

### **A1c Test Will be Used to Diagnose Diabetes**

The American Diabetes Association and other leading organizations in the U.S. will release guidelines within six months on the use of the A1c test to diagnose patients with type 2 diabetes.

According to a CDC report, the diagnosis of diabetes has increased 90 percent over the past ten years. There were 4.8 cases per 1,000 population during 1995-1997. The number increased to 9.1 cases per 1,000 population in 2005-2007.

It's important to have an easy way to diagnose diabetes. Now either a fasting blood glucose test or an Oral Glucose Tolerance Test (OGTT) is used to diagnose diabetes. The fasting blood glucose test requires that the patient fast for at least 8 hours before the test is done. A patient can have a normal fasting blood glucose level and still have diabetes. The OGTT requires that the patient fast for at least 8 hours. The patient has a blood glucose test done and then drinks 75 grams of glucose. The glucose level will be checked 2 hours after drinking the glucose. The OGTT test is more expensive because it takes more time to be completed.

When the new diagnosis guidelines are released there will be a test that patients do not have to fast for and that can be done at any time of day.

The A1c test indicates the average blood glucose level over the past two or three months. It is measured by the concentration of hemoglobin molecules in the red blood cells with glucose attached to the cells. The A1c test is a good predictor of future complications such as nerve, eye and kidney damage.

In the Epic-Norfolk study it was found that people who had a A1c of 6% compared to people with a A1c of 5%, (whether they had diabetes or not) had a 28% increase in cardiovascular death. The A1c test may be used to tell people that they have a risk for cardiovascular disease even if they do not have diabetes. The A1c test can also tell people if they have pre-diabetes or are at risk for pre-diabetes.

The A1c test should be done for every person at every physical whenever blood is drawn for other tests.

[www.diabetesincontrol.com/results.php?storyarticle=6478](http://www.diabetesincontrol.com/results.php?storyarticle=6478)

## **Type 2 and Type 1 Diabetes Clusters**

Research has shown that type 1 and type 2 diabetes cluster in families. Few studies have looked at how a family history of type 2 diabetes in parents impacts their children who have type 1 diabetes.

A study was completed at Helsinki University Hospital. Investigators looked at data from 1,860 patients with type 1 diabetes. Of the 1,860 patients, 620 had parents with type 2 diabetes and 1,240 did not have parents with type 2 diabetes.

The onset of type 1 diabetes occurred at 17.2 years in the group with parents who had type 2 diabetes compared with 16.1 years in the group whose parents did not have type 2 diabetes.

Metabolic syndrome was found in 44% of patients whose parents had type 2 diabetes and in 38% of patients without a parental history of type 2 diabetes.

Having parents with type 2 diabetes did not affect blood pressure, HLA genotype distribution, or the occurrence of diabetes complications. Having a parental history of type 2 diabetes was an independent predictor of type 1 diabetes onset, body mass index, triglyceride levels and insulin dose per kilogram of body weight.

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## **Metabolic Syndrome**

Metabolic syndrome is defined by the American Heart Association as being characterized by a group of metabolic risk factors in one person. The factors include:

- Abnormal obesity
- Blood fat disorders: high triglycerides, low HDL cholesterol and high LDL cholesterol that promote plaque buildup in artery walls
- High blood pressure
- Insulin resistance or glucose intolerance
- High fibrinogen or plasminogen activator inhibitor-1 in the blood (increases the risk for blood clots)
- Proinflammatory state (elevated C-reactive protein in the blood)

People with the metabolic syndrome are at increased risk of coronary heart disease, stroke, peripheral vascular disease and diabetes.

The American Heart Association and the National Heart, lung, and Blood Institute recommend that the metabolic syndrome be identified as the presence of three or more of the following components:

- Elevated waist circumference:  
Men – equal or greater than 40 inches  
Women – equal or greater to 35 inches
- Elevated triglycerides:  
equal or greater than 150 mg/dL
- Reduced HDL (“good”) cholesterol:  
Men – Less than 40 mg/dl  
Women – Less than 50 mg/dl
- Elevated blood pressure:  
Equal or greater than 130/80 mm Hg
- Elevated fasting glucose:  
Equal or greater than 100 mg/dL

The goal in the management of metabolic syndrome is to reduce the risk of cardiovascular disease and type 2 diabetes.

Adapted from [www.americanheart.org](http://www.americanheart.org) type in metabolic syndrome in the SEARCH space

### **Metabolic Syndrome: statement of the American Diabetes Association**

The term “metabolic syndrome” has been widely used in research to refer to a combination of related health risk factors that, when they appear together, create a higher risk for heart disease. Each of the factors diabetes, insulin resistance, obesity, unhealthy cholesterol and triglyceride levels, high blood pressure and signs kidney disease is already known to increase the risk of heart disease.

The question is whether the presence of the metabolic syndrome shows a greater risk for heart disease than the risks posed by the individual health risk factors. In a statement issued by the American Diabetes Association and the European Association of the Study of Diabetes, the answer is “no”.

The authors state there is no solid evidence that any of the metabolic syndrome health factors contribute more together than they do individually. Their recommendations are:

- Aggressively treat the individual health factors that lead to heart disease
- Continue to evaluate patients for other risk factors that lead to heart disease

- Avoid labeling patients with the term metabolic syndrome
- Avoid prescribing a treatment for the “syndrome” until new, solid evidence is found

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### **Commentary**

It’s my opinion that we may not agree on whether there is a metabolic syndrome or not. But I think that we can agree that we need to give people with diabetes information to help them lower their risk for heart disease.

KH

### **In the Future: a Saliva Test for Type 2 Diabetes**

Researchers from India and Oregon have taken steps toward developing the first saliva test to detect and monitor type 2 diabetes. Their report was published in the January 2, 2009 issue of the American Chemical Society’s *Journal of Proteome Research*.

The researchers analyzed saliva samples from people with and without type 2 diabetes for protein biomarkers of diabetes. They identified 65 proteins that appeared twice as often in the samples of people with type 2 diabetes as in the samples for people without type 2 diabetes. These newly identified proteins could lead to new, non-invasive tests for diabetes screening, detection and monitoring.

[www.diabetesincontrol.com/results.php?storyarticle=6437](http://www.diabetesincontrol.com/results.php?storyarticle=6437)

### New handouts

The Diabetes Care and Education Practice Group of the American Dietetic Association has some new handouts. Go to [www.dce.org](http://www.dce.org) click on publications, then click on Patient Education Slicks, scroll down to Eat-Move-Live Nutrition Notes Series

There are 2 new publications: Omega -3 Fatty Acids

Managing and Preventing Hypoglycemia

### Low Literacy handouts

There are low literacy handouts in English and Spanish on [www.sansum.org](http://www.sansum.org)

Click on the left side of the page on “prevention and education”, then click on “educational materials” The handouts are in PDF files.

## Websites

[www.changinglifewithdiabetes.com](http://www.changinglifewithdiabetes.com) This webpage is sponsored by Novo Nordisk. It would be good for people who like to get information on-line. It has many short videos that a person could watch.

[www.journeyforcontrol.com](http://www.journeyforcontrol.com) This webpage is sponsored by Merck. Check out the “patient site” and the “diabetes educator site”. For example on the “patient site” there are 100 healthy recipes. On the “diabetes educator” site there are many PDF file handouts. Click on “starting new patients on the right track” and “continued learning for patients”.