

Diabetes & You

Your guide to
living with diabetes



DIABETES & YOU

Name _____

Address _____

City _____ State _____ Zip _____

Phone _____

Doctor _____ Phone _____

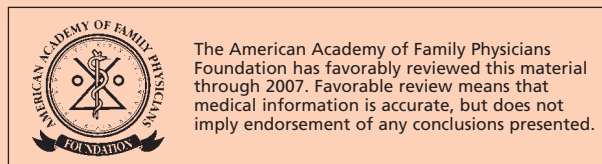
Address _____

Diabetes educator _____ Phone _____

Registered dietitian _____ Phone _____

Emergency contact (relative or friend) _____

Emergency contact phone number _____



The *Keeping Well With Diabetes* patient education materials were developed using information from the following sources: The American Association of Diabetes Educators, The American Diabetes Association, The American Dietetic Association, and The American Association of Clinical Endocrinologists. These booklets do not replace the advice of your healthcare provider. Be sure to consult your healthcare provider regarding your individual diabetes treatment plan.

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INTRODUCTION

Millions of people have diabetes. Although diabetes is a serious health problem, with proper care you can learn to manage your



diabetes and lead a full and active life. But first, you need to learn how to take care of yourself.

This booklet will answer many of your questions

about living with diabetes. Among the things you will learn is how to work with your diabetes-care team to develop your personal diabetes treatment plan.

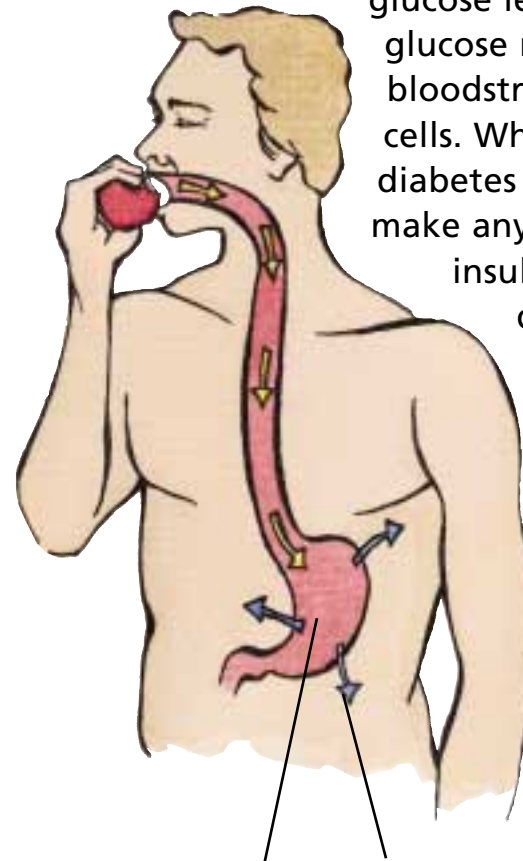
Your diabetes-care team may include your physician, a nurse or diabetes educator, a registered dietitian, a podiatrist (a foot-care specialist), and your local pharmacist. You all have the same goal: to help keep you well with diabetes.



WHAT IS DIABETES?

When you eat, some of your food is broken down into glucose (a kind of sugar). Glucose travels in your blood to all your body cells. Insulin, made by your pancreas, helps glucose move from your blood into your cells. Glucose helps your cells produce the energy you need for healthy living.

Glucose from food makes your blood glucose level go up. Insulin lowers blood glucose levels by helping



glucose move from your bloodstream into your cells. When you have diabetes your body doesn't make any insulin, enough insulin, or your insulin doesn't work right. You must do the work your body did before diabetes to keep your insulin and glucose in balance.

STOMACH

GLUCOSE

THE TYPES OF DIABETES

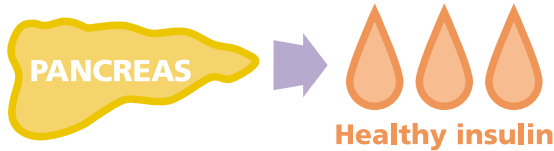
The most common types of diabetes are type 1 and type 2. In type 1 diabetes, the pancreas (the organ that makes insulin) does not work right. The cells that produce insulin are damaged or destroyed, so the body makes little or no insulin. Type 1 diabetes usually occurs in children or young adults.

In type 2 diabetes, the body makes some insulin but not enough. Or, the insulin the body makes does not work right. Type 2 diabetes is more common in overweight

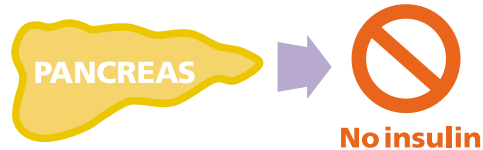
older adults, but young people can also have type 2 diabetes.

Diabetes can also occur during pregnancy, and it can be caused by certain illnesses.

Without Diabetes



Type 1 Diabetes



Type 2 Diabetes



WHAT CAUSES DIABETES?

Scientists don't know what causes diabetes.

One possible cause is that people with diabetes may be missing a certain gene that protects against diabetes (genes are

the blueprints for your body's design). We do know that certain things (risk factors) increase your chance of getting diabetes.

Diabetes risk factors include being overweight, high blood pressure, or having a family history of diabetes.



People who don't produce insulin or enough insulin need

to take insulin injections or diabetes pills to keep their insulin and glucose in balance. Some people can manage their diabetes with a diet and exercise plan developed with their healthcare provider. Everyone is different. That's why you will need your own diabetes treatment plan to manage your diabetes.



THE SIGNS OF DIABETES

Some common signs or symptoms of diabetes are:



Tired all the time



Always thirsty



Need to urinate often



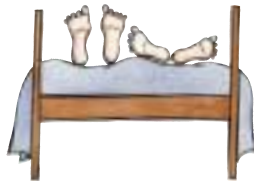
Blurry vision



Always hungry



Sudden weight loss



Sexual problems



Wounds that won't heal



Vaginal infections



Numb or tingling hands or feet

YOUR DIABETES TREATMENT PLAN

Your diabetes-care team will work with you to create your diabetes treatment plan. Your plan will match your likes, dislikes, and living habits with your blood glucose goals.

A typical plan includes:

- ✓ A meal plan (how many calories or grams of carbohydrate, fat, and protein to eat daily)
- ✓ An exercise plan
- ✓ Instructions on how and when to check your blood glucose
- ✓ Your personal blood glucose goal (or target range)
- ✓ If you take insulin—the types, dosages, and timing of doses
- ✓ If you take diabetes pills—the types, dosages, and timing of doses
- ✓ Other health care goals (such as managing your weight)
- ✓ A schedule for regular health checkups

MEDICINE FOR DIABETES

Many people with diabetes need medicine to manage their blood glucose levels.

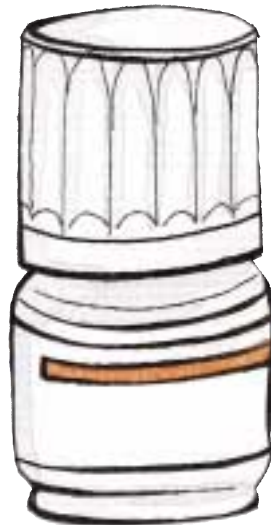
People with type 1 diabetes don't make any insulin or enough insulin.

They must take insulin by injection because insulin will be digested if it is taken by mouth. People with type 2 diabetes often make some insulin, but they produce less insulin than they need or the insulin they produce does not work right.



Many people who have type 2 diabetes can take pills instead of insulin. At some point, many people with type 2 diabetes also need to take insulin.

There are several different kinds of insulin and diabetes pills that can help lower blood glucose.



DIABETES PILLS

Many diabetes pills help the body release more insulin. Some pills especially help the body release more insulin to handle the glucose that comes from food. Still other types keep blood glucose levels from rising too high after eating.

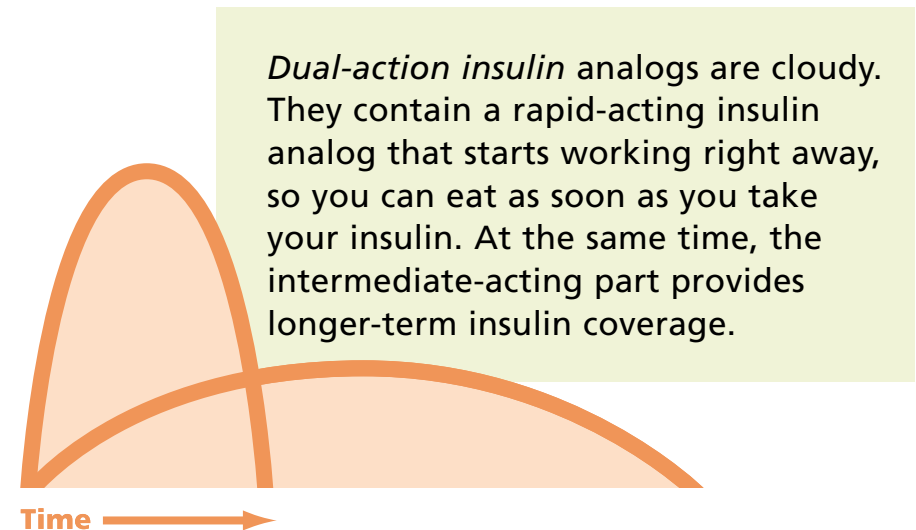
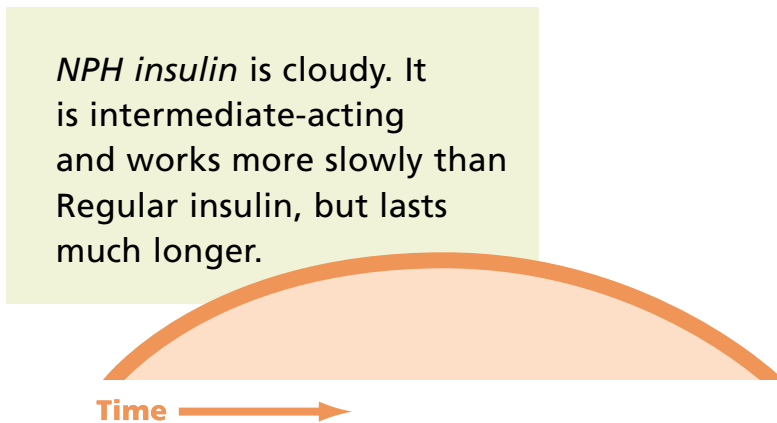
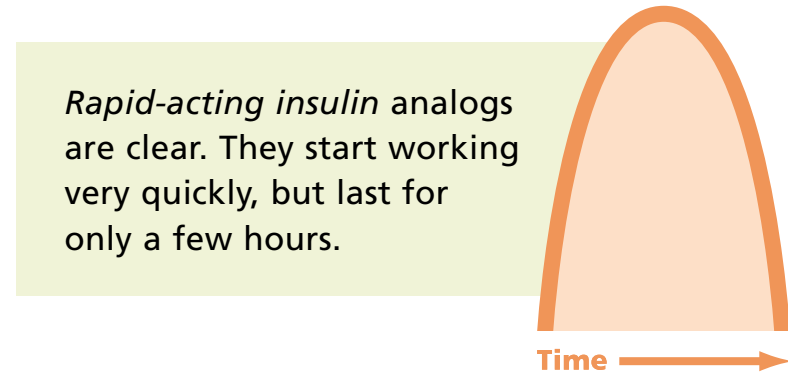
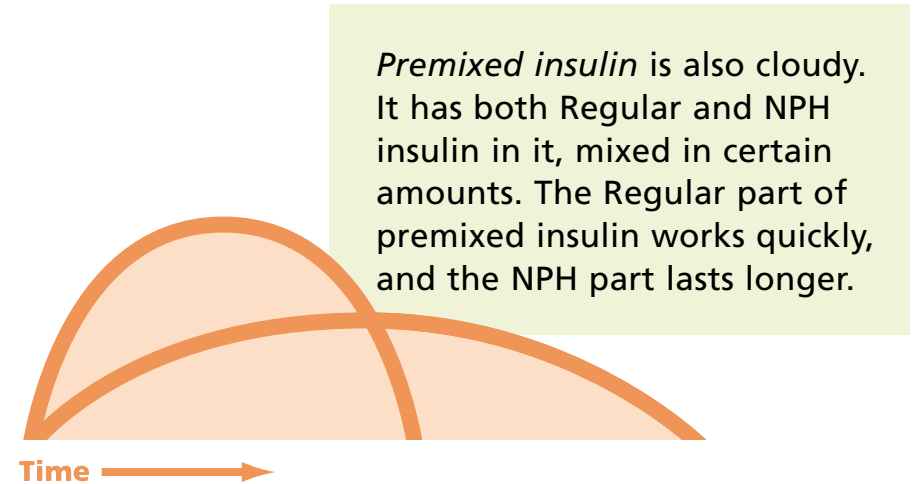
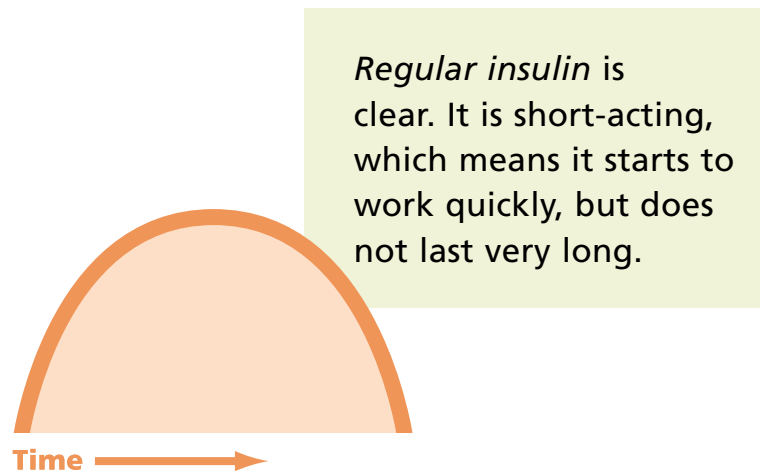
A problem called insulin resistance develops in most people with type 2 diabetes. In this condition, the body's cells and tissues can't use insulin properly. Some pills can help the cells and tissues use insulin better.

You and your health-care provider will decide what type of medicine is right for you. If you have any problems taking your pills, call your healthcare provider. Don't stop taking diabetes pills (or insulin) without talking to your healthcare provider first.



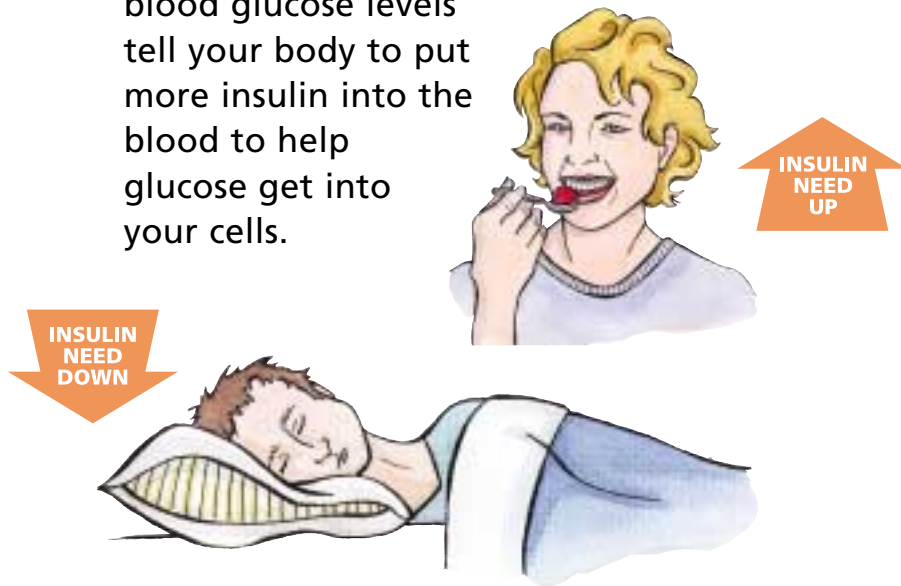
INSULIN

There are several different types of insulin. Some work for short periods of time, while others are longer-acting.



Taking insulin

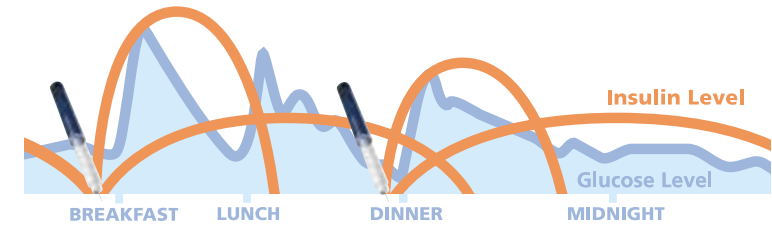
Insulin levels go up and down in your body depending on your need for glucose. For example, you usually need more insulin when you eat and less when you are sleeping. Blood glucose is often highest about an hour after a meal. High blood glucose levels tell your body to put more insulin into the blood to help glucose get into your cells.



Your insulin plan

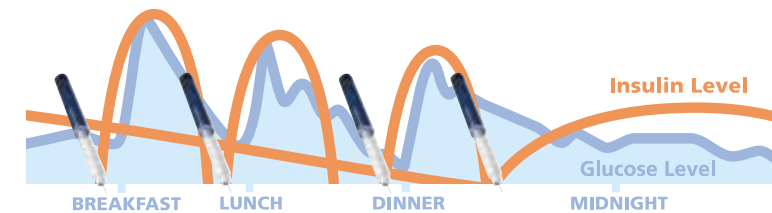
Your insulin plan will be based on your meal plan and your activity level. There are many different ways you can take insulin.

Here are examples of two insulin plans:



Two injections of premixed insulin (70% NPH, 30% Regular)

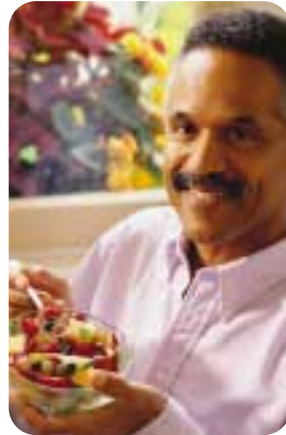
The morning dose covers breakfast and lunch. The evening dose covers dinner and overnight. With this plan, it's important that you eat your meals on time.



Three injections of a rapid-acting insulin analog, one injection of an intermediate- or long-acting insulin

Rapid-acting insulin analogs can be used for intensive insulin therapy. The goal of intensive therapy is to keep blood glucose levels as close to normal as possible. Intensive insulin therapy requires that you check your blood glucose levels often to avoid low blood glucose problems.

Intensive insulin therapy can give you a more flexible meal plan and may help you reduce your risk of diabetes complications (problems). If you already take insulin but are having trouble managing your blood glucose levels or want to know about different ways to lower your risk of diabetes-related problems, ask your healthcare provider about the benefits of intensive insulin therapy.



Beginning insulin therapy

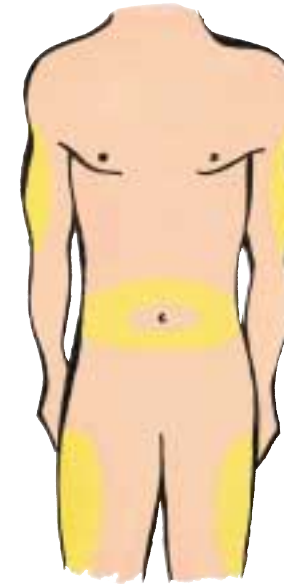
Your healthcare provider will help you develop an insulin plan that is right for you. It may take a while to find the insulin doses and injection times that work best for you.

Write down your insulin plan here:

	Breakfast	Lunch	Dinner	Bedtime
Type and Dose of Insulin				

Injecting insulin

How long it takes for insulin to start working depends on where you inject it. Insulin works best when injected into the fat layer just beneath the skin.



Common sites to inject insulin include the:

- Abdomen
- Arm
- Thigh

Your healthcare provider will help you decide where to inject your insulin. If you always inject insulin into the same area, change the exact place (move

an inch or two) each time. This will help your body use the insulin you inject properly.

Your healthcare provider will also show you how to give yourself an injection and answer any questions you may have about taking insulin.

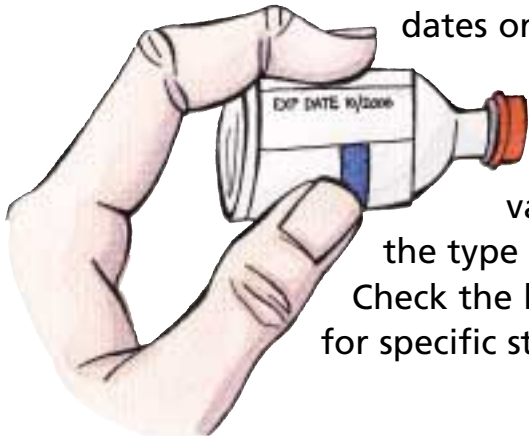


Storing insulin

Keep unopened insulin vials in the refrigerator. Don't let insulin freeze. It's okay to store an open insulin vial at room temperature if you use it within 30 days. Just be sure to keep it away from too much heat or cold and out of bright light and sunlight. It is important to remember to never use insulin after the expiration date printed on the label. Unopened insulin pens and cartridges should also be refrigerated. The labels and expiration



dates on these vary, so read the labels carefully. How to store insulin also varies depending on the type of insulin you take. Check the label of your insulin for specific storage information.



Disposing of supplies

All needle tips and syringes are disposable. Use them only once and then throw them away. Put all used syringes and needles in a strong container (one you can't punch a hole in) with a screw-on or tight-fitting lid.



The container should clearly state that used diabetes supplies which are unsafe to use are inside. The container should also bear a warning that it should not be opened. An example of the type of container to use is the "sharps" container sold by pharmacies for disposing of diabetes supplies.

Many states have laws on how to dispose of diabetes products. Talk to your pharmacist or local waste authority about how to do this correctly.



Insulin delivery systems

One method used to inject insulin is to use a syringe filled from a vial of insulin. A more convenient way is to use an insulin delivery system.

An example of a prefilled disposable insulin delivery system from Novo Nordisk is:

- **Novolin® InnoLet®**
Human Insulin (rDNA origin)
InnoLet is an accurate, convenient, affordable alternative to using syringes and vials.



Talk to your healthcare provider about whether an insulin delivery system might be right for you. You can also visit the Novo

Nordisk website www.insulindvice.com to learn more about insulin delivery systems.

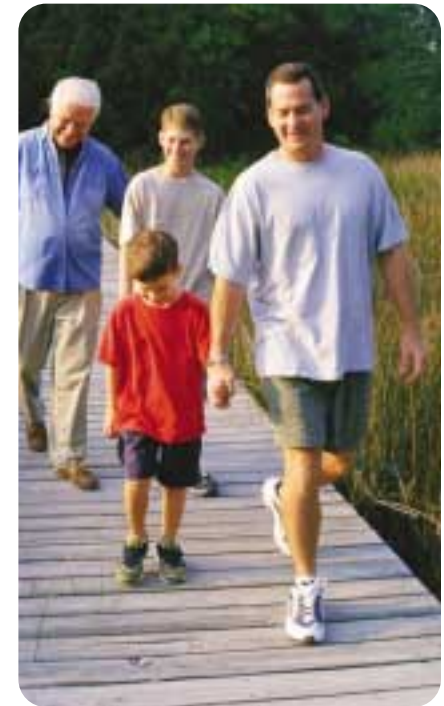
MANAGING YOUR BLOOD GLUCOSE

Why blood glucose testing is important

Testing your blood glucose often helps you determine if you are properly managing your blood glucose levels. Checking will also help you know:

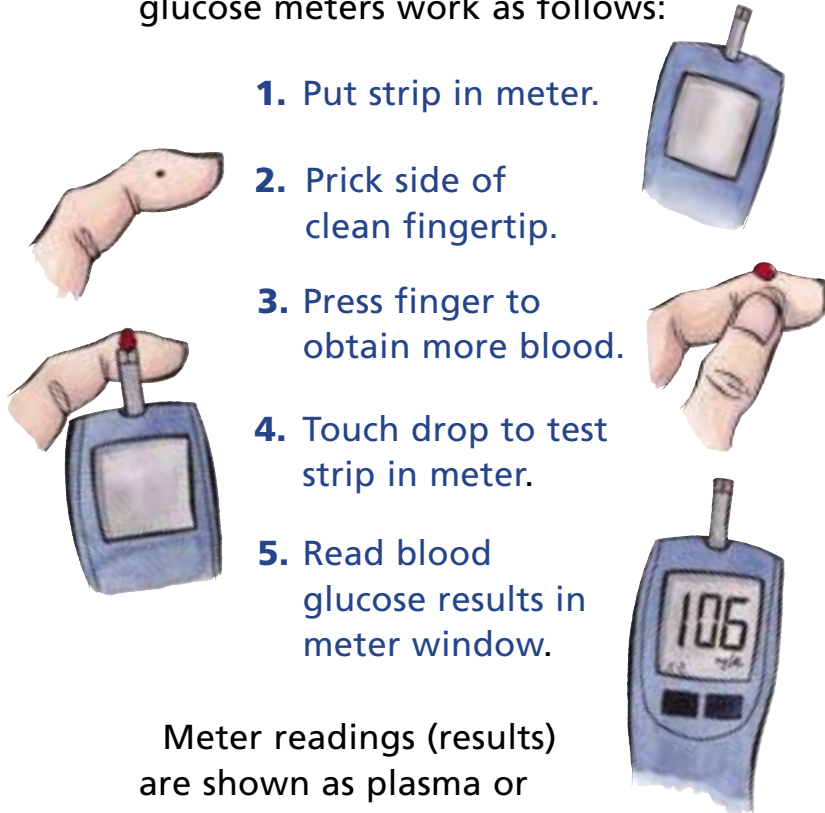
- If you are taking the right amount of diabetes medicine at the right times
- The effect of your meal plan on your blood glucose levels
- How your level of activity is affecting your blood glucose levels

You will usually feel better and have more energy when your blood glucose level stays at or near normal. Medical studies also show that keeping your blood glucose levels at or near normal may help to reduce your risk of diabetes-related problems.



How to check your blood glucose

You can check your blood glucose using a blood glucose meter. Your healthcare provider will help you choose a meter and show you how to use it. Many blood glucose meters work as follows:



Meter readings (results) are shown as plasma or whole blood glucose. It's important to know if your meter results are recorded as whole blood or plasma (whole blood readings are lower). Make sure you understand how to use your meter and how to record your results.

How often and when to test

Your healthcare provider will advise you on how often and when to check your blood glucose. If you take insulin, you may need to check your blood glucose before every injection or meal or after every meal. If you take diabetes pills and your blood glucose levels are stable, you may need to test once or twice a day.

To see how your eating and activity level affect your blood glucose levels, check at the same time each day. Examples of common blood glucose testing times are:

- When you wake up
- Before meals or large snacks
- 1 to 2 hours after meals or large snacks
- Before exercising and 15 minutes after exercising (to see how exercise affects your glucose levels)
- Before going to bed



Symptoms of low blood glucose

It is important to check your blood glucose right away if you think it may be low. The common signs or symptoms of low blood glucose (hypoglycemia) include:

- Weak or tired
- Hungry
- Dizzy or shaky
- Nervous or irritable



- Sweating
- Fast heartbeat
- Blurry vision
- Headache

A low blood glucose problem might occur if you:

- eat too little food or skip a meal
- take too much insulin
- are more active than usual

What to do about low blood glucose

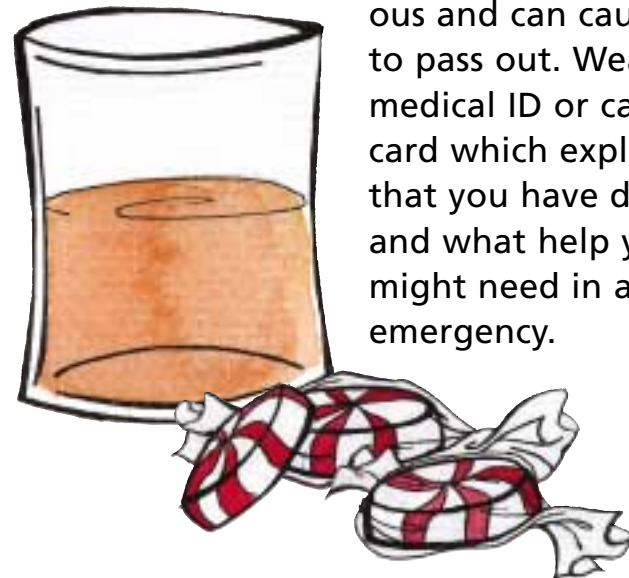
Test your blood if you have any signs of low blood glucose. To treat low blood glucose, eat a fast-acting high-carbohydrate food, such as:

- 3 to 4 glucose tablets
- 1/2 can of a regular soft drink (not diet!)
- a 4-ounce glass of regular fruit juice (such as orange, apple, or grape juice)
- 3 to 5 hard candies you can chew quickly, such as peppermints



Wait 15 minutes and then check your blood glucose again. If it is still low, treat again. Try not to be active until your blood glucose level is above 100 mg/dL.

Untreated low blood glucose is dangerous and can cause you to pass out. Wear a medical ID or carry a card which explains that you have diabetes and what help you might need in an emergency.



The symptoms of high blood glucose

Too much glucose in the blood (hyperglycemia) over time can cause health problems. High blood glucose can occur if you skip a dose of insulin or diabetes pills, eat more than usual, or are less active than usual. It can also occur if you are under stress, ill, or take certain medicines, such as cough syrup.

Common symptoms of high blood glucose are:



- Extreme thirst and hunger
- Need to urinate often
- Dry skin and mouth
- Blurry vision
- Drowsiness
- Slow-healing wounds or infections

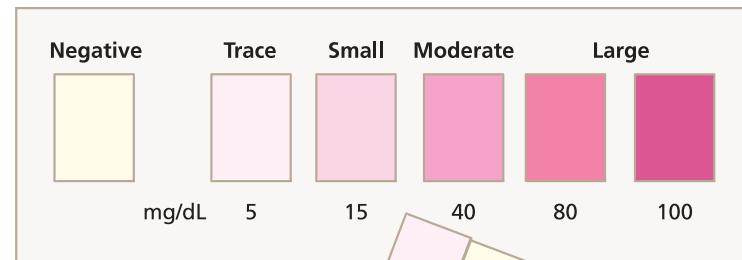


The best way to avoid high blood glucose problems is to follow your diabetes treatment plan. If your blood glucose is over 240 mg/dL or higher than your goal for 3 days in a row and you don't know why, call your healthcare provider.

Ketones

Your body may produce chemicals called ketones when you don't have enough insulin. A positive urine ketone test means that your body is using body fat for energy instead of glucose. Your glucose levels are out of control.

*Ketone Chart and Testing Strip**



*Illustration only. Do not use for testing.

Ketones are more likely to occur in people with type 1 diabetes. Check for ketones if your blood glucose is over 240 mg/dL.

High blood glucose levels with ketones can lead to diabetic ketoacidosis (DKA). This is a serious medical condition that must be treated immediately. Call your healthcare provider right away if you have a positive ketone test result and don't know what to do.

Keeping track of your blood glucose

Your healthcare provider will probably suggest you keep track of your blood glucose test results in a logbook or diary. A diary will help you see how well you are managing your blood glucose levels over time. You can also keep track of things that may affect your blood glucose levels, such as eating, exercise, and medications.

It is important to:

- Keep good records
- Have your diary handy to record your blood test results
- Bring your diary with you when you visit your healthcare provider

Your diary will help you and your diabetes-care team match your treatment plan to your eating and exercise habits.



Here is a sample of a diary page:

	Date	Time	Insulin Dose-Type or Pills	Breakfast	
				Before	After
M O N	1	6:30am	10u 70/30		
	7/22	2	3	6am 4 90 mg/dL	8am 150

Time

Blood Glucose Reading

Sample diary page guide

1. Record the date next to the day of the week.
2. Record the time you took your medicine.
3. Record the type and amount of your insulin dose or diabetes pills.
4. Record the time and your blood glucose readings in the "before" and "after" spaces. After meal readings are usually taken 1 to 2 hours after you begin your meal.
5. Record your urine ketone test results.
6. Keep good notes on anything that may have affected your blood glucose readings, such as food eaten, exercise (what type, how long), stress, or illness.

Urine Ketone Test	Notes (Meals and snacks, exercise, illness, stress or other significant events)
5 neg	6 walked one hour at 7pm took cough syrup at lunch

YOUR BLOOD GLUCOSE GOALS

The table below lists the blood glucose goals many diabetes experts recommend for people with diabetes. You and your healthcare provider will set goals for you based on your diabetes treatment plan. These goals may change over time depending on how well you are managing your diabetes. Write the blood glucose goals you and your healthcare provider have decided are best for you in the table below.

Blood Glucose Goals (Plasma Values)*

Time	For People With Diabetes	Your Goal
Before Meals	Less than 110 mg/dL	
2 Hours After Meals (postprandial)	Less than 140 mg/dL	
A1C	6.5% or less	

Values for *whole blood glucose* meter readings are about 10% lower.

Please refer to the instruction manual for your glucose meter to determine whether it reports the results as plasma or whole blood glucose.

* Adapted from the American College of Endocrinology (ACE). Consensus Statement on Guidelines for Glycemic Control. *Endocrine Practice*. 2002;8 (Suppl 1):S5-S11.

The A1C test (hemoglobin A1C)

The A1C test measures your average blood glucose level over the past 2 to 3 months. It is an accurate measure of how well you are managing your blood glucose over time. An A1C level of 6.5% or lower is recommended for people with diabetes. Medical studies have shown that keeping your blood glucose levels at or near normal over time, or lowering your A1C level by a percentage point or more, may significantly reduce your risk for diabetes complications.

The American Diabetes Association recommends an A1C test every 6 months if you are meeting your blood glucose goals. An A1C test every 3 months is recommended if you are not meeting your goals or if you change your diabetes treatment plan.

A1C Levels and Plasma Glucose Equivalents*

A1C Level	Mean Plasma Glucose
6%	135 mg/dL
7%	170 mg/dL
8%	205 mg/dL
9%	240 mg/dL
10%	275 mg/dL
11%	310 mg/dL
12%	345 mg/dL

* Adapted from Amer. Diabetes Association 2004 Guidelines.

MEAL PLANNING

Your meal plan is one of the most important parts of your diabetes treatment plan. It should consist of a variety of



healthy foods that will help you meet your daily nutritional needs. Your plan should be one that you will enjoy and find easy to follow.

The goals of your meal plan are to help you:

- Keep your blood glucose within your goal range
- Eat a variety of foods
- Include many of your favorite foods
- Reduce your risk of diabetes complications
- Manage your weight



Guidelines for healthy eating

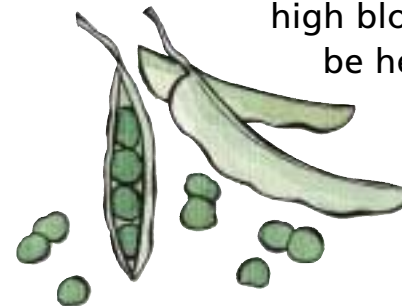
Nutrition experts recommend that you:

- ✓ Eat a wide variety of foods so you get enough of each nutrient
- ✓ Balance the number of calories you eat with your activity level
- ✓ Choose a diet rich in grains, vegetables, and fruits
- ✓ Limit your intake of fat, cholesterol, sugar, and salt
- ✓ Space your eating throughout the day



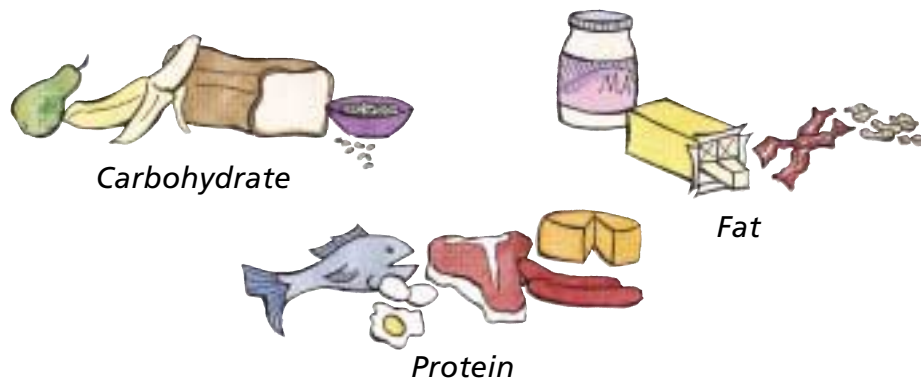
Many grains, vegetables, and fruits are high in fiber. A high-fiber diet may help lower your blood glucose and cholesterol levels. Eating too much fat, especially saturated fat, and cholesterol can lead to heart and blood vessel disease. If you have

high blood pressure, it may be helpful to eat less salt and to avoid using salt when cooking.



The nutrients in food

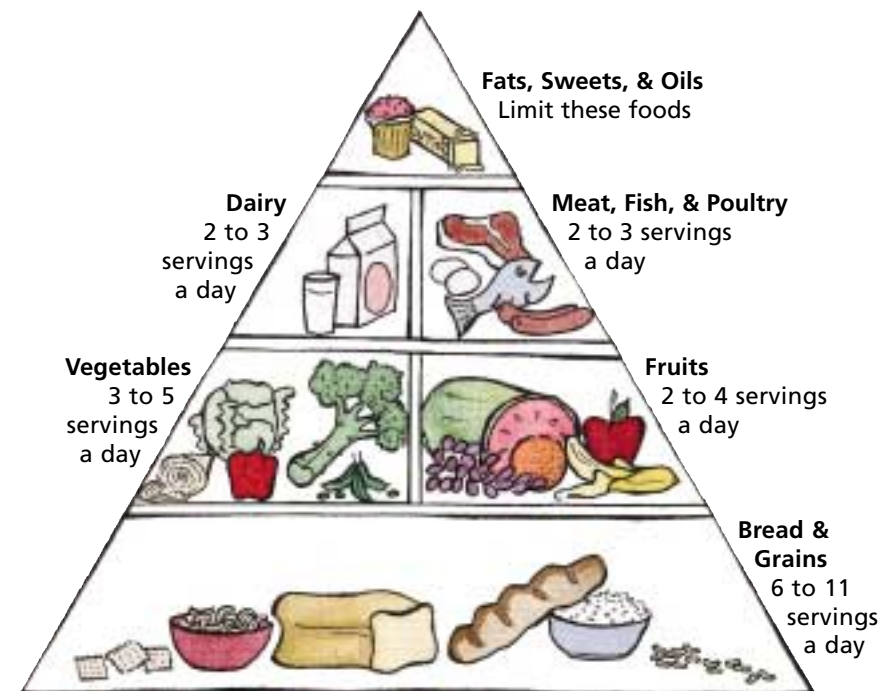
All foods have nutrients that your body needs to stay healthy. The nutrients that have calories are carbohydrate, protein, and fat. These 3 nutrients, along with vitamins and minerals, are found in many different foods. Eating a variety of foods will help to make sure you get enough of each nutrient in your diet every day.



Carbohydrate is the body's main source of energy. Protein and fat can also provide energy when carbohydrate is not available. Protein helps to build and repair body tissues. Fat has several roles. For instance, it helps make healthy skin and hair, and it carries certain vitamins throughout the body.

The Food Guide Pyramid

The Food Guide Pyramid is a useful guide for healthy eating. Most of the foods you eat each day should be from the groups of food in the lower parts of the pyramid. Eat smaller amounts of foods from the groups of food in the upper parts of the pyramid. The number of servings you should eat daily from each food group will depend on how many calories are in your meal plan.



Adapted from the U.S. Department of Agriculture and the U.S. Department of Health and Human Services guidelines.

Estimating serving sizes

The size of a single serving (portion of food) varies with the type of food. In the beginning, you may need to measure portions. You can also estimate portions using your hand. For example:

- Your fist equals 1 cup
- Your palm equals 3 ounces
- Your thumb equals 2 tablespoons or 1 ounce
- A handful equals 1 or 2 ounces of a snack food, such as nuts



You can also count the carbohydrate in your food and use food exchange lists to help plan your meals. For more information on meal planning, ask your healthcare provider for a copy of *Carb Counting and Exchange Lists*, part of the *Keeping Well With Diabetes* series.

Reading nutrition labels

All packaged foods have a Nutrition Facts label. The label lists a single serving size, calories per serving, and the number of grams of fat, cholesterol, sodium, carbohydrate, and protein per serving. Nutrition experts recommend that you limit your intake of the nutrients listed first on the label (fats, cholesterol, and sodium).

The % Daily Value (DV) next to each nutrient (cholesterol, vitamin, sodium, etc.) tells you how much of the total recommended daily intake of that nutrient you consume when you eat 1 serving of that food. These numbers are based on a 2,000-calorie diet. Your need for these nutrients may be higher or lower, depending on your calorie needs.

Check serving size

Limit these nutrients

Get enough of these

Nutrition Facts	
Serving Size 1 cup (228g)	
Servings Per Container 2	
Amounts Per Serving	
Calories 260	Calories from Fat 120
% Daily Value*	
Total Fat 13g	20%
Saturated Fat 5g	25%
Cholesterol 30mg	10%
Sodium 660mg	28%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A 4%	Vitamin C 2%
Calcium 15%	Iron 4%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
Calories:	2,000 2,500

Portion of Daily Value, 5% is low 20% is High

Illustration only.

Keeping track of your eating patterns

A good way to keep track of your eating patterns is to keep a food diary. Each time you eat, make a record in your diary.

These notes will help you and your healthcare provider or registered dietitian see how your eating (and other activities) affect your blood glucose levels.

Food Diary			
Date <i>October 17, 2003</i>			
Time	Type & Amount of Food	Activity During Meals	Feelings
<i>6:00 pm</i>	<i>2 oz. roast beef</i>	<i>watched TV</i>	<i>angry during</i>
1	<i>1 potato</i>	3	<i>meatime-kids</i>
	<i>1 cup broccoli</i>		<i>fighting</i>
	<i>1 tsp margarine</i>		4
	<i>salad</i>		
	<i>2 tbs salad dressing</i>		

- 1.** Time of meals and snacks
- 2.** Type and amount of food eaten
- 3.** Activity when eating
- 4.** Other comments related to the meal or snack

Your meal plan, exercise plan, or insulin plan may need to be adjusted if your blood glucose levels are often outside your goal range.

Managing your weight

Being overweight is not healthy for anyone and it may be especially harmful for people with diabetes. Weighing too much may:

- Make your heart work harder
- Cause you to tire easily
- Decrease your body's ability to use insulin

Many people with type 2 diabetes are overweight. One way to find out if you have a weight problem is to ask your healthcare provider to check your body mass index (BMI). BMI is a measure of weight in relation to height.

If your BMI is greater than 25 you are overweight.

Talk to your healthcare provider about weight management. Maintaining a healthy weight may help lower your risk for diabetes complications.



**BMI
OVER
25 = OVER
WEIGHT**

Tips for eating out

Healthy eating when eating out is the same as healthy eating any other time. Tips to remember include:



- Order foods that are grilled, broiled, or baked
- Avoid fatty meats and fried foods
- Look for “heart-healthy” or “lite” meals on the menu

You’ll want to be careful when ordering meals or snacks from fast-food restaurants.

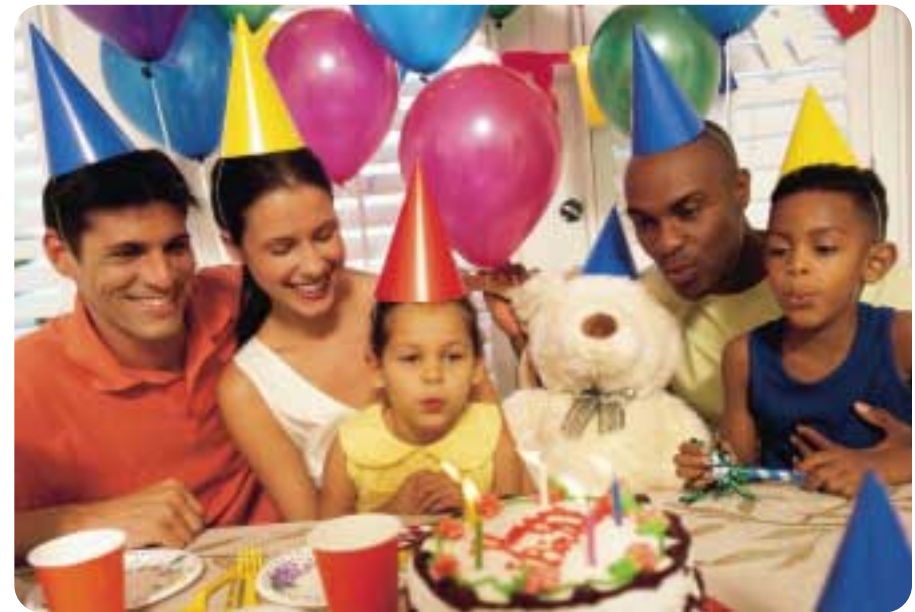
They often sell tempting high-calorie, high-fat, salty foods. Look for low-calorie, low-fat meal choices.

Serving sizes in restaurants tend to be large. To avoid overeating, you may choose to share your meal with someone else or take half of it home. You can ask the waiter about how a meal is prepared before you order it. If your order comes with a rich sauce or dressing, you may want to skip it or ask for it on the side.



Special meals

Holidays, birthdays, and other special events call for special planning. You may be faced with a lot of tasty, tempting foods. If you choose to eat a rich dessert, be sure to count the carbohydrate and calories in your meal plan.



If you are invited to someone’s home for a meal, watch your portion sizes. Ask what time the meal will be served. You may need to eat a snack before you leave home. Or, if you take insulin, you may need to adjust the timing of your pre-meal injection.

KEEPING FIT

Regular exercise and being active can help you:

- Manage your blood glucose
- Lower your blood pressure
- Reduce your risk for heart disease and stroke
- Reduce your need for insulin



Exercise can also help you:

- Manage your weight
- Strengthen bones, tone muscles, and improve flexibility
- Increase energy and relieve stress
- Improve how you look and feel

Choose a type of exercise

Always talk to your health-care provider before you start or change your exercise program.

Brisk walking is a safe and effective way to exercise that many people enjoy. Jogging, bicycling, swimming, and dancing are also great ways to exercise.



Find an activity you like

Choose an activity that you enjoy. You can vary your routine if you like. For instance, you could take a brisk walk 3 times a week and do yoga exercises or bicycle twice a week. For the greatest benefit, exercise 4 or 5 times a week for 20 to 30 minutes.

Carry ID and a snack just in case

Always carry identification when you exercise. Your ID should state that you have diabetes and list your medicines and an emergency phone number. A high-carb snack should *a/ways* be available when you exercise in case of a low blood glucose problem.



Check your blood glucose

If you inject insulin or take diabetes pills, check your blood glucose level:

- Before you start or change your exercise program
- If you change your medicine or meal plan

Never exercise if your blood glucose level is too low. If you have type 1 diabetes, do not exercise if you test positive for ketones. Exercise usually lowers blood glucose, but exercising with ketones present may make glucose levels rise.

No matter what type of diabetes you have, check your blood glucose within 15 minutes after you stop exercising. You

need to know how exercise affects your blood glucose levels.

For more information about diabetes and exercise, ask your healthcare provider for a copy of *Introduction to Exercise*, part of the *Keeping Well With Diabetes* series.

Keeping Well
WITH DIABETES

Introduction
to Exercise

Staying fit
with diabetes



When you are sick

You need to take special care of yourself when you are sick. Being ill may cause stress which can make it harder for you to manage your blood glucose levels and your need for insulin.

If you take insulin, call your healthcare provider if you are ill. You may need to increase your insulin dose.

Whether you have type 1 or type 2 diabetes, check your blood glucose and ketone levels every 3 to 4 hours when you're sick.

Drink plenty of liquids. Water is best, but plain tea (no sugar) or diet soda pop is also okay. Try to eat your normal meal plan. Even if your stomach is upset, try to eat some soft food, such as toast or soup. Keep taking your diabetes medicine as usual.

Ask your healthcare provider what blood glucose level or ketone test result would indicate you should call the office for help or information. Find out whom you should call when you are sick. Then call that person if you become ill.



AVOIDING DIABETES COMPLICATIONS

Untreated or poorly managed diabetes can cause short-term problems (such as low blood glucose) and long-term complications. It is important to reduce your risk of diabetes-related problems and to identify them early if they occur so they can be treated.

Long-term complications

Most long-term complications of diabetes are due to untreated high blood glucose levels. That's why your goal is to keep your blood glucose levels at or near normal.

Over time, high blood glucose can damage your blood vessels and nerves, which can lead to:

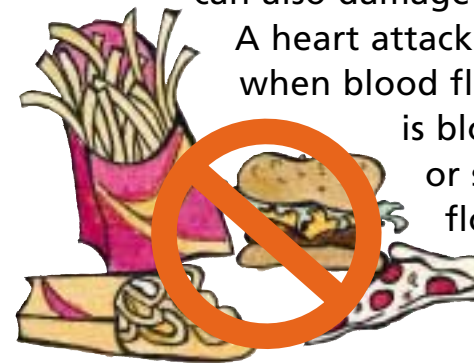
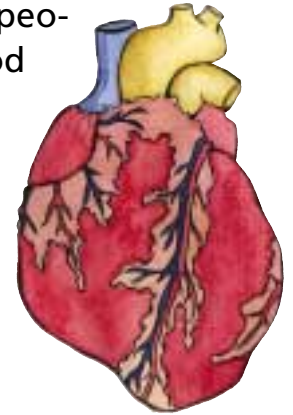
- Heart and blood vessel problems
- Eye disease
- Kidney disease
- Nerve disease
- Teeth, gum, and skin infections
- Problems with your legs and feet



Diabetes and cardiovascular disease

Heart and blood vessel disease (cardiovascular disease) is twice as likely to occur in people with diabetes as in other people. Most of these heart and blood vessel problems are due to a blockage or slowing down of blood flow in the body.

Eating foods high in saturated fat and cholesterol can lead to excess lipids (such as cholesterol and triglycerides) in your blood. Over time, these lipids can damage your blood vessels and cause circulatory problems. Uncontrolled high blood glucose levels and high blood pressure can also damage blood vessels.



A heart attack can happen when blood flow to the heart is blocked. Blocking or slowing of blood flow to the brain can cause a stroke.

Limit foods high in fat and cholesterol.

Protect your heart and blood vessels

You may be able to reduce your risk of heart or blood vessel disease if you:

- Keep your blood glucose levels as close to normal as possible
- Limit your intake of foods high in saturated fat and cholesterol
- Limit your use of salt and foods high in salt
- Control your blood pressure and lipid levels
- Don't smoke
- Exercise regularly (always see your healthcare provider before starting or changing your exercise program)



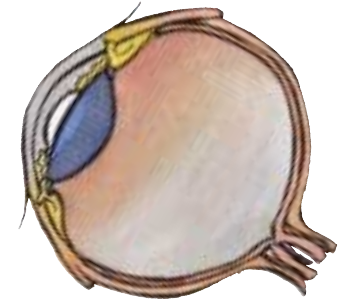
Chest pain, shortness of breath, or swollen ankles may be a sign of cardiovascular disease. Call your healthcare provider if you have any of these problems.

Protect your eyes

Diabetes can damage tiny blood vessels in your inner eye. It can also increase your risk of glaucoma, an eye disease caused by a buildup of pressure in the eyes. Either of these conditions can lead to vision problems or blindness.

You can reduce your risk of serious eye problems if you:

- Get a yearly dilated eye exam by an eye-care specialist
- Keep your blood glucose levels at or near normal
- Control your blood pressure



See an eye-care specialist if your vision becomes blurry or little specks appear to be floating before your eyes. These problems may be signs of eye damage.

Call your healthcare provider right away if you have any sudden change in your vision.



Protect your skin and feet

People with diabetes are more likely to have problems with their feet. Untreated foot problems caused by poor blood circulation, nerve damage, or infection may cause you to lose your toe, foot, or leg.

You can reduce your risk of problems with your feet by managing your blood glucose levels and protecting your feet. Call your healthcare provider if you have any of these warning signs of foot problems:

- Pain, numbness, or swelling in the feet or legs
- Sores that won't heal
- Skin color changes such as redness
- A cut, bruise, or any other foot injury



Tips for good foot care

- ✓ Keep your feet clean and dry.
- ✓ Don't take hot baths or showers.
- ✓ Use skin lotion to prevent dryness, but don't put it between your toes.
- ✓ Never go barefoot.
- ✓ Wear comfortable shoes and socks that fit well.
- ✓ Inspect your feet daily for cuts, bruises, or swelling. Use a mirror to see the bottoms of your feet.
- ✓ File your toenails straight across. Your healthcare provider may have you visit a podiatrist (a foot-care doctor) for foot care.
- ✓ Call your healthcare provider if you injure your feet in any way.



Protect your nerves, teeth, and kidneys

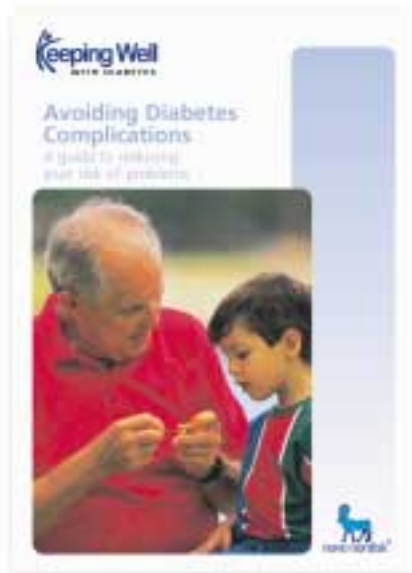
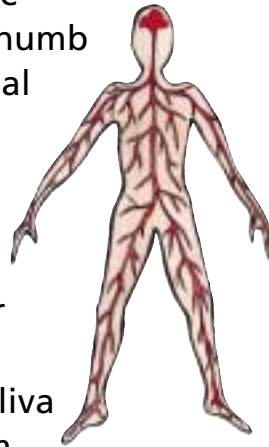
Managing your blood glucose levels can help you reduce your risk of kidney disease, nerve damage, and damage to your teeth and gums.

Signs of nerve damage include dizziness when you stand and numb or tingling hands or feet. Special tests are needed to determine if you are at risk for kidney problems. There may be no symptoms until kidney problems are severe, so regular checkups are important.

High glucose levels in your saliva can cause tooth decay and gum disease. Brush your teeth and tongue and floss your teeth after every meal. Get a

dental exam at least every 6 months and be sure to tell your dentist you have diabetes.

For more information, ask your healthcare provider for a copy of *Avoiding Diabetes Complications*, part of the *Keeping Well with Diabetes* series.



TESTS AND CHECKUPS

Frequent blood glucose testing, regular medical exams and tests, and immunizations (shots) when you need them can help reduce your risk of diabetes complications. It's up to you to get the medical tests, checkups, and immunizations you need when you need them. Cut out and keep this list as a handy reminder of what tests to have and when.

*Diabetes Care Schedule**

Every 3 Months	Regular office visit A1C test (if your blood glucose is not stable) Blood pressure check Weight check Foot check
Every 6 Months	A1C test (if your blood glucose is stable) Dental exam
Every Year	Physical exam Comprehensive foot exam Lipid profile (if your lipid levels are normal) Kidney tests (e.g., microalbumin test) Dilated eye exam Influenza vaccine (flu shot)

* These recommendations are ADA guidelines. Talk with your healthcare provider about how often you should have these done.

DIABETES AND YOUR FEELINGS

Stress is the feeling of tension or strain you experience because of too much physical or mental pressure. The stress of daily living, combined with managing diabetes every day, can affect your mood and emotions. Sometimes you may feel:



- Angry that you have diabetes
- Frustrated that you must change your life because of it
- Afraid that you won't be able to cope
- Worried about diabetes complications

Blood glucose changes can also cause stress. Low blood glucose can make you feel irritable or nervous. High blood glucose can make you feel tired or depressed.



How to handle stress

You can't escape some stress in life, but you can learn to manage it. It's often easier to cope with stress if your blood glucose levels are well-controlled. Talking

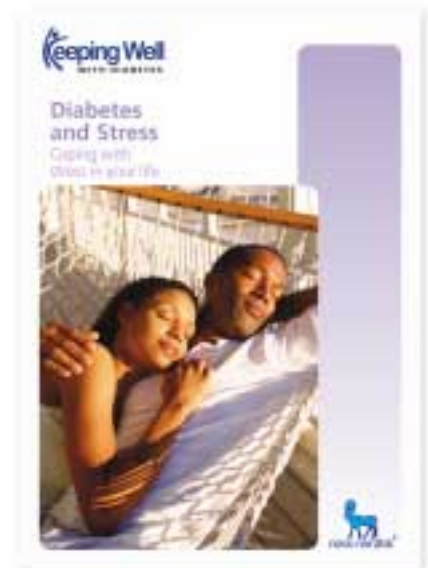


to family members, close friends, or a diabetes support group about the stress in your

life can also help. Other ways to handle stress include:

- Getting plenty of sleep
- Eating healthy foods
- Exercising regularly or being more active

For other useful ideas on how to manage stress, ask your healthcare provider for a copy of *Diabetes and Stress*, part of the *Keeping Well With Diabetes* series.



Depression and diabetes

The relationship between diabetes and depression is unclear. However, depression occurs more often in people with diabetes than in people who don't have diabetes. Depression doesn't mean feeling "blue" or down from time to time; it means feeling very sad or losing interest in



almost everything for weeks or months.

Other signs of depression include:

- Trouble sleeping
- Not being able to concentrate
- Eating too much or too little food

If you have any of these signs for more than a few weeks, tell your healthcare provider. If there's no physical cause for your depression, you may be referred to a mental health professional. Counseling, medicine, or both can often relieve depression.



DIABETES AT WORK

Talk to your healthcare provider about the kind of work you do or if you plan to change your type of work. Some changes may need to be made in your diabetes treatment plan. Be sure to tell your healthcare provider if you:

- Drive for a living or operate dangerous equipment
- Work different shifts
- Have a high stress job



You should be able to do almost any type of work with diabetes. But you may need to change your meal plan if you have a night job or a schedule that changes. You may also need to adjust your insulin, diabetes medicine, and exercise plan to fit your job.

Always keep a fast-acting carbohydrate snack handy at work in case you have a low blood glucose problem. If you feel symptoms of low blood glucose at any time, stop what you are doing and test



your blood glucose (if you can't test, treat anyway to be safe). If your glucose level is low, eat a snack, such as 3 or 4 glucose

tablets or 4 ounces of fruit juice. Wait 15 minutes and test your blood glucose level again. Don't drive, operate machinery, or do other work until you feel well and your blood glucose level is within your goal range.

There are a number of laws that require employers to permit you to take care of your diabetes at work. Talk to your healthcare provider for more information.



TRAVELING WITH DIABETES

Visit your healthcare provider

The key to safe, stress-free traveling is careful planning. Before you take a trip, visit your healthcare provider for a checkup. Ask for extra prescriptions in case you need medicine or supplies during your travels. Also, get prescriptions for medicines for motion sickness and diarrhea, just in case.



When traveling, keep insulin in a cool, dry place. Never leave insulin in a parked car or any other place where it can get too hot or too cold.

If you are traveling by plane, tell the airport security personnel you have diabetes and are carrying your diabetes medication and supplies with you. Your insulin vials and supplies should be in their original packaging with their original prescription labels. Keep lancets capped and be sure your blood glucose meter has the maker's name on it.

What to pack

Along with your main suitcase, pack a small bag to carry with you with all the supplies you'll need to manage your diabetes while traveling. Pack extra diabetes medicine and testing supplies in another bag in case you lose your supplies or run out.



Some important things to remember when traveling include:

- Wear or carry your "I have diabetes" ID
- Carry high-carbohydrate snacks
- Don't forget to exercise

For more tips on safe traveling, rules to follow when traveling by plane, and traveling out of the country, read *Traveling and Diabetes*, part of the *Keeping Well With Diabetes* series.

Keeping Well
WITH DIABETES

Traveling
and Diabetes
Tips for
Travelers



REVIEWING YOUR GOALS

Review how well your treatment plan is working each time you visit your health-care provider. Things you may want to talk about include:

- Are your blood glucose levels staying in your goal range?
- Have you been exercising regularly?
- Are you remembering to take your diabetes medicine as prescribed?

Be sure to bring up any problems you're having following your diabetes treatment plan.

Some of your goals may need to be changed. Or maybe your goals are fine, but your treatment plan needs to be changed to help you meet them.

Your diabetes-care team will work with you to adjust your treatment plan, if necessary.



WHAT HAVE I LEARNED?

This booklet is an introduction to diabetes. It explains how to take good care of yourself while you manage your diabetes and how to reduce your risk of diabetes complications.

You've learned why you need your own diabetes treatment plan. Your plan will help you to:

- Eat healthy, well-balanced meals at the right times
- Be physically active
- Manage your self-care (taking diabetes medicine, checking blood glucose, getting health checkups, etc.), and
- Work closely with your diabetes-care team



Millions of people are achieving their diabetes treatment goals. You can, too. You can work, travel, and do all the other things that make for a full and active life.

Keeping Well With Diabetes

We're pleased to offer you this booklet as part of the *Keeping Well With Diabetes* patient education program. But *Keeping Well With Diabetes* can bring you so much more.

When you become a member of *Keeping Well With Diabetes*, a FREE program just for people who take insulin, you'll receive tools and materials that can make a difference in your daily life. Simply complete and return the postage-paid card in this booklet, call 1-800-474-KWWD (1-800-474-5993), or visit our website at www.kwwd.com.

At *Keeping Well With Diabetes* Online, you'll find useful information on living with diabetes, online newsletters, and NovoTrack[®], a unique site that provides you with your own Personal Scorecard to keep track of your diabetes management.

Novo Nordisk has been a world leader in diabetes care and treatment for more than 80 years. We do all we can—every single day—to *continue* to bring you new products and new services designed to help you *keep well with diabetes*.





For additional information on
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 just for insulin users, call us at 1-800-727-6500.**

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Any change in insulin should be made
 cautiously and only under medical supervision.

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