

How Is Type 2 Diabetes Treated?

The goal of treatment for type 2 diabetes is to gain and maintain control over your blood glucose level, cholesterol level, and blood pressure in order to prevent or reduce the severity of diabetes-related health problems.^{2,5} Type 2 diabetes can often be controlled through weight loss achieved by eating less and exercising more. At some point, you may need to start taking diabetes pills, insulin, or both to control your blood sugar. If your cholesterol level and blood pressure cannot be kept in a healthy range through diet and exercise, you may have to take medications to achieve those goals.^{1,2,5}

Your doctor may recommend that you check your blood glucose levels at home using a glucose monitor, especially if you take diabetes pills or insulin or have a hard time keeping your blood sugar levels in control. Home monitoring will tell you whether your blood glucose level is within your target range at the time you do the test. Keeping a log of your daily test results will help you recognize patterns of change in blood sugar levels that occur throughout the day and can be useful in making changes to your treatment plan.^{2,5}

In addition to the everyday routine you will establish to control your diabetes, you will also have to take special care of yourself when you are sick. Infections that cause colds and flu can make it hard for you to keep your blood sugar level within your target range.

Your doctor may prescribe additional medications to protect your heart and kidneys and will recommend careful monitoring of your blood pressure. High blood pressure (hypertension) in combination with diabetes can lead to serious health problems that may be life-threatening.

Your chance of long-term success in managing diabetes will be better if you work in partnership with a team of health care professionals that may include your primary care doctor, a certified diabetes educator, a registered dietitian, and other medical specialists.^{2,5} These people will give you ongoing, individualized instruction on diabetes management and monitor how well your treatment plan is working.

What Can I Do to Maintain My Health?

Managing diabetes requires a number of lifestyle changes—such as losing weight and quitting smoking—that you might find difficult to make. It is very important that you communicate with members of your health care team if you are having trouble following any part of your treatment plan.

In addition to sticking with your treatment plan, regular medical and dental checkups are an important part of keeping healthy.

You should have an eye exam at least once a year.³ You also need to check your feet regularly to look for sores or infections that do not heal.

Where Can I Find More Information?

You can get more information about type 2 diabetes from the following sources:

American Diabetes Association

Telephone: **1-800-DIABETES (1-800-342-2383)**

Home page: www.diabetes.org

National Institute of Diabetes and Digestive and Kidney Diseases

Telephone: **1-800-860-8747**

Home page: www.niddk.nih.gov

References

1. National Institute of Diabetes and Digestive and Kidney Diseases; Diagnosis of Diabetes and Prediabetes. Available at: <https://www.niddk.nih.gov/health-information/diabetes/diagnosis-diabetes-prediabetes>. Accessed November 1, 2016.
2. Skyles JS, Hirsch IB. Diabetes mellitus. In Noble J, ed. *Textbook of Primary Care Medicine*. 3rd ed. St Louis, MO: Mosby; 2001:821-842.
3. American Diabetes Association. Diabetes Symptoms. Available at: <http://www.diabetes.org/diabetes-basics/symptoms/>. Accessed October 25, 2016.
4. American Diabetes Association. Diagnosing Diabetes and Learning About Prediabetes. Available at: <http://www.diabetes.org/diabetes-basics/diagnosis/>. Accessed October 25, 2016.
5. Standards of Medical Care in Diabetes – 2016: Summary of Revisions. *Diabetes Care* Jan 2016, 39 (Supplement 1) S4-S5; DOI: 10.2337/dc16-S003. Available at: www.diabetes.org/diabetescare. Accessed October 25, 2016.

Note: This material is provided for general information purposes only. It is not intended as a substitute for medical advice and/or consultation with a physician or technical expert.



www.LabCorp.com

Type 2 Diabetes TESTING



What is Type 2 Diabetes?

Diabetes is a disease that causes you to have too much sugar (glucose) in your blood. Normally, your digestive system breaks down the food you eat into glucose. Your blood carries the glucose to your body's cells where a hormone called insulin, which is made in the pancreas, helps glucose enter the cells so it can be converted into energy. When you have type 2 diabetes, glucose builds up in your blood because cells do not use insulin effectively (this is known as insulin resistance), which prevents glucose from entering the cells. Eventually, the insulin-producing cells in the pancreas wear out. This results in your cells becoming starved for energy.^{1,2}

The buildup of large amounts of glucose in the blood is called **hyperglycemia**. Without proper treatment, hyperglycemia may eventually lead to health conditions including^{1,2,5}:

- Heart and blood vessel (cardiovascular) disease
- Eye problems
- Kidney disease
- Nerve damage
- Skin problems
- Foot damage
- Peripheral vascular disease, which can lead to gangrene (tissue death) and amputation

Diabetes can be managed, and its complications may be prevented, but it cannot be cured. Once you develop type 2 diabetes, you will have it for the rest of your life.

Type 2 diabetes typically affects adults over 40 years of age who are overweight. However, increasing numbers of younger people—including children and adolescents—are developing type 2 diabetes. This is likely due to the fact that more and more young people are overweight and do not get enough exercise.^{1,2,5} Family history and ethnic background are risk factors for type 2 diabetes. If you have a parent or sibling with type

2 diabetes, your risk for the condition is increased. High-risk ethnic groups include African Americans, American Indians, some Asian Americans, Native Hawaiians and other Pacific Islander Americans, and Hispanics/Latinos.^{1,5}

Type 2 diabetes is the most common form of diabetes.

What Causes Type 2 Diabetes?

Resistance to insulin that results in failure of glucose to enter cells is main cause of type 2 diabetes. This is an inherited genetic condition.^{1,2} The onset of type 2 diabetes occurs when a person who carries these genetic defects becomes overweight, usually by eating a high-fat diet and not getting enough exercise.^{1,2,5}

Type 2 diabetes also may be caused by the use of certain medications or medical conditions that prevent insulin from converting glucose to energy.⁵

What Are the Symptoms of Type 2 Diabetes?

Symptoms of type 2 diabetes usually develop gradually (if at all) over a period of years. Most people don't know they have type 2 diabetes until it is diagnosed by chance during a routine medical check-up. When symptoms do appear, they may include the following^{1-3,5}:

- Increased urination
- Extreme thirst and hunger
- Unexplained weight loss
- Slow healing of wounds and sores
- Tiredness (fatigue)
- Blurred vision
- Pain, numbness, or tingling in the hands or feet
- Frequent yeast infections

How Is Type 2 Diabetes Diagnosed?

Routine screening for diabetes is now a part of regular health check-ups. The process of diagnosing type 2 diabetes usually starts with a complete physical exam.

Diagnosis of type 2 diabetes is generally made with laboratory testing. Blood tests that can be used to determine your blood glucose level include:^{1,2,4,5}

- **A1c (percent) test.** This test provides an average of your blood sugar over the past 2 to 3 months.
- **Fasting plasma glucose test.** This test measures the amount of glucose in your blood after you have fasted (had nothing to eat) for at least 8 hours.
- **Oral glucose tolerance test.** For this test, you must fast for at least 8 hours, and then you drink a sweetened beverage. At timed intervals, your plasma glucose level will be measured.
- **Random plasma glucose test.** This is a measurement of your blood glucose level that can take place any time of the day, regardless of when you last ate a meal.
 - » A diagnosis of diabetes is made if you have symptoms of diabetes and your blood glucose level is equal to or greater than 200 mg/dL. A second random plasma glucose test must be performed on another day to confirm the diagnosis.

	Normal	Prediabetes	Diabetes
A1C (percent)	About 5	5.7 to 6.4	6.5 or Above
Fasting Plasma Glucose (mg/dL)	99 or Below	100 to 125	126 or Above
Oral Glucose Tolerance Test (mg/dL)	139 or Below	140 to 199	200 or Above

Definitions: mg = milligram, dL = deciliter
Adapted from American Diabetes Association. Standards of medical care in diabetes—2012. Diabetes Care. 2012;35(Supp 1):S12, table 2