

Prevent diabetes problems

Keep your diabetes under control



NATIONAL INSTITUTES OF HEALTH
National Diabetes Information Clearinghouse



U.S. Department
of Health and
Human Services

Contents

What are diabetes problems?	1
Will I have diabetes problems?	1
What should my blood glucose numbers be?	2
How can I find out what my average blood glucose is?	3
What should my blood pressure be?	5
What should my cholesterol be?	6
What does smoking have to do with diabetes problems?	7
What else can I do to prevent diabetes problems?	8
Things to Check for Good Diabetes Care	9
How to Use the Daily Diabetes Record Page	14
For More Information	19
More in the Series	21
Acknowledgments	22

Prevent diabetes problems:
Keep your diabetes
under control



NATIONAL INSTITUTES OF HEALTH
National Diabetes Information Clearinghouse

What are diabetes problems?

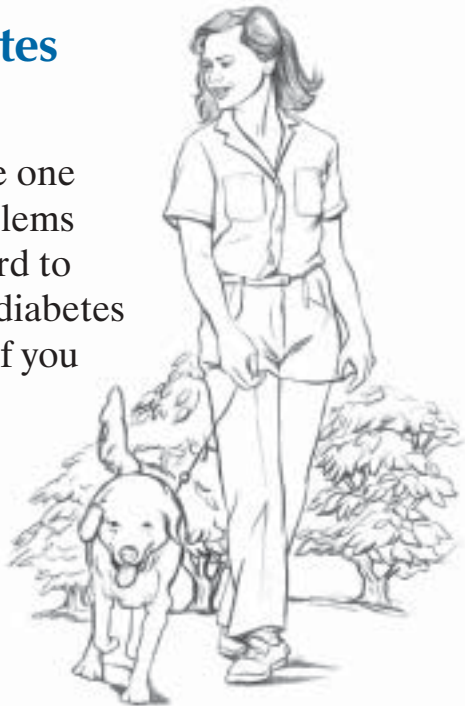
Too much glucose (sugar) in the blood for a long time can cause diabetes problems. This high blood glucose (also called blood sugar) can damage many parts of the body, such as the heart, blood vessels, eyes, and kidneys. Heart and blood vessel disease can lead to heart attacks and strokes. You can do a lot to prevent or slow down diabetes problems.

Will I have diabetes problems?

Maybe. You may have one or more diabetes problems or none at all. It is hard to know if or when your diabetes will cause problems. If you get diabetes when you are young, you may not have diabetes problems for many years. If you find out you have diabetes as an adult, you may already have diabetes problems.

Either way, keeping

your blood glucose, blood pressure, and cholesterol under control can prevent diabetes problems.



Be active to prevent diabetes problems.

What should my blood glucose numbers be?

Keeping your blood glucose on target will prevent or delay diabetes problems. For most people, target blood glucose levels are

Before meals	90 to 130
1 to 2 hours after the start of a meal	less than 180

Talk with your health care provider about what **your** blood glucose numbers should be and write them here.

Before meals	_____ to _____
1 to 2 hours after the start of a meal	less than _____

You and your health care provider will agree on when you need to check your blood glucose using a blood glucose meter. You will do the checks yourself. Your health care provider can teach you how to use your meter.

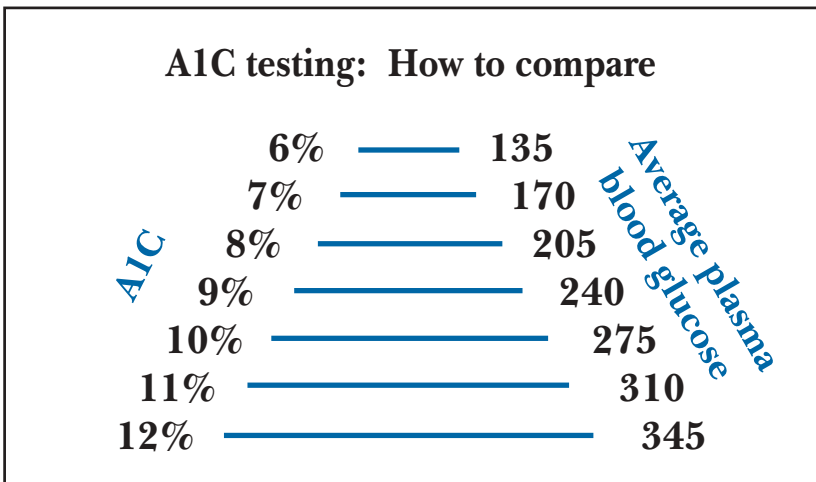
Keep track of your blood glucose checks using the record page in this booklet on page 16. Make copies yourself or ask your health care provider for a blood glucose record book. Your blood glucose check results will help you and your health care provider make a plan for keeping your blood glucose under control. Always bring your record book to your health care appointments so you can talk about reaching your glucose goals.

How can I find out what my average blood glucose is?

Ask your health care provider to do an A1C test. This blood test shows the average amount of glucose in your blood during the past 2 to 3 months. Have this test done at least twice a year. If your A1C result is not as good as it should be, your health care provider will do this test more often to see if it is improving as your treatment changes. Your A1C result plus your blood glucose meter results can show whether your blood glucose is under control.

Aim for a result below 7 percent. If your A1C test result is below 7 percent, then your blood glucose is in a desirable range and your diabetes treatment plan is working. The lower your A1C is, the lower your chance of getting eye, nerve, and kidney damage.

If your test result is more than 8 percent, you need a change in your diabetes plan. Your health care team can help you decide what part of your plan to change. You may need to change your meal plan, your diabetes medicines, or your exercise plan.



What should my blood pressure be?

Normal blood pressure will help prevent damage to your eyes, kidneys, heart, and blood vessels. Blood pressure is written with two numbers separated by a slash. For example: 120/70. The first number should be below 130 and the second number should be below 80. Keep your blood pressure as close to these numbers as you can. If you already have kidney disease, you may want even lower blood pressure to protect your kidneys.

Meal planning, medicines, and exercise can help you reach your blood pressure target.



Have your blood pressure checked at every visit.

What should my cholesterol be?

Normal cholesterol levels will help prevent heart disease and stroke, the biggest health problems for people with diabetes. Keeping cholesterol levels under control can also help with blood flow. Have your cholesterol level checked at least once a year. Meal planning, exercise, and medicines can help you reach your cholesterol targets:

Total cholesterol	under 200
LDL cholesterol	under 100
HDL cholesterol	above 40 (men) above 50 (women)
Triglycerides	under 150

What does smoking have to do with diabetes problems?

Smoking and diabetes are a dangerous combination. Smoking raises your risk for diabetes problems. If you quit smoking, you'll lower your risk for heart attack, stroke, nerve disease, and kidney disease. Your cholesterol and your blood pressure levels may improve. Your blood circulation will also improve.

If you smoke, ask your health care provider for help in quitting.



What else can I do to prevent diabetes problems?

There are other things that you can do either each day or one or more times a year to prevent diabetes problems. For example, to keep your feet healthy, check them each day. Ask your health care team whether you should take an aspirin every day to lower your risk for heart disease. To keep your eyes healthy, visit an eye doctor once a year for a complete eye examination that includes using drops in your eyes to dilate the pupils.



Once a year, your urine should be tested for protein. Also once a year, your health care provider should do a complete foot exam. See page 10 for what you can do each day to stay healthy with diabetes. See pages 11 to 13 for other things to check for good diabetes care.

Check your feet each day to keep them healthy.

Things to Check for Good Diabetes Care

Taking care of diabetes is a team effort between you and your health care team (doctor, diabetes nurse educator, diabetes dietitian educator, pharmacist, and others). You are the most important member of the team.

Take charge of your diabetes by learning what to do for good diabetes care:

- things to do **every day** for good diabetes care (see page 10)
- things for your health care provider to look at **every time you have a checkup** (see pages 11 and 12)
- things for you or your health care provider to do **at least once or twice a year** (see pages 12 and 13)

Keep a daily record of blood glucose check results. (Make copies of the Daily Diabetes Record page in this booklet.) This information will help you see whether you are reaching your blood glucose goals.

You can prevent or slow down diabetes problems by reaching your blood glucose, blood pressure, and cholesterol goals most of the time.

Things to Do Every Day for Good Diabetes Care



Follow the healthy eating plan that you and your doctor or dietitian have worked out.



Be active a total of 30 minutes most days. Ask your doctor what activities are best for you.



Take your diabetes medicines at the same times each day.



Check your blood glucose every day. Each time you check your blood glucose, write the number in your record book.



Check your feet every day for cuts, blisters, sores, swelling, redness, or sore toenails.



Brush and floss your teeth and gums every day.



Don't smoke.

Things for Your Health Care Provider to Look at Every Time You Have a Checkup

Your blood glucose records	<p>Show your records to your health care provider.</p> <hr/> <p>Tell your health care provider if you often have hypoglycemia (low blood glucose) or high blood glucose.</p>
Your weight	<p>Talk with your health care provider about how much you should weigh.</p> <hr/> <p>Talk about ways to reach your goal that will work for you.</p>
Your blood pressure	<p>The goal for most people with diabetes is less than 130/80.</p> <hr/> <p>Ask your health care provider about ways to reach your goal.</p>
Your diabetes medicines plan	<p>Talk with your health care provider about any problems you have had with your diabetes medicines.</p>
Your feet	<p>Ask your health care provider to check your feet for sores.</p>

Your plan for exercise	Talk with your health care provider about what you do to stay active.
Your meal plan	Talk about what you eat, how much you eat, and when you eat.
Your feelings	<p>Ask your health care provider about ways to handle stress.</p> <hr/> <p>If you are feeling sad or unable to cope with problems, ask about how to get help.</p>
Your smoking	If you smoke, talk with your health care provider about how you can quit.

Things for You or Your Health Care Provider to Do at Least Once or Twice a Year

A1C test	Have this blood test at least twice a year (see pages 3 and 4). Your result will tell you what your average blood glucose level was for the past 2 to 3 months.
-----------------	---

Blood lipid (fats) lab tests	<p>Get a blood test to check your</p> <ul style="list-style-type: none"> • total cholesterol—aim for under 200 • LDL—aim for under 100 • HDL—men: aim for above 40; women: aim for above 50 • triglycerides—aim for under 150
<p>These test results will help you plan how to prevent heart attack and stroke.</p>	
Kidney function tests	<p>Ask for tests to check your urine for protein. The results will tell you how well your kidneys are working.</p>
Dilated eye exam	<p>See your eye doctor once a year for a complete eye exam.</p>
Dental exam	<p>See your dentist twice a year for a cleaning and checkup.</p>
Flu shot	<p>Get a flu shot each year.</p>
Foot exam	<p>Ask your health care provider to check your feet to make sure your foot nerves and your blood circulation are OK.</p>

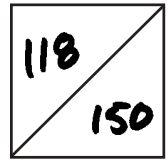
How to Use the Daily Diabetes Record Page

Use copies of the record page on page 16 to keep track of blood glucose checks, medicines, and notes about things that affect your blood glucose. Make one copy of the record page for each week. This record will help you see whether your diabetes plan is working. Review your record with your health care providers.

Blood Glucose Checks

Talk with your health care provider and decide on the best times to check blood glucose. You may be checking blood glucose before meals, after meals, or at bedtime. Write when to check here:

If needed, draw a line in the boxes under “Breakfast,” “Lunch,” and “Dinner” to make room for blood glucose check results before and after a meal, like this example:



See page 2 for information about target blood glucose levels.

Medicines

Under the heading marked “Medicine,” write the name of your diabetes medicines and the amounts taken.

Notes

Write down things that affect your blood glucose level. Some examples are

- eating more or less than usual
- forgetting to take your diabetes medicine
- exercising (write down what kind and for how long)
- being sick or upset about something (being under stress)
- going to a social event or other special event, or being on vacation

Daily Diabetes Record*

	Other Blood Glucose	Breakfast Blood Glucose	Medicine	Lunch Blood Glucose	Medicine	Dinner Blood Glucose
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						
Sunday						

*Keep this copy clean. Make photocopies and write on the copies.

My Health Care Team Members

	Name and Address	Phone Number
Doctor		
Diabetes Dietitian Educator		
Diabetes Nurse Educator		
Eye Doctor		
Dentist		
Foot Doctor		
Pharmacist		
Counselor		

For More Information

Diabetes Teachers (nurses, dietitians, pharmacists, and other health professionals)

To find a diabetes teacher near you, call the American Association of Diabetes Educators toll-free at 1-800-TEAMUP4 (1-800-832-6874), or look on the Internet at www.diabeteseducator.org and click on “Find a Diabetes Educator.”



Dietitians

To find a dietitian near you, call the American Dietetic Association toll-free at 1-800-366-1655, or look on the Internet at www.eatright.org and click on “Find a Nutrition Professional.”

To get more information about taking care of diabetes, contact

National Diabetes Information Clearinghouse

1 Information Way

Bethesda, MD 20892-3560

Phone: 1-800-860-8747 or (301) 654-3327

Fax: (301) 907-8906

Email: ndic@info.niddk.nih.gov

Internet: www.diabetes.niddk.nih.gov

National Diabetes Education Program

1 Diabetes Way

Bethesda, MD 20892-3600

Phone: 1-800-438-5383

Fax: (301) 907-8906

Internet: <http://ndep.nih.gov>

American Diabetes Association

1701 North Beauregard Street

Alexandria, VA 22311

Phone: 1-800-342-2383

Internet: www.diabetes.org

**Juvenile Diabetes Research Foundation
International**

120 Wall Street

New York, NY 10005-4001

Phone: 1-800-533-2873

Internet: www.jdrf.org

More in the Series

The “Prevent Diabetes Problems” series includes seven booklets that can help you learn more about how to prevent diabetes problems.



For free single copies of these booklets, write, call, fax, or email the

National Diabetes Information Clearinghouse
1 Information Way
Bethesda, MD 20892-3560

Phone: 1-800-860-8747 or (301) 654-3327

Fax: (301) 907-8906

Email: ndic@info.niddk.nih.gov

These booklets are also available at www.diabetes.niddk.nih.gov on the Internet.

Acknowledgments

The National Diabetes Information Clearinghouse thanks the people who helped review or field-test this booklet.

For American Association of Diabetes Educators

Lynn Grieger, R.D.,
C.D.E.
Arlington, VT
Celia Levesque, R.N.,
C.D.E.
Montgomery, AL
Teresa McMahon,
Pharm.D., C.D.E.
Seattle, WA
Barbara Schreiner, R.N.,
M.N., C.D.E.
Galveston, TX

For American Diabetes Association

Phyllis Barrier, M.S.,
R.D., C.D.E.
Alexandria, VA
Linda Haas, Ph.C., R.N.,
C.D.E.
Seattle, WA
Kathleen Mahoney,
M.S.N., R.N., C.D.E.
Drexel Hill, PA
Randi Kington, M.S.,
R.N., C.S., C.D.E.
Hartford, CT

For Centers for Medicare & Medicaid Services

Baltimore, MD
Jan Drass, R.N., C.D.E.

For Diabetes Research and Training Centers

Albert Einstein School
of Medicine
Norwalk Hospital
Norwalk, CT
Jill Ely, R.N., C.D.E.
Sam Engel, M.D.
Pam Howard, A.P.R.N.,
C.D.E.
Indiana University
School of Medicine
Indianapolis, IN
Madelyn Wheeler, M.S.,
R.D., F.A.D.A., C.D.E.

VA/JDF Diabetes
Research Center
Vanderbilt School of
Medicine
Nashville, TN
Ok Chon Allison,
M.S.N., R.N.C.S.,
A.N.P., C.D.E.
Barbara Backer, B.S.
James W. Pichert, Ph.D.
Alvin Powers, M.D.
Melissa E. Schweikhart
Michael B. Smith
Kathleen Wolffe, R.N.

For Grady Health System Diabetes Clinic

Atlanta, GA
Ernestine Baker, R.N.,
F.N.P., C.D.E.
Kris Ernst, R.N., C.D.E.
Margaret Fowke, R.D.,
L.D.
Kay Mann, R.N., C.D.E.

For Indian Health Service

Albuquerque, NM
Ruth Bear, R.D., C.D.E.
Dorinda Bradley, R.N.,
C.D.E.
Terry Fisher, R.N.
Lorraine Valdez, R.N.,
C.D.E.

Red Lake, MN
Charmaine Branchaud,
B.S.N., R.N., C.D.E.

For Medlantic Research Center

Washington, DC
Resa Levetan, M.D.

For Texas Diabetes Council

Texas Department of
Health
Austin, TX
Luby Garza-Abijaoude,
M.S., R.D., L.D.

National Diabetes Information Clearinghouse

1 Information Way
Bethesda, MD 20892-3560
Phone: 1-800-860-8747 or (301) 654-3327
Fax: (301) 907-8906
Email: ndic@info.niddk.nih.gov
Internet: www.diabetes.niddk.nih.gov

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. NDIC answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about diabetes.

Publications produced by the clearinghouse are carefully reviewed by both NIDDK scientists and outside experts.

This publication is not copyrighted. The clearinghouse encourages users of this booklet to duplicate and distribute as many copies as desired.

This booklet is also available at www.diabetes.niddk.nih.gov.



U.S. DEPARTMENT OF HEALTH
AND HUMAN SERVICES
National Institutes of Health



NIDDK

National Institute of Diabetes and
Digestive and Kidney Diseases

NIH Publication No. 03-4349
September 2003