



NORTHSIDE HOSPITAL
Atlanta • Forsyth • Cherokee

Your Guide to Diabetes



Getting Started

WHAT DIABETES IS

Chapter 1

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Introduction

Your doctor or nurse says you have diabetes (also referred to as diabetes mellitus). This guide will help you learn how to take care of your diabetes and how to prevent some of the serious problems that diabetes can cause. We wrote this guide with help from people like you, people who have diabetes and wanted more information about it.

We hope *Your Guide to Diabetes* will answer many of your questions. You may want to share this booklet with your family and friends so they too will understand more about diabetes and how they can help you live a healthy life. And remember, you can always ask your health care team any questions you might have.

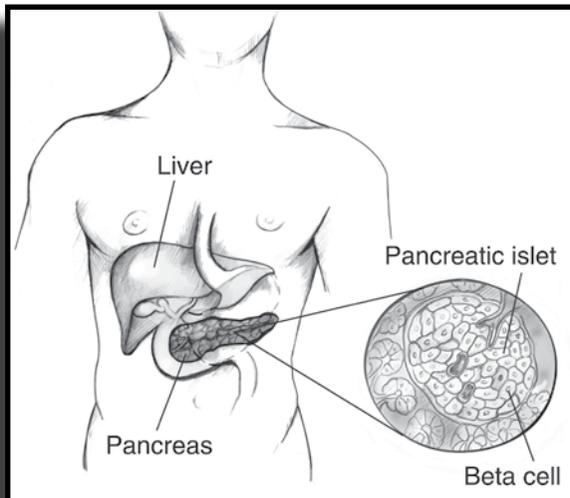


Diabetes means your blood glucose (often called blood sugar) is too high.

Your blood always has some glucose in it because your body needs glucose for energy to keep you going. But too much glucose in the blood isn't good for your health.

How do you get high blood glucose?

Glucose comes from the food you eat and is also made in your liver and muscles. Your blood carries the glucose to all the cells in your body. Insulin is a chemical (a hormone) made by the pancreas. The pancreas releases insulin into the blood. Insulin helps the glucose from food get into your cells. If your body doesn't make enough insulin, or if the insulin doesn't work the way it should, glucose can't get into your cells. It stays in your blood instead. Your blood glucose level then gets too high, causing pre-diabetes or diabetes.

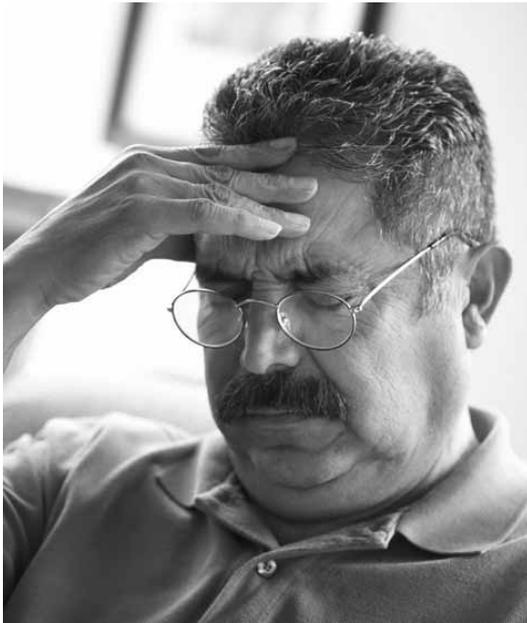


The pancreas is located in the abdomen behind the stomach. Islets within the pancreas contain beta cells, which produce insulin.

What is pre-diabetes?

Pre-diabetes is a condition in which blood glucose levels are higher than normal but not high enough for a diagnosis of diabetes. People with pre-diabetes are at increased risk for developing type 2 diabetes and for heart disease and stroke. The good news is, if you have pre-diabetes, you can reduce your risk of getting diabetes. With modest weight loss and moderate physical activity, you can delay or prevent type 2 diabetes and even return to normal glucose levels.

What are the common signs of diabetes?



Blurry eyesight is one of the signs of diabetes.

Signs of diabetes are:

- being very thirsty
- urinating often
- feeling very hungry or tired
- losing weight without trying
- having sores that heal slowly
- having dry, itchy skin
- losing the feeling in your feet
or having tingling in your feet
- having blurry eyesight

You may have had one or more of these signs before you found out you had diabetes. Or you may have had no signs at all. A blood test to check your glucose levels will show if you have pre-diabetes or diabetes.

What kind of diabetes do you have?

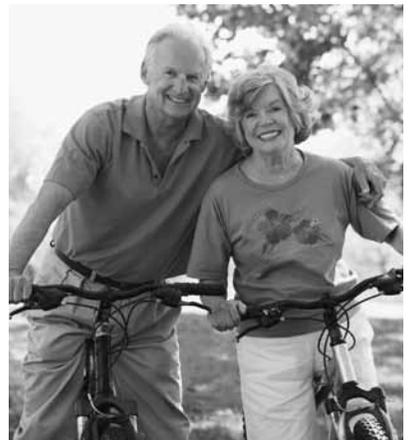
People can get diabetes at any age. There are three main kinds: Type 1, type 2, and gestational. There are also other types of diabetes that do not occur as often as these three types.

Type 1 diabetes, formerly called juvenile diabetes or insulin-dependent diabetes, is usually first diagnosed in children, teenagers, or young adults.

With this form of diabetes, the beta cells of the pancreas no longer make insulin because the body's immune system has attacked and destroyed them.



Treatment for **type 1 diabetes** includes taking insulin, making wise food choices, being physically active, taking aspirin daily (for some), and controlling blood pressure and cholesterol.



Type 2 diabetes, formerly called adult-onset diabetes or non insulin-dependent diabetes, is the most common form of diabetes. People can develop type 2 diabetes at any age—even during childhood. This form of diabetes usually begins with insulin resistance, a condition in which fat, muscle, and liver cells do not use insulin properly.

At first, the pancreas keeps up with the added demand by producing more insulin. In time, however, it loses the ability to secrete enough insulin in response to meals. Being overweight and inactive increases the chances of developing type 2 diabetes.

Treatment includes using diabetes medicines, making wise food choices, being physically active, taking aspirin daily (when your doctor recommends it), and controlling blood pressure and cholesterol.

Some women develop **gestational diabetes** during the late stages of pregnancy.

Although this form of diabetes usually goes away after the baby is born, a woman who has had it is more likely to develop type 2 diabetes later in life. Gestational diabetes is caused by the hormones of pregnancy or a shortage of insulin.



Why do you need to take care of your diabetes?

After many years, diabetes can lead to serious problems with your eyes, kidneys, nerves, and gums and teeth. But the most serious problem caused by diabetes is heart disease. When you have diabetes, you are more than twice as likely as people without diabetes to have heart disease or a stroke. If you have diabetes, your risk of a heart attack is the same as someone who has already had a heart attack. Both women and men with diabetes are at risk. You may not even have the typical signs of a heart attack.

You can reduce your risk of developing heart disease by controlling your blood pressure and blood fat (cholesterol) levels.

People with diabetes are more than twice as likely as people without diabetes to have heart disease or a stroke.

If you smoke, talk with your doctor about quitting. Remember that every step toward your goals helps!

What's a desired blood glucose level?

Everyone's blood has some glucose in it. In people who don't have diabetes, the normal range is about 70 to 110 milligrams per deciliter of blood (mg/dL). Blood glucose goes up after eating, but 1 or 2 hours later it returns to the normal range.



Ask your health care team when you should check your blood glucose with a meter. Talk about whether the blood glucose targets listed below are best for you. Then write in your own targets.

Capillary blood glucose targets for most people with diabetes

When	Target levels	My target levels*
Before meals	70 to 130 mg/dL	_____ to _____
1 to 2 hours after the start of a meal	less than 180 mg/dL	less than _____

* For Women: If you are pregnant or planning to become pregnant, talk with your doctor about your new target levels.

It may be hard to reach your target range all of the time. But the closer you get to your goal, the more you will reduce your risk of diabetes-related problems and the better you will feel. Every step helps.

The A1C Test

“A1C” is a blood test that your doctor or nurse will order. It lets them know your average blood glucose levels over several weeks and months.

A1C results

Target for most people	Less than 7
Time to change my diabetes care plan	8 or above
My last result	
My target	

Blood pressure results

Target for most people with diabetes	under 130/80
My last result	
My target	

Target blood fat levels for people with diabetes

Total cholesterol	under 200	My last result _____	My target _____
LDL cholesterol	under 100	My last result _____	My target _____
HDL cholesterol	above 40 (Men)	My last result _____	My target _____
	above 50 (Women)	My last result _____	My target _____
Triglycerides	under 150	My last result _____	My target _____

GLOSSARY OF DIABETES TERMS

Chapter 7

Autoimmune disease.

A disorder in which the immune system mistakenly attacks and destroys body tissue that it believes to be foreign. In type 1 diabetes, an autoimmune disease, the immune system attacks and destroys the insulin-producing beta cells.

Blood glucose A1C.

A blood test for the amount of a specific sugar found in the blood. The test is used to measure a person's average blood sugar level over the past 2 to 3 months.

Blood glucose level.

The amount of glucose in the blood.

Blood glucose meter.

A device that measures how much glucose is in the blood. A specially coated test strip containing a fresh sample of blood (obtained by pricking the skin, usually the finger, with a lancet) is inserted in the meter, which then measures the amount of glucose in the blood.

Blood glucose monitoring.

The act of checking the amount of glucose in the blood. Also called self-monitoring of blood glucose.

Blood lipid.

A term for fat in the blood stream, and is measured with a lipid profile blood test. The lipid profile test measures total cholesterol (the fat produced by the liver and found in some foods), triglycerides (the storage form of fat in the body), HDL cholesterol (fat that takes extra cholesterol from the blood to the liver for removal), and LDL cholesterol (fat that takes excess cholesterol around the body).

Blood pressure.

The force of blood on the inside walls of blood vessels, measured by analyzing both the systolic blood pressure, the pressure when the heart pushes blood out into the arteries, and the diastolic blood pressure, when the heart is at rest.

Carbohydrates.

One of the three main classes of foods and a source of energy for the body. Carbohydrates are mainly sugars and starches that the body breaks down into glucose. Foods high in carbohydrates raise blood glucose levels. Carbohydrate foods include: breads, crackers, and cereals; pasta, rice, and grains; vegetables; milk and yogurt; fruit, juice, and sweetened sodas; and table sugar, honey, syrup, and molasses.

Complications of diabetes.

Harmful effects that may happen when a person has diabetes. Short-term complications resulting from poorly controlled or uncontrolled diabetes include hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose). Long-term complications, which may develop when a person has had diabetes for a long time, include blindness, amputation of feet or legs, kidney disease, heart disease, stroke, and nerve damage.

Diabetes Medical Management Plan.

Describes the medical orders or diabetes regimen developed by your health care provider, you and your family.

<u>Diabetic coma.</u>	A severe emergency in which a person is not conscious because his or her blood glucose is too low or too high. See also hyperglycemia; hypoglycemia; and diabetic ketoacidosis.
<u>Diabetic Retinopathy.</u>	A diabetic eye disease that results from damage to the small blood vessels in the retina, the back part of the eye that contains the cells that respond to light. It may lead to loss of eyesight.
<u>Diabetic ketoacidosis (DKA).</u>	A condition that occurs due to insufficient (too little) insulin in the body. This can be due to illness, incorrect doses of insulin, or omitting insulin injections. The acidic state that follows causes fruity smelling breath, deep and rapid breathing, stomach pain, nausea, vomiting, and sleepiness. DKA can lead to coma and death if not treated promptly.
<u>Fast-acting glucose.</u>	Foods containing simple sugar that are used to raise blood glucose levels quickly during a hypoglycemic episode.
<u>Glucagon.</u>	A hormone that raises the level of glucose in the blood. Also, Glucagon can be given by injection and is used to treat severe hypoglycemia.
<u>Glucose.</u>	A simple sugar found in the blood. It is the body's main source of energy.

<u>Glucose tablets or gel.</u>	Special products that deliver a pre-measured amount of pure glucose. They are a fast-acting form of glucose used to quickly treat hypoglycemia.
<u>Hormone.</u>	A chemical produced by an organ that travels in the blood to affect other organs.
<u>Hyperglycemia.</u>	A high level of glucose in the blood. High blood glucose can be due to a mismatch in insulin, food, and exercise. Symptoms include thirst, frequent urination, blurred vision, and fatigue.
<u>Hypoglycemia.</u>	A low level of glucose in the blood. Low blood glucose is most likely to occur during or after exercise, if too much insulin is present, or not enough food is consumed. Symptoms include feeling shaky, having a headache, or being sweaty, pale, hungry, or tired.
<u>Insulin.</u>	A hormone produced by the pancreas that is needed to convert sugar, starches, and other food into energy needed for daily life.
<u>Insulin injections.</u>	The process of putting insulin into the body with a needle and syringe or an insulin pen.
<u>Insulin pen.</u>	A pen-like device used to put insulin into the body.
<u>Insulin pump.</u>	A device that delivers a continuous supply of insulin. The insulin is delivered in a steady, measured dose through a system of plastic tubing (infusion set). Most infusion sets are started with a needle, then a tiny plastic tube is left in place, taped with a dressing, and the needle is removed.

Insulin resistance.

A condition in which the body does not respond normally to the action of insulin. Many people with type 2 diabetes have insulin resistance.

Ketoacidosis.

See Diabetic ketoacidosis.

Ketones (ketone bodies).

Chemicals that the body makes when there is not enough insulin in the blood and the body must break down fat for its energy. Ketones can poison and even kill body cells. When the body does not have the help of insulin, ketones build up in the blood and “spill” over into the urine so that the body can get rid of them. Ketones that build up in the body for a long time lead to serious illness and coma.

See also: Diabetic ketoacidosis.

Lancet.

A fine, sharp-pointed needle used by people with diabetes for pricking their skin to obtain a sample of blood for blood glucose monitoring.

Metabolism.

The term for the way cells chemically change food so that it can be used to keep the body alive.

Medical alert identification.

An identification card and necklace or bracelet indicating the person has diabetes and giving an emergency number to call.

<u>Metformin.</u>	A medicine pill used to treat type 2 diabetes because it lowers blood sugar levels by reducing the amount of sugar produced by the liver and helping the body respond better to insulin.
<u>Mg/dL.</u>	Milligrams per deciliter. This term is used in blood glucose monitoring to describe how much glucose is in a specific amount of blood.
<u>Nursing Care Plan.</u>	A plan developed by a licensed Registered Nurse used to carry out the diabetes medical management plan.
<u>Pallor.</u>	Abnormal paleness of the skin.
<u>Palpitations.</u>	Abnormally rapid or violent beating of the heart.
<u>Pancreas.</u>	The organ behind the lower part of the stomach that makes insulin.
<u>Peak effect time.</u>	Time when insulin has its major impact on reducing blood glucose levels. See also Insulin.
<u>Syringe.</u>	A device used to inject medications such as insulin into body tissue.
<u>Target range.</u>	A selected level for blood glucose values that the person with diabetes tries to maintain. The target range is usually determined by the physician in consultation with the person with diabetes. See also blood glucose levels.

Test strips.

Specially designed strips used in blood glucose meters or in urine testing.

Urine ketone testing.

A procedure for measuring the level of ketones in the urine. The test is done using special test strips that are dipped in a container of urine and read by comparing the color on the test strip to a chart on the test strip container.

**RESOURCES TO LEARN MORE
ABOUT DIABETES
Chapter 8**

During your Admission at a Northside Hospital Facility:

Video Education is available for viewing.

Northside Hospital-Atlanta: Video's can be viewed on the Patient Education Channel. Your healthcare team is available to assist you.

Northside Hospital-Cherokee: Your healthcare team will make arrangements for the equipment to be brought to your room for viewing.

Northside Hospital-Forsyth: Your healthcare team will make arrangements for the equipment to be brought to your room for viewing.

Organizations That Can Help You

1. Northside

- How to get more information about diabetes
To get more information about taking care of diabetes, contact:

Northside Hospital Diabetes & Nutrition Education

For the Atlanta, Alpharetta, and Forsyth Areas, call: 404-851-6023.

For the Cherokee Area, call: 678-493-1501.

Also see Northside Hospital's web site for information on the comprehensive Outpatient Diabetes Program:

www.northside.com/medical_services/diabetes.aspx

New Start, Weight Smart (Northside's Weight Reduction Program):

404-851-6023

Northside offers weight loss programs to help you reach your goals. The program combines nutrition, behavior and fitness assessments with motivational education sessions designed to help you achieve maximum success.

For information on Northside's weight loss program, visit the web at:
http://www.northside.com/medical_services/weight_reduction_clinic.aspx

Northside Behavioral Health Services

404-851-8960

Call for Area Locations

2. Outside

- How to find a diabetes educator

To find a diabetes educator near you, call the American Association of Diabetes Educators toll-free at 1-800-832-6874, or look on the Internet at www.diabeteseducator.org and click on “Find an Educator.”

- How to find a dietitian

To find a dietitian near you, call the American Dietetic Association toll-free at 1-800-877-1600.

- How to find programs about diabetes

To find programs about diabetes or for additional information, contact:

American Diabetes Association

1701 North Beauregard Street

Alexandria, VA 22311

Phone: 1-800-342-2383

Email: askada@diabetes.org

Internet: www.diabetes.org

Juvenile Diabetes Research Foundation International

120 Wall Street

New York, NY 10005

Phone: 1-800-533-2873

Email: info@jdrf.org

Internet: www.jdrf.org

Both of these organizations have magazines and other information for people with diabetes. They also have local groups in many places where you can meet other people who have diabetes.

National Diabetes Information Clearinghouse

1 Information Way

Bethesda, MD 20892-3560

Phone: 1-800-860-8747

Fax: 703-738-4929

Email: ndic@info.niddk.nih.gov

Internet: www.diabetes.niddk.nih.gov

National Diabetes Education Program

1 Diabetes Way

Bethesda, MD 20892-3560

Phone: 1-800-438-5383

Fax: 703-738-4929

Email: ndep@mail.nih.gov

Internet: www.ndep.nih.gov

American Diabetes Association

800-DIABETES

(800-342-2383)

This number will provide you with information regarding education facilities in your area of residence. It will also provide you with other information like healthy eating, exercise, community resources and more.

Diabetes Association of Atlanta

404-527-7150

They offer:

- Early Detection Program
- Diabetes Education Program
- Medical Assistance Program

WEBSITES

American Diabetes Association

www.diabetes.org

Juvenile Research Foundation

www.jdrf.org

National Diabetes Education Program
www.ndep.nih.gov

WebMD

Information on diabetes, medications and complications. www.webmd.com

Joslin Diabetes Center

Information for traveling with diabetes supplies, and other topics
www.joslin.harvard.edu/news/faa-alert.html

Diabetes Interview

Essential information for the diabetes community
Free weekly e-mail letter
www.diabetesinterview.com

Canadian Diabetes Association

Information on diabetes and treatment
www.diabetes.ca/new.htm

- Temporary prescription assistance Programs:

Lilly Cares

(Humulin and Humalog)

1-800-545-6962

Temporary prescription assistance program

Novo Nordisk

(Novolin and Novolog)

1-800-727-6500

Temporary prescription assistance based on income up to a year.

Takes at least 10 business days to initiate and medication is obtained at the doctor's office.

Sanofi -Aventis

(Lantus, Apidra, Amaryl)

1-800-221-4025

Temporary prescription assistance based on need. Takes a week to begin and medication is obtained at the doctor's office.

Bristol-Myers Squibb
(Glucophage and Glucovance)
1-800-736-0003
www.bmspaf.org
Patient assistance program

Diabetes Clinic of Grady Health System
96 Armstrong Street
Atlanta, GA 30335
404-616-3730
Serves residents of Fulton and DeKalb counties, fees based on income

- Emergency assistance for persons with limited income

Diabetes Detection and Control Center of Grady Health System
96 Armstrong Street
Atlanta, GA 30305
(404) 616-3730
Serves residents of Fulton and DeKalb counties. Fees based on income.

Medicare
Contact the Social Security Administration.
1-800-772-1213

Medicaid
Contact the Department of Family and Children's Services in your county. 1-800-869-1150 (central office)

Nutritional Services
Congregate meals are served in 36 senior citizens' centers located throughout counties. Senior centers are open 5 days a week, hot and nutritious meals for persons 60 years and older. For a listing and further information, contact the senior center in your area.
404-730-4000 (central number for senior centers).

Home Delivered Meals (Meals on Wheels)
Hot, nutritious meals are delivered to homebound persons, 60 years

and older, who are unable to prepare their own meals. Preferences are given to persons in greatest economic and social need. The meals are packed in individual containers and are delivered 5 days a week. To inquire about this service, contact the county Community Council on Aging at 770-503-3330.

Food Stamps

These are coupons that can be used like money to buy food at any store, supermarket, or co-op that accepts them. In order to qualify for food stamps the individual must meet certain income and resource requirements. To apply, contact the Food Stamp Office at the nearest Department of Family and Children's Services. Home visits can be made to help complete applications.

Resources:

Content

The majority of the content of this publication was provided by the United States' Department of Health and Human Services via the National Diabetes Information Clearinghouse. Additional content was based upon the same or other selected evidence-based data.

The National Diabetes Information Clearinghouse (NDIC) is a service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The NIDDK is part of the National Institutes of Health under the U.S. Department of Health and Human Services. Established in 1978, the Clearinghouse provides information about diabetes to people with diabetes and to their families, health care professionals, and the public. The NDIC answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about diabetes.

This majority of the content in this booklet is also available at:
www.diabetes.niddk.nih.gov.

This publication may contain information about medications used to treat a health condition. When this publication was prepared, the NIDDK included the most current information available. Occasionally, new information about medication is released. For updates or for questions about any medications, please contact the U.S. Food and Drug Administration at 1–888–INFO–FDA (463–6332), a toll-free call, or visit their website at www.fda.gov.

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Atlanta-Forsyth-Cherokee

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