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All About Diabetes

Diabetes is a disease in which the body does not produce or properly use insulin. Insulin is a hormone that is needed to convert sugar, starches and other food into energy needed for daily life. The cause of diabetes continues to be a mystery, although both genetics and environmental factors such as obesity and lack of exercise appear to play roles.

In order to determine whether or not a patient has pre-diabetes or diabetes, we conduct a Fasting Blood Glucose Test (FBG) or an Oral Glucose Tolerance Test (OGTT). Either test can be used to diagnose pre-diabetes or diabetes. The American Diabetes Association recommends the FPG because it is easier, faster, and less expensive to perform.

With the FPG test, a fasting blood glucose level between 100 and 125 mg/dl signals pre-diabetes. A person with a fasting blood glucose level of 126 mg/dl or higher has diabetes.

In the OGTT test, a person's blood glucose level is measured after a fast and two hours after drinking a glucose-rich beverage. If the two-hour blood glucose level is between 140 and 199 mg/dl, the person tested has pre-diabetes. If the two-hour blood glucose level is at 200 mg/dl or higher, the person tested has diabetes.

Major Types of Diabetes

1. Type 1 Diabetes

Type 1 diabetes is usually diagnosed in children and young adults, and was previously known as juvenile diabetes. In type 1 diabetes, the body does not produce insulin.

2. Type 2 Diabetes

Type 2 diabetes is the most common form of diabetes. In type 2 diabetes, either the body does not produce enough insulin or the cells ignore the insulin. When glucose builds up in the blood instead of going into cells, it can cause two problems:

- Right away, your cells may be starved for energy.
- Over time, high blood glucose levels may hurt your eyes, kidneys, nerves or heart.

Finding out you have diabetes is scary. But don't panic. Having diabetes is serious, but people with diabetes can live long, healthy, happy lives.

3. Gestational Diabetes

Pregnant women who have never had diabetes before but who have high blood sugar (glucose) levels during pregnancy are said to have gestational diabetes.

Gestational diabetes starts when your body is not able to make and use all the insulin it needs for pregnancy. Without enough insulin, glucose cannot leave the blood and be changed to energy. Glucose builds up in the blood to high levels. This is called hyperglycemia.

4. **Pre Diabetes**

Before people develop type 2 diabetes, they almost always have "pre-diabetes" -- blood glucose levels that are higher than normal but not yet high enough to be diagnosed as diabetes. Recent research has shown that some long-term damage to the body, especially the heart and circulatory system, may already be occurring during pre-diabetes.

Research has also shown that if you take action to manage your blood glucose when you have pre-diabetes, you can delay or prevent type 2 diabetes from ever developing.

How to Tell if You Have Pre-Diabetes

While diabetes and pre-diabetes occur in people of all ages and races, some groups have a higher risk for developing the disease than others.

There are two different tests your doctor can use to determine whether you have pre-diabetes: the fasting blood glucose test (FPG) or the oral glucose tolerance test (OGTT). The blood glucose levels measured after these tests determine whether you have a normal metabolism, or whether you have pre-diabetes or diabetes. If your blood glucose level is abnormal following the FPG, you have impaired fasting glucose (IFG); if your blood glucose level is abnormal following the OGTT, you have impaired glucose tolerance (IGT).

Does Someone You Know Have Pre-diabetes?

Mr. Shah, 48, was getting dangerously close to a diagnosis of type 2 diabetes. A fasting blood glucose done by his doctor was 111 mg/dl, and a week later it was 115 mg/dl. Normal fasting blood glucose is under 100 mg/dl; diabetes is diagnosed when the fasting blood glucose is 126 mg/dl or higher. A fasting blood glucose between 100 mg/dl and 125 mg/dl is called impaired fasting glucose (IFG).

His doctor sent Mr. Shah for a glucose tolerance check. Mr. Shah drank a set amount of glucose; his blood glucose two hours later was 173mg/dl. Normal is under 140mg/dl, diabetes is 200 mg/dl or over. Mr. Shah had impaired glucose tolerance (IGT).

Because so many people with IFG or IGT go on to develop diabetes, IFG and IGT are called pre-diabetes.

Would Mr. Shah be one of those who gets worse and develops diabetes? Or would he be able to shift his blood glucose back to the solidly non-diabetic levels?

Pre-diabetes was not Mr. Shah's only problem. He had been treated for high blood pressure for eight years. He was overweight, and he had gained 20 pounds in the last year. He was not physically active. He didn't have healthy cholesterol levels. He had a family history of type 2 diabetes and coronary artery disease. All of these taken together meant that Mr. Shah was at high risk of developing type 2 diabetes and having heart problems in the future.

Reversible

Many people with pre-diabetes are able to change their fates by losing a little weight (just 10 or 20 pounds can make a difference) and walking 150 minutes a week. Losing a little weight and being more active also improves blood pressure and cholesterol levels and lowers the risk of heart attack and stroke.

Mr. Shah met with a dietitian for help in losing weight. He had a treadmill stress test to see whether his heart could tolerate an exercise program. He was advised to do 30 minutes of brisk walking five days per week.

Six months later, Mr. Shah returned for a check-up. He had gained seven pounds. He was exercising only 20 minutes per week. His fasting blood glucose had increased to 117 mg/dl.

What You Can Do

First, calculate your body mass index (BMI): Take your weight in pounds, divide by height in inches, divide by height again, then multiply by 703.

Have your blood glucose levels checked if you are:

- Age 45 or older, especially if your BMI is 25 or higher
- Under age 45 but your BMI is 25 or higher plus you have another risk factor for type 2 diabetes: high blood pressure, history of gestational diabetes, a baby weighing more than nine pounds at birth, polycystic ovary syndrome, HDL (good) cholesterol under 35 mg/dl, triglycerides over 250 mg/dl, first-degree relative with diabetes, history of vascular disease, or habitual inactivity.

Get rechecked every three years

If blood tests determine that you have pre-diabetes:

- Ask your doctor for exercise recommendations (Walking is an excellent exercise for most people and has proven effective in reversing pre-diabetes)
- Redouble your efforts to lose a little weight
- Ask your doctor about medication to prevent diabetes

Get your Diabetes Profile done today!

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