetes blood glucose tests.

Now, in an annual supplement to the journal *Diabetes Care*, published Dec. 29 by the American Diabetes Association, the A1C test is given a prominent role in the 2010 guidelines for diabetes screening, diagnosis and prevention.

In particular, the section "Revisions to the Standards of Medical Care in Diabetes," recommends that the A1C be used to identify people with "pre-diabetes," those at increased risk for developing the type 2 form of disease. Unlike [type 1 diabetes](#) with its sudden onset, type 2 develops

gradually and without symptoms. But its damage to health and longevity can be equally severe.

At least 50 million adults and children in the U.S. may be well on their way to developing [type 2 diabetes](#), according to John Buse, M.D., Ph.D., professor of medicine and endocrinology chief at the University of North Carolina at Chapel Hill. Buse is former ADA president for medicine and science and a member of the International Expert Committee whose report in July 2009 strongly recommended the A1C assay for diabetes diagnosis and for identifying people at high risk for diabetes.

“One big advantage of the A1C test is that it doesn’t require fasting. The patient can come in any day, at any time. It’s also not as skittish as the older blood sugar test which can be increased by the kind of complaints that often bring people to the doctor like pain or infection. The A1C won’t be interfered with that way because it looks at your average blood sugar over 2-3 months.”

The test measures the percentage of glycated hemoglobin, or A1C, in the blood. Hemoglobin, a protein found in red blood cells, carries oxygen from the lungs to all the cells of the body. In diabetes, excess glucose in the bloodstream enters red blood cells and links up (glycates) with molecules of hemoglobin. The more excess glucose in your blood, the more hemoglobin gets glycated. By measuring the percentage of A1C in the blood, you get an overview of your average blood glucose level for the past few months.

This record changes as old red blood cells in your body die and new red blood cells (with fresh hemoglobin) replace them. The amount of A1C in your blood reflects blood sugar control for the past 120 days, or the lifespan of a red blood cell.

In a person who does not have diabetes, about 5 percent of all hemoglobin is glycated. For someone with diabetes and high blood glucose levels, the A1C level is higher than normal. How high the A1C level rises depends on what the average [blood](#) glucose level was during the past weeks and months. Levels can range from normal to as high as 25 percent if diabetes is horribly out of control for a long time.

In the current Revisions to the Standards of Medical Care in Diabetes, the section on Diagnosis of Diabetes has been revised to include the use of A1C to diagnose diabetes, with a cut-point of 6.5 percent or greater.

The section previously titled Diagnosis of Pre-diabetes has been renamed Categories of Increased Risk for Diabetes. An A1C range of 5.7-6.4 percent has been included as a category of increased risk for future diabetes.

“So, if you’re over the age of 45, or if you’re under the age of 45 and overweight and have any other risk factor for diabetes, the recommendation is that you be screened for diabetes to detect early cases,” Buse said.

For people with A1C scores in the pre-diabetes range, “diet and exercise aimed at a 5-10 percent reduction of weight, with 30 minutes of moderately vigorous physical activity per day reduces your risk of developing diabetes by 60 percent,” Buse said.

The UNC physician points out that for those whose A1C is 6.5% or higher, another test result at or above 6.5 percent is needed to make the diagnosis of diabetes technically official.

“If a patient has an A1C over 6.5, I say ‘good news-bad news’. The bad news is that you probably have diabetes. The good news is, technically, we have to measure this test again to make the diagnosis. With a solid

effort on lifestyle management, you have a good chance to make your A1C less than 6.5, thereby eliminating having the diagnosis of diabetes.”

Buse notes this could provide substantial motivation for patients to make lifestyle changes to lower their A1C score. But he emphasized that people “must remain aware that they’re still at high risk for developing diabetes.”

Provided by University of North Carolina at Chapel Hill School of Medicine

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