

factsabout | Type 2 Diabetes

A PATIENT-EDUCATION TOOL FROM THE COMMITTEE ON CARDIOVASCULAR AND METABOLIC DISEASES



What You Should Know About... Type 2 Diabetes

Diabetes is a disease in which the body cannot properly process *glucose* (sugar) in the blood. Glucose provides energy for all of the body's cells. Normally, glucose enters these cells with help from the hormone *insulin*, which is produced by the *pancreas*. In the absence of enough insulin, glucose builds up in the bloodstream, leading to *hyperglycemia* (high blood sugar). In *type 1 diabetes*, which affects 5% to 10% of people with diabetes, the body's immune system attacks and destroys insulin-producing cells in the pancreas. In *type 2 diabetes*, affecting 90% to 95% of people with diabetes, the pancreas produces some—but not enough—insulin, and the body doesn't properly use the insulin it has (this is known as *insulin resistance*). More than 20 million people in the United States have diabetes. Of those, more than 14 million are diagnosed and about 6.2 million have the disease but don't know it.

Q What are the signs and symptoms?

Type 2 diabetes develops slowly. The first signs are usually excessive thirst and frequent urination. Some people also experience a flu-like illness, weight gain or loss, blurred vision, fatigue, frequent infections or slow-healing sores, nerve damage, and/or swollen gums. In many individuals, however, diabetes may be present without any signs or symptoms.

Q Who is at risk?

Those who are most at risk are older than age 45, have a family history of diabetes, are overweight (80% of people with type 2 diabetes are overweight), are inactive, or are of African-American, Hispanic, or American-Indian descent.

Q How is type 2 diabetes diagnosed?

It's diagnosed with a blood test: If your fasting blood glucose level is at least 126 milligrams per deciliter (mg/dL) of blood on more than one occasion, your doctor should discuss with you a diagnosis of diabetes.

Q What are the long-term effects of type 2 diabetes?

Uncontrolled hyperglycemia—failure to control your blood sugar level—can damage your eyes (*retinopathy*), which can lead to blindness; your nerves (*neuropathy*), which can cause numbness; and your kidneys (*nephropathy*), which can result in kidney failure. It also increases the risk for *atherosclerosis* (narrowing of the arteries) in the heart, brain, and/or legs. If you have numbness in your feet (*peripheral neuropathy*) and/or poor circulation in your legs due to atherosclerosis (*peripheral arterial disease*), you are at great risk for developing foot ulcers and infections. These can ultimately lead to gangrene and amputation.

Q How is it treated?

The first goal is to control your blood glucose level, which means that you must measure it regularly. This may be as infrequently as twice a week or, if you take insulin, as frequently as four times a day. The first step in treatment is to lose weight through diet and exercise (unless you already happen to be slim and fit). A registered dietician can help you plan meals, which should include foods that are high in nutritive value and low in fat and calories. Regular aerobic exercise (for 30 minutes on most days of the week) is also important.

Q What if diet and exercise aren't enough?

Your doctor may prescribe medication:

- **Sulfonylureas** stimulate the pancreas to produce and release more insulin.
- **Meglitinides** work like the sulfonylureas.
- **Biguanide** stalls the production and release of glucose in the liver.
- **Alpha-glucosidase inhibitors** delay absorption of sugar from the intestine.
- **Thiazolidinediones** sensitize your body tissues to insulin and keep your liver from producing too much glucose.
- **Insulin** is administered under the skin with a syringe, pen injector, or pump device.

Q What is the link between diabetes and cardiovascular disease?

Although control of blood sugar is critical, the increased frequency of heart attack and stroke in people with diabetes is not prevented by that alone. It is crucial to also pay close attention to all cardiovascular risk factors, particularly abnormal cholesterol levels, high blood pressure, and use of aspirin. Heart attack and stroke are now recognized as the leading causes of illness and death in people with diabetes; therefore, control of these risk factors is as important as control of blood sugar.

TREATMENT TARGETS

Blood sugar (before meals):

80-120 mg/dL

HbA1c:

less than 7.0%

LDL-cholesterol:

less than 100 mg/dL

Triglycerides:

less than 150 mg/dL

HDL-cholesterol:

greater than 45 mg/dL

Blood pressure:

130/80 mm Hg

Total cholesterol:

less than 200 mg/dL

Source: American Diabetes Association, 2006.

IN CLOSING...

Although diabetes is a chronic, lifelong condition, you can maintain good health by controlling your blood glucose level. This means checking it on a regular basis, sticking to your diet and exercise program, and taking your prescribed medication. These efforts may prevent the complications associated with diabetes or, at the very least, delay their onset and slow their progression.

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