

DIABETES, TYPE 2

About Your Diagnosis

Type 2 diabetes is a disease in which the amount of insulin produced by the pancreas is inadequate to meet the body's needs. Insulin is a hormone that is vital to proper metabolism of glucose. In Type 2 diabetes, glucose is not taken up normally from the blood into body tissues. The tissues are insulin resistant. Initially the pancreas is able to compensate for this extra blood glucose by increasing insulin production. Eventually, the pancreas cannot supply enough insulin to meet the body's demand, and blood sugars begin to rise. This early rise in blood sugars is known as impaired glucose tolerance (IGT). Diabetes will develop in 1% to 5% of individuals per year with IGT.

Insulin resistance may also develop in pregnant women, especially late in pregnancy. When this leads to elevated blood sugars, it is called gestational diabetes mellitus (GDM). Gestational diabetes mellitus usually resolves at the end of the pregnancy. These women are at higher risk of developing diabetes later in life.

Eight million adults in the United States have received a diagnosis of Type 2 diabetes; another 8 million remain undiagnosed. Type 2 diabetes occurs more commonly in individuals with IGT, obesity, and in certain ethnic populations (African Americans, Native Americans, and those of Hispanic origin).

According to 1997 American Diabetes Association guidelines, Type 2 diabetes is detected by a fasting blood sugar greater than 126 mg/dL measured on two or more occasions, or two random blood sugar levels greater than 200 mg/dL, or one blood sugar level greater than 200 mg/dL in an individual with symptoms of diabetes.

An oral glucose tolerance test (OGTT) may also be used to diagnose diabetes. A glucose level of 200 mg/dL or more 2 hours after drinking 75 grams of glucose defines diabetes in the OGTT. For pregnant women, a 50-gram glucose drink is followed by a blood test 1 hour later. If the blood glucose level is 140 mg/dL or greater, a follow-up test with 100 grams of glucose that lasts 3 hours is performed. If any two or more of the following values are elevated, the patient is considered to have GDM: fasting, greater than 105 mg/dL; 1 hour, greater than 190 mg/dL; 2 hour, greater than 165 mg/dL; or 3 hour, greater than 145 mg/dL.

There is no cure for Type 2 diabetes, but every year new treatments are becoming available.

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Living With Your Diagnosis

Signs and symptoms of Type 2 diabetes include excessive thirst, frequent urination (especially at night), and increased appetite. Blurry vision and numbness in the toes or fingers may also occur. Most patients feel tired and may have slow-healing sores. Many individuals have no symptoms early in their disease.

Type 2 diabetes is the leading cause of blindness in working adults in the United States. It is also a leading diagnosis of patients with end-stage renal disease who are receiving dialysis. It is a major cause of amputations and places patients at increased risk for coronary heart disease.

Treatment

Patients should follow a low-fat, low-calorie diet. Aerobic exercise under physician guidance is beneficial. Many oral medications are now available for the treatment of diabetes, each with its own benefits and risks. Finally, insulin may be used for patients whose diabetes is not well controlled despite all the above measures. Insulin may also be temporarily used for patients who are sick or undergoing surgery.

Risk factors for heart disease must be controlled. Blood cholesterol, blood pressure, and body weight should be normalized. Cigarette smoking must be discontinued.

Complications of diabetes must also be prevented. An annual eye examination by an ophthalmologist is recommended for all patients with Type 2 diabetes. A urine test for protein is performed once a year. A foot examination is conducted regularly to detect early nerve damage.

The DOs

- * Monitor your blood sugars at home and record these in a log.
- * Follow your diet.
- * Begin a medically supervised exercise program.
- * Obtain annual eye examinations and urine tests for protein.
- * Examine your feet at home.
- * Learn your cholesterol level.

The DON'Ts

- * Don't exercise if your blood sugar levels are very elevated. This may lead to a temporary worsening of your blood sugar levels.
- * Don't enroll in a fad diet.
- * Don't skip your insulin if you feel ill.

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When to Call Your Doctor

- * You have a high or low blood sugar level you cannot explain.
- * You have a fever or are otherwise sick.
- * You are scheduled for surgery or a radiology procedure that requires intravenous dye.
- * You notice an abrupt change in your vision.
- * You have a nonhealing ulcer on your foot.

For More Information

Joslin Diabetes Center

One Joslin Place

Boston, MA 02215

617-732-2400

American Diabetes Association

1-800-232-3472

<http://www.diabetes.org>

National Institute of Diabetes and Digestive and Kidney Diseases <http://www.niddk.nih.gov>

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