Journal of Medical Sciences

ISSN 1682-4474

science alert

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Routine Blood Test May Identify People With Pre-Diabetes, Cutting Later Treatment Costs

A simpler form of testing individuals with risk factors for diabetes could improve diabetes prevention efforts by substantially increasing the number of individuals who complete testing and learn whether or not they are likely to develop diabetes.

Approximately 60 million Americans, one-third of the adult population, are pre-diabetic. Thirty percent of these individuals will develop Type 2 diabetes in less than a decade, yet most don't know they are at high risk for the disease.

A study published in the January 2011 issue of the American Journal of Preventive Medicine reports that the hemoglobin A1c test, a common blood test that can be quickly administered in a physician's office, accurately and easily identifies pre-diabetics.

The A1c test measures average blood glucose level over the past 8 to 12 weeks and does not require a person to return for additional testing after an overnight fast. Researchers, led by Ronald T. Ackermann, M.D., M.P.H., Associate Professor of Medicine at the Indiana University School of Medicine and a Regenstrief Institute affiliated scientist, report that the A1c blood test, which has been routinely administered to diabetic patients for many years, can also pinpoint pre-diabetes.

"Identifying more individuals with pre-diabetes through a simple test in a physician's office gives us a real opportunity to halt progression to the disease, which is clearly a win-win situation," said Dr. Ackermann.

"If you have high blood pressure or heart disease, or multiple other risk factors such as obesity, are over the age of 45, had a past episode of diabetes during pregnancy, or have a family history of the disease, your physician can administer a simple blood test which will show if you are pre-diabetic. If you are pre-diabetic, loosing as little as 10 to 15 pounds through diet and exercise can cut in half your chances of getting diabetes, greatly improving your health and lowering your need for health care," said Dr. Ackermann, who is Associate Director of the Diabetes Translational Research Center at the IU School of Medicine and director of the Indiana Clinical and Translational Sciences Institute Community Health Engagement Program.

Fasting tests, which are currently used to screen for pre-diabetes are difficult to administer primarily because, they usually require two visits to the physician's office and because patients often forget to arrive on an empty stomach when they return for the test. The A1c test can avoid both of these problems because it can be performed on a single visit, even if a person has eaten. It is estimated that currently only 7 percent of all Americans with pre-diabetes have been tested and are aware of their status.

"Type 2 diabetes is growing rapidly with the increasing rate of obesity and has reached epidemic proportions in this country. Identifying pre-diabetics and halting the disease could prevent millions of individuals from developing diabetes and would avert the very high future costs of treating it. Lifestyle interventions in the pre-diabetic stage offer benefit not only by preventing type 2 diabetes but also by reducing cardiovascular risk factors," said Dr. Ackermann.

In 2002, the Diabetes Prevention Program, a large clinical trial, determined that diet and exercise sharply lower the risk that a person with pre-diabetes will develop diabetes. In a 2006 study Dr. Ackermann reported that it would be cost effective for Medicare to pay for diabetes prevention at age 50 rather than to deny prevention benefits until age 65 when many individuals will have already developed the disease.

Since that 2006 study, health insurance companies have taken a much closer look at paying for structured diabetes prevention programs as a means to improve health and to help curb the runaway costs of health care. In 2010, the UnitedHealth Group, a large nationwide health insurance carrier, began paying for a diabetes prevention program offered by the YMCA of the USA. The health plans, however, only pay for this treatment when a blood test shows pre-diabetes.

"Since health plans are beginning to pay for pre-diabetes treatments, doctors now have a more compelling reason to encourage patients who have risk factors to complete a screening test," said Dr. Ackermann. "The more practical A1c test could help doctors perform testing on a much larger scale than ever before."

The new study, which looked at blood test results of 1750 individuals with pre-diabetes, was funded by the Centers for Disease Control and the Robert Wood Johnson Foundation. Co-authors in addition to Dr. Ackermann are Yiling J. Cheng, M.D., Ph.D., and Edward W. Gregg, Ph.D., of the CDC, and David F. Williamson, Ph.D., of Emory University.

Source: American Journal of Preventive Medicine, 2011; 40 (1): 11 DOI: 10.1016/j.amepre.2010.09.022