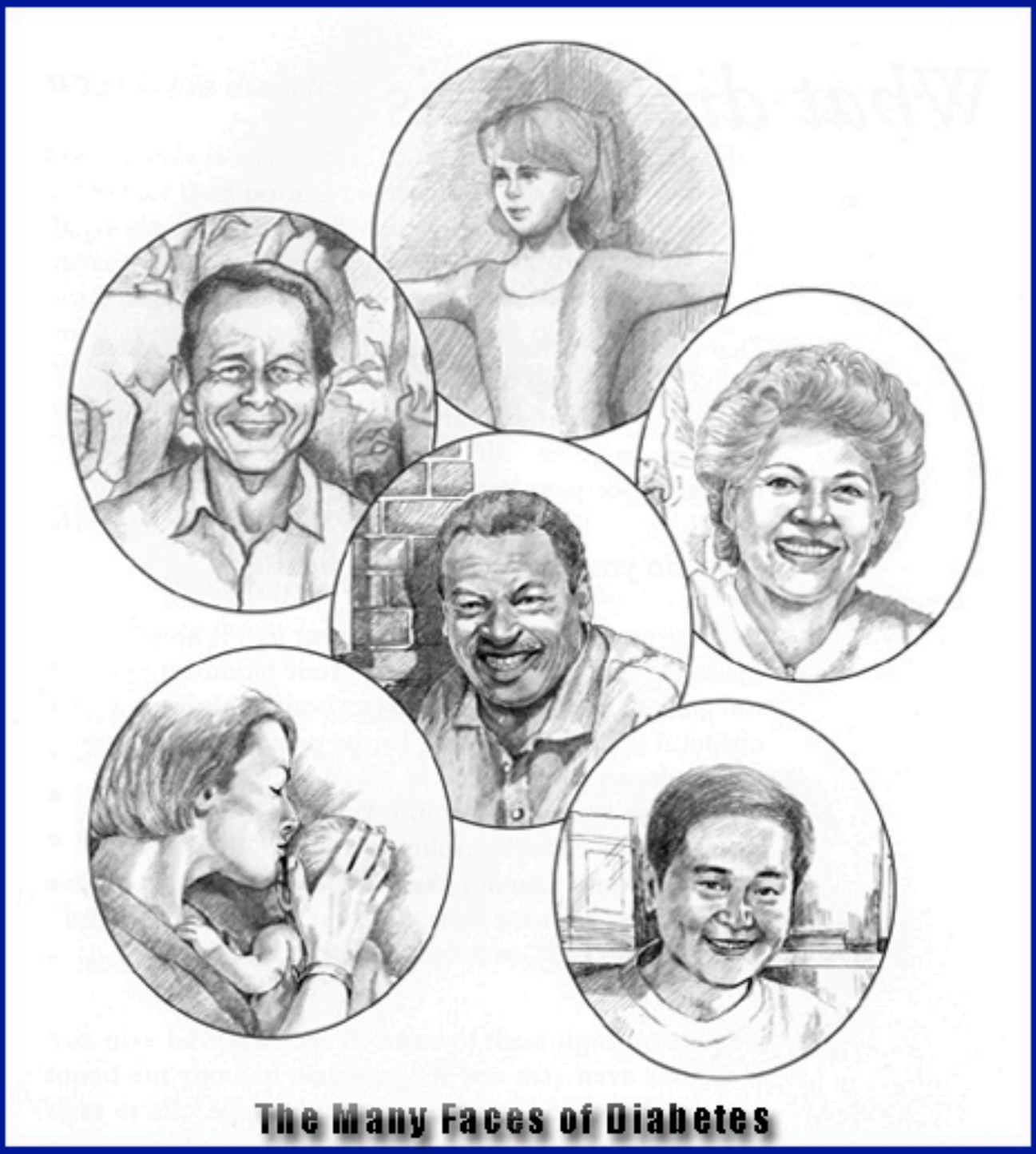
Your Guide to Diabetes

TYPE 1 & TYPE 2



Your Guide to Diabetes:

Type 1 and Type 2

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Introduction

Your health care provider says you have diabetes. This booklet will help you learn how to take care of your diabetes and how to prevent some of the serious problems that diabetes can cause. This booklet was written with help from people like you, (that is, people who have diabetes and wanted more information about it). We hope *Your Guide to Diabetes: Type 1 and Type 2* will answer many of your questions. You may want to share this booklet with your family and friends so that 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.

What Is Diabetes?

Diabetes means that 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.

What is pre-diabetes?

Pre-diabetes is a condition in which blood glucose levels are higher than normal but are 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 signs of diabetes?

The 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 diabetes, formerly called juvenile diabetes or insulin-dependent diabetes, is usually first diagnosed in children, teenagers, or young adults. In 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 shots or using an insulin pump, making wise food choices, exercising regularly, taking aspirin daily (for some), and controlling blood pressure and cholesterol.

Type 2 diabetes, formerly called adult-onset diabetes or noninsulin-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, exercising regularly, taking aspirin daily (for some), and controlling blood pressure and cholesterol.

Diabetes can start at any age.

A third type of diabetes occurs when 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.

This booklet is for people who have either type 1 diabetes or type 2 diabetes.

- ✓ If you use insulin, look at the white boxes for "Action Steps."
- ✓ If you don't use insulin, look at the gray boxes for "Action Steps."

What are some myths about diabetes?

Diabetes is a complex disease. You may have heard conflicting theories on what causes it, how it is diagnosed, and how it is managed. If you are affected by diabetes, you will want the facts about the disease. Here are some common myths that you may have heard:

Myth: There is no diabetes in my family, so I don't have to worry. Diabetes does run in families, but many people diagnosed with the disease have no close family members who have it. Lifestyle, heredity, and possibly other factors, such as certain viruses, may increase risk for the disease.

Myth: It's called sugar diabetes, so it must come from the sugar I eat. When you eat food, the body turns it into a form of energy called glucose, also known as "blood sugar." Glucose is not the refined sugar that you buy in stores. Insulin helps move the blood glucose into the body's cells for energy. When the body's own insulin does not work well or when not enough is made, the blood glucose level rises. Then the person has diabetes.

Myth: I'll know that I have diabetes by my symptoms. A person with type 1 diabetes, usually seen in children and young adults, will have obvious symptoms, because they have little or no insulin, the hormone that controls blood glucose level. However, people with type 2 diabetes, which usually occurs later in life, or women who have gestational diabetes, the special diabetes that only appears during pregnancy, may have milder or no symptoms since they still produce some insulin. Unfortunately, they don't make enough insulin, or it is not being used properly. Only a blood test can tell for sure if someone has diabetes.

Myth: By drinking water, I can wash away the extra sugar in my blood and cure my diabetes. Although you can wash away sugar spilled on a table, you cannot wash away high blood glucose level by drinking water. However, you can control diabetes by eating healthy foods, being physically active, controlling your weight, seeing your health care team regularly, taking prescribed medications, and monitoring your blood glucose.

Myth: Insulin is a cure for diabetes. Insulin is not a cure for diabetes. At this point, there is no cure; there are only medicines and behaviors that can control diabetes. Insulin helps to control diabetes by keeping the blood glucose from rising.

Myth: My friend takes insulin pills to control her diabetes. Insulin is a protein; it cannot be taken by mouth because the stomach would destroy it before it gets to the bloodstream. Insulin must be given by injection or insulin pump through the skin.
Diabetes pills help by making the body produce more insulin, use its own insulin better, produce less blood glucose from the liver, or limit carbohydrate absorption after a meal.

Myth: If I don't take diabetes medicine, my diabetes must not be serious. Not everyone who has diabetes takes medicine. If the body produces some insulin, weight loss, healthy eating habits, and regular physical activity can help insulin work more effectively. However, diabetes does change over time, and diabetes medicine may be needed later.

Myth: If I get diabetes, I will never be able to eat any sugar. To control one's blood glucose, all sources of carbohydrates must be controlled. Carbohydrates include starchy foods like pasta and bread as well as sugary foods like candy.
Even juice, milk, and fruit contain carbohydrates, so they must be eaten in moderate amounts. With careful planning, small amounts of sugar can replace other carbohydrates usually eaten at a meal. Too much sugar is bad for everyone. It provides only empty calories.

Myth: I have diabetes, and I've seen its affect on family members. I know there is nothing I can do about it. Remember that diabetes is serious, common, costly, and CONTROLLABLE. There are many things people with diabetes can do to live a full life, while preventing or delaying complications. You can control your diabetes by eating healthy foods, staying active, losing weight if needed, taking medicine as prescribed, testing your blood glucose, and seeing your health care team.

Why do you need to take care of your diabetes?

After many years, diabetes can lead to serious problems in 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. You may not even have the typical signs of a heart attack. Both women and men with diabetes are at risk.

You can reduce your risk of developing heart disease by controlling your blood pressure and blood fat levels. If you smoke, talk with your health care provider about quitting. Remember that every step toward your goals helps!

Later in this guide, we'll tell you how you can try to prevent or delay long-term problems. The best way to take care of your health is to work with your health care team to keep your blood glucose, blood pressure, and cholesterol in your target range.

What's a desirable 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 120. Blood glucose goes up after eating, but returns to the normal range 1 or 2 hours later.

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

When	My target levels
Before meals	_____
1 to 2 hours after the start of a meal	_____
At bedtime	_____

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.

NOTES:

Taking Care of Your Diabetes Every Day

Do four things to lower high blood glucose:

1. Follow your meal plan.
2. Get regular exercise.
3. Take your diabetes medicine.
4. Check your blood glucose.

Experts say most people with diabetes should try to keep their blood glucose level as close as possible to the level of someone who doesn't have diabetes. The closer to normal your blood glucose is, the lower your chances are of damaging your eyes, kidneys, feet, and nerves.

Your health care team will help you learn how to reach your target blood glucose range.

When you see your health care provider, ask lots of questions. Before you leave, be sure you understand everything you need to know about taking care of your diabetes.

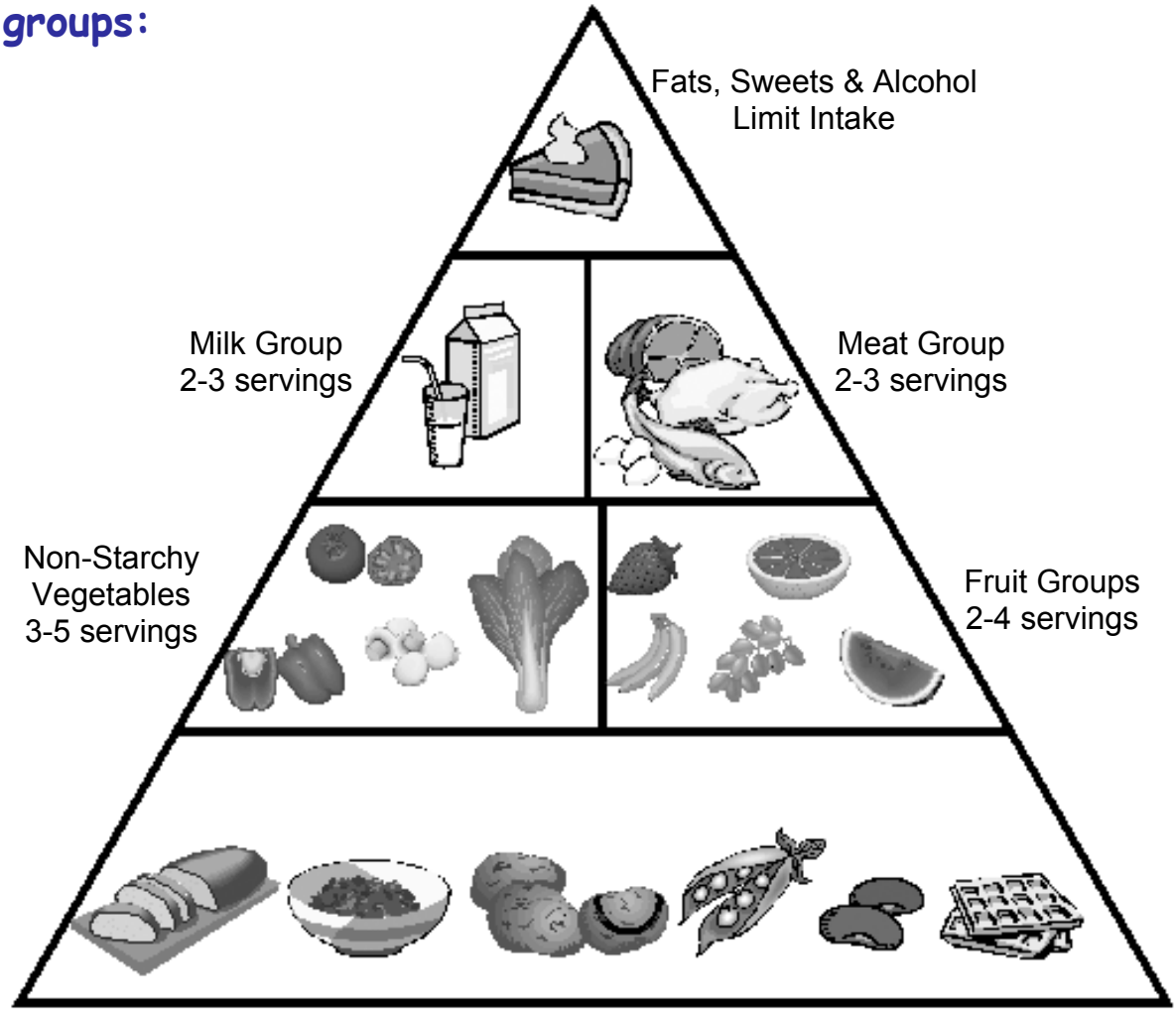
The next sections of this guide will tell you more about the four main ways you take care of your diabetes: Follow your meal plan, get regular exercise, take your diabetes medicine, and check your blood glucose.

Follow your meal plan

People with diabetes don't need to eat special foods. The foods on your meal plan are good for everyone in your family! Try to eat foods that are low in fat, salt, and sugar and high in fiber such as beans, fruits, vegetables, and grains. Eating right will help you:

- Reach and stay at a weight that's good for your body.
- Keep your blood glucose in a desirable range.
- Prevent heart and blood vessel disease.

Your daily meal plan should include foods from these groups:



Starch Group: Grains, Beans & Starchy Vegetables
Have at least 6 servings

People with diabetes should have their own meal plan. Ask your health care provider to give you the name of a dietitian who can work with you to develop a meal plan. Your dietitian can help you plan meals to include foods that you and your family like to eat and that are good for you too. Ask your dietitian to include foods that are heart-healthy to reduce your risk of heart disease.

ACTION STEPS

IF YOU USE INSULIN

- ✓ Follow your meal plan.
- ✓ Don't skip meals, especially if you've already taken your insulin, because your blood glucose may go too low. (See pages 27-29 for information on how to handle hypoglycemia, also called low blood sugar.)

ACTION STEPS

IF YOU DON'T USE INSULIN

- ✓ Follow your meal plan.
- ✓ Don't skip meals, especially if you take diabetes medicine, because your blood glucose may go too low. It may be better to eat several small meals during the day instead of one or two big meals.

Get regular exercise

Exercise is good for your diabetes. Walking, swimming, dancing, riding a bicycle, playing baseball, and bowling are all good ways to exercise. You can even get exercise when you clean house or work in your garden.

Exercise is especially good for people with diabetes because:

- Exercise helps keep weight down.
- Exercise helps insulin work better to lower blood glucose.
- Exercise is good for your heart and lungs.
- Exercise gives you more energy.

Before you begin exercising, talk with your health care provider. Your health care provider may check your heart and your feet to be sure you have no special problems. If you have high blood pressure or eye problems, some exercises like weightlifting may not be safe. Your health care team can help you find safe exercises.

Try to exercise almost every day for a total of about 30 minutes. If you haven't exercised lately, begin slowly. Start with 5 to 10 minutes, and then add more time. Or exercise for 10 minutes, three times a day.

If you haven't eaten for more than an hour or if your blood glucose is less than 100 to 120, have a snack before you exercise.

Being active helps you feel better.

When you exercise, carry glucose tablets or a carbohydrate snack with you in case you get hypoglycemia (low blood sugar). Wear or carry an identification tag or card saying that you have diabetes.

The organizations listed on pages 58 and 59 have more information about diabetes and exercise.

ACTION STEPS

IF YOU USE INSULIN

- ✓ See your health care provider before starting an exercise program.
- ✓ Check your blood glucose before, during, and after exercising. Don't exercise when your blood glucose is over 240 or if you have ketones in your urine (see page 23).
- ✓ Don't exercise right before you go to sleep, because it could cause hypoglycemia (low blood sugar) during the night.

ACTION STEPS

IF YOU DON'T USE INSULIN

- ✓ See your health care provider before starting an exercise program.

Take your diabetes medicine every day

Insulin and diabetes pills are the two kinds of medicines used to lower blood glucose.

If you use insulin

You need insulin if your body has stopped making insulin or if it doesn't make enough. Everyone with type 1 diabetes needs insulin, and many people with type 2 diabetes do too.

Insulin cannot be taken as a pill. You'll give yourself shots every day or use an insulin pump. Insulin pumps are small machines that connect to narrow tubing, ending with a needle just under the skin near the abdomen. Insulin is delivered through the needle.

Keep extra insulin in your refrigerator in case you break the bottle you're using. Don't keep insulin in the freezer or in hot places like the glove compartment of your car. Also, keep it away from bright light. Too much heat, cold, and bright light can damage insulin.

If you use a whole bottle of insulin within 30 days, you can keep that bottle at room temperature. If you don't use a whole bottle of insulin within 30 days, then store it in the refrigerator.

You may need insulin to control your blood glucose.

If you take diabetes pills

If your body makes insulin, but the insulin doesn't lower your blood glucose, you may need diabetes pills. Some pills are taken once a day, and others are taken more often. Ask your health care team when you should take your pills and how they work to lower your blood sugar.

Be sure to tell your health care provider if your pills make you feel sick or if you have any other problems. Remember, diabetes pills don't lower blood glucose all by themselves. You'll still want to follow a meal plan and exercise to help lower your blood glucose.

Sometimes, people who take diabetes pills may need insulin shots for a while. If you get sick or have surgery, the diabetes pills may no longer work to lower your blood glucose.

You may be able to stop taking diabetes pills if you lose weight. (Always check with your health care provider before you stop taking your diabetes pills.) Losing 10 or 15 pounds can sometimes help you reach your target blood glucose level.

Many people with type 2 diabetes take pills to help keep blood glucose in their target range.

If you don't use insulin or take diabetes pills

Many people with type 2 diabetes don't need insulin or diabetes pills. They can take care of their diabetes by using a meal plan and exercising regularly.

Check your blood glucose as recommended

You'll want to know how well you're taking care of your diabetes. The best way to find out is to check your blood to see how much glucose is in it. If your blood has too much or too little glucose, you may need a change in your meal plan, exercise plan, or medicine.

Checking your blood glucose will help you see if your diabetes treatment plan is working.

Some people check their blood glucose three to four times a day. Others do it once a day or several times a week if they are on stable doses of diabetes medicines. You may check before eating, before bed, and sometimes in the middle of the night. Ask your health care provider how often you should check your blood glucose.

Your health care provider or diabetes educator will show you how to check your blood using a blood glucose meter. Your health insurance or Medicare may pay for the supplies and equipment you need.

Take other tests for your diabetes

Urine tests

You may need to check your urine if you're sick or if your blood glucose is over 240. A urine test will tell you if you have ketones in your urine. Your body makes ketones when there isn't enough insulin in your blood. Ketones can make you very sick. Call your health care provider right away if you find ketones when you do a urine test. You may have a serious condition called ketoacidosis. If it isn't treated, it can cause death. Signs of ketoacidosis are vomiting, weakness, fast breathing, and a sweet smell on the breath. Ketoacidosis is more likely to develop in people with type 1 diabetes.

You can buy strips for testing ketones at a drug store. Your health care provider or diabetes educator will show you how to use them.

The A1C test

Another test for blood glucose, the A1C, also called the hemoglobin A1C test, shows what your overall blood glucose was for the past 3 months. It shows how much glucose is sticking to your red blood cells. Your health care provider does this test to see what your blood glucose is most of the time. Have this test done at least twice a year.

Ask your health care provider what your A1C test showed. A result of under 7 usually means that your diabetes treatment is working well and your blood glucose is under control. If your A1C is 8 or above, it means that your blood glucose may be too high. You'll then have a greater chance of getting diabetes problems, like kidney damage. You may need a change in your meal plan, exercise plan, or diabetes medicine.

Estimate of A1C	
Mean Blood Glucose	**Estimated A1C**
120 mg/dL glucose	6%
150 mg/dL glucose	7%
180 mg/dL glucose	8%
Every 30 mg/dL increase	1% increase

NOTES:

When Your Blood Glucose Is Too High or Too Low

Sometimes, no matter how hard you try to keep your blood glucose in your target range, it's too high or too low. Blood glucose that's too high or too low can make you very sick. Here's how to handle these emergencies.

What you need to know about high blood glucose

(hyperglycemia)

If your blood glucose stays over **180**, it may be too high. It means you don't have enough insulin in your body. High blood glucose can happen if you miss taking your diabetes medicine, eat too much, or don't get enough exercise. Sometimes, the medicines you take for other problems cause high blood glucose. Be sure to tell your health care provider about other medicines you take.

Having an infection or being sick or under stress can also make your blood glucose too high. That's why it's very important to check your blood glucose and keep taking your insulin or diabetes pills when you're sick. (For more information about how to take care of yourself when you're sick, see pages 46 - 54.)

If you're very thirsty and tired, have blurry vision, and have to urinate often, your blood glucose may be too high. Very high blood glucose may also make you feel sick to your stomach.

If your blood glucose is high much of the time or if you have symptoms of high blood glucose, call your health care provider.

You may need a change in your insulin or diabetes pills or a change in your meal plan.

What you need to know about low blood glucose

(hypoglycemia)

Hypoglycemia happens if your blood glucose drops too low. It can come on fast. It's caused by taking too much diabetes medicine, missing a meal, delaying a meal, exercising more than usual, or drinking too much alcohol. Sometimes, medicines you take for other health problems can cause blood glucose to drop.

Hypoglycemia can make you feel weak, confused, irritable, hungry, or tired. You may sweat a lot or get a headache. You may feel shaky. If your blood glucose drops lower, you could pass out or have a seizure.

If you have any of these symptoms, check your blood glucose. If the level is 70 or below, have one of the following right away:

- 3 glucose tablets
- 1/2 cup (4 oz.) of any fruit juice
- a piece of fruit or a small box of raisins
- 1/2 cup (4 oz.) of a regular (not diet) soft drink
- 5 or 6 pieces of hard candy
- 1 or 2 teaspoons of sugar or honey
- small tube of cake frosting gel

Have one of these "quick fix" foods when your blood glucose is low.

After 15 minutes, check your blood glucose again to make sure that it's no longer too low. If it is still below 70, give yourself 3 more glucose tablets or another "quick fix" food listed above. Once your blood glucose is stable, if it will be at least an hour before your next meal, have a snack.

If you take insulin or a diabetes pill that can cause hypoglycemia, always carry food for emergencies. It's a good idea also to wear a medical identification bracelet or necklace.

If you take insulin, keep a glucagon kit at home and also at a few other places where you go often. Glucagon is given as an injection with a syringe and quickly raises blood glucose.

Show your family, friends, and co-workers how to give you a glucagon injection if you pass out because of hypoglycemia.

You can prevent hypoglycemia by eating regular meals, taking your diabetes medicine, and checking your blood glucose often. Checking will tell you whether your glucose level is going down. You can then take steps, like eating some fruit, crackers, or other snacks, to raise your blood glucose.

When you have hypoglycemia, have a snack to bring your blood glucose back to normal.

ACTION STEPS

IF YOU USE INSULIN

- ✓ Tell your health care provider if you have hypoglycemia often, especially at the same time of the day or night several times in a row.
- ✓ Tell your health care provider if you've passed out from hypoglycemia.
- ✓ Ask your health care provider about glucagon. Glucagon is a medicine that raises blood glucose. If you pass out from hypoglycemia, someone should call 911 and give you a glucagon shot.

ACTION STEPS

IF YOU DON'T USE INSULIN

- ✓ Tell your health care provider if you have hypoglycemia often, especially at the same time of the day or night several times in a row.
- ✓ Be sure to tell your health care provider about other medicines you are taking.
- ✓ Some diabetes pills can cause hypoglycemia. Ask your health care provider whether your pills can cause hypoglycemia.

NOTES:

Why It's Important to Take Care of Your Diabetes

Taking care of your diabetes every day will help keep your blood glucose in your target range and help prevent other health problems that diabetes can cause over the years. This part of the guide describes those problems. We tell you about them not to scare you, but to help you understand what you can do to keep them from happening.

Do what you can every day to keep your blood glucose in the range that's best for you.

Starch Group: Grains, Beans & Starchy Vegetables
Have at least 6 servings

Follow your meal plan every day.

Get regular exercise every day.

Take your diabetes medicine every day.

Check your blood glucose as recommended.

Diabetes and your heart and blood vessels

The biggest problem for people with diabetes is heart and blood vessel disease. Heart and blood vessel disease can lead to heart attacks and strokes. It also causes poor blood flow (circulation) in the legs and feet.

To check for heart and blood vessel disease, your health care team will do some tests. At least once a year, have a blood test to see how much cholesterol is in your blood. Your health care provider should take your blood pressure at every visit. He or she may also check the circulation in your legs, feet, and neck.

The best way to prevent heart and blood vessel disease is to take good care of yourself and your diabetes.

- Eat foods that are low in fat and salt.
- Keep your blood glucose on track - know your A1C. The target for most people is under 7.
- If you smoke, quit.
- Exercise regularly.
- Lose weight if you need to.
- Ask your health care team whether you should take an aspirin every day.
- Keep your blood pressure on track. If needed, take medicine to control your blood pressure.
- Keep your cholesterol level on track. If needed, take medicine to control your blood fat levels.

What's a desirable blood pressure level?

Blood pressure levels tell how much your blood is pushing against the walls of your blood vessels. Your pressure is given as two numbers: The first is the pressure as your heart beats, and the second is the pressure as your heart relaxes. If your blood pressure is higher than your target, talk with your health care team about changing your meal plan, reducing salt intake, adding exercise, or taking medicine.

What are desirable blood fat levels?

Cholesterol, a fat found in the body, appears in different forms. If your LDL cholesterol ("bad" cholesterol) is 100 or above, you are at increased risk of heart disease and may need treatment. A high level of total cholesterol also means a greater risk of heart disease. But HDL cholesterol ("good" cholesterol) protects you from heart disease, so the higher it is, the better. It's best to keep triglyceride (another type of fat) levels under 200. Target numbers are determined by you and your health care provider depending on your risk factors.

My target levels

A1C	My last result_____	My target_____
Blood Pressure	My last result_____	My target_____
Total cholesterol	My last result_____	My target_____
LDL cholesterol	My last result_____	My target_____
HDL cholesterol	My last result_____	My target_____
Triglycerides	My last result_____	My target_____

Rose is 55 years old and teaches at a junior high school on an American Indian reservation in New Mexico. Rose has had type 2 diabetes for almost 10 years. When she first found out she had diabetes, she weighed too much and didn't get much exercise. After talking it over with her health care provider, Rose began an exercise program. She lost weight, and her blood glucose began to come down. She felt better too. Now Rose teaches an exercise class in her spare time.

Diabetes and your eyes

Have your eyes checked once a year. You could have eye problems that you haven't noticed yet. It is important to catch eye problems early when they can be treated. Treating eye problems early can help prevent blindness.

High blood glucose can make the blood vessels in the eyes bleed. This bleeding can lead to blindness. You can help prevent eye damage by keeping your blood glucose as close to normal as possible. If your eyes are already damaged, an eye doctor may be able to save your sight with laser treatments or surgery.

The best way to prevent eye disease is to have a yearly eye exam. In this exam, the eye doctor puts drops in your eyes to make your pupils get bigger (dilate).

When the pupils are big, the doctor can see into the back of the eye. This is called a dilated eye exam, and it doesn't hurt. If you've never had this kind of eye exam before, you should have one now, even if you haven't had any trouble with your eyes. Be sure to tell your eye doctor that you have diabetes.

Here are some tips for taking care of your eyes:

1. For people with type 1 diabetes: Have your eyes examined when you have had diabetes for 3 years and every year after that first exam.
2. For people with type 2 diabetes: Have an eye exam every year.
3. For women planning to have a baby: Have an eye exam before becoming pregnant.
4. If you smoke, quit.
5. Keep your blood glucose and blood pressure as close to normal as possible.

Tell your eye doctor right away if you have any problems like blurry vision or seeing dark spots, flashing lights, or rings around lights.

See your eye doctor for an eye exam with dilated pupils every year. Early treatment of eye problems can help save your sight.

Diabetes and your kidneys

Your kidneys help clean waste products from your blood. They also work to keep the right balance of salt and fluid in your body.

Too much glucose in your blood is very hard on your kidneys. After a number of years, high blood glucose can cause the kidneys to stop working. This condition is called kidney failure. If your kidneys stop working, you'll need dialysis (using a machine or special fluids to clean your blood) or a kidney transplant. Have a urine test once a year for signs of kidney damage. The test measures how much protein is in your urine. A blood pressure medicine (called an ACE inhibitor) has been shown to help prevent kidney damage. Ask your health care provider whether this medicine could help you. Other ways to help prevent kidney problems are to:

- Take your medicine if you have high blood pressure.
- Ask your health care provider or your dietitian whether you should eat less meat, cheese, milk, and fish or fewer eggs.

- See your health care provider right away if you get a bladder or kidney infection. Signs of bladder or kidney infections are cloudy or bloody urine, pain or burning when you urinate, and having to urinate often or in a hurry. Back pain, chills, and fever are also signs of kidney infection.

- Keep your blood glucose and blood pressure as close to normal as possible.

- If you smoke, quit.

Mike is a farmer with type 2 diabetes and high blood pressure. Mike, 47, is married, and he and his wife have three children. Mike has his blood pressure and kidneys checked at the clinic. The clinic also offers diabetes classes. Whenever they can, Mike and his wife attend these classes. They especially like the cooking classes because they learn how to prepare low-cost, healthy meals for the whole family.

Diabetes and your feet and nerves

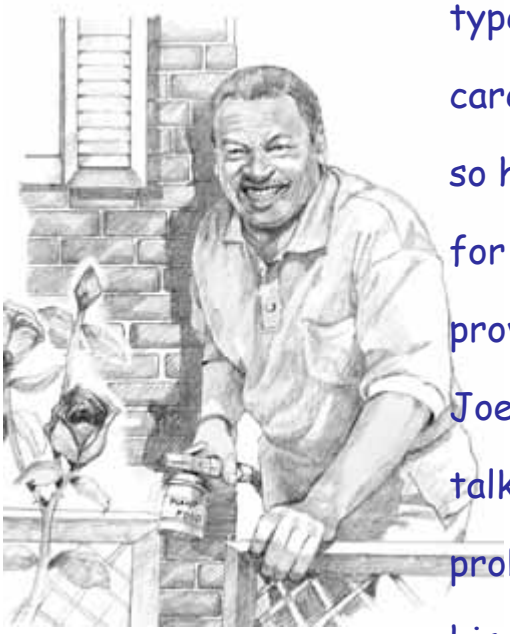
Over time, high blood glucose can harm the nerves in your body. Nerve damage can cause you to lose the feeling in your feet or to have painful, burning feet. It can also cause pain in your legs, arms, or hands or cause problems with eating, going to the bathroom, or having sex.

Nerve damage can happen slowly. You may not even realize you have nerve problems. Your health care provider should check your nerves at least once a year. Part of this exam should include tests to check your sense of feeling and pulses in your feet.

Tell your health care provider about any problems with your feet, legs, hands, or arms. Also, tell your health care provider if you have trouble eating, going to the bathroom, or having sex, or if you feel dizzy sometimes.

Nerve damage to the feet can lead to amputations. You may not feel pain from injuries or sore spots on your feet. If you have poor circulation because of blood vessel problems in your legs, the sores on your feet can't heal and might become infected. If the infection isn't treated, it could lead to amputation.

Ask your health care provider whether you already have nerve damage in your feet. If you do, it is especially important to take good care of your feet. To help prevent complications from nerve damage, check your feet every day (see Foot Care Tips).



Joe is a 65-year-old retired letter carrier with type 2 diabetes. Every time he visits his health care provider, he takes his shoes and socks off so his health care provider can check his feet for sores, ulcers, and wounds. The health care provider also checks the sense of feeling in Joe's feet. Joe and his health care provider talk about ways to prevent foot and nerve problems. Since Joe has lost some feeling in his toes, his health care provider also talks to him about the importance of good foot care and keeping his blood glucose in a good range.

Here are some ways to take care of your feet and nerves:

- Keep your blood glucose and blood pressure as close to normal as possible.
- Limit the amount of alcohol you drink.
- Check your feet every day.
- If you smoke, quit.

You can do a lot to prevent problems with your feet. Keeping your blood glucose in your target range and taking care of your feet can help protect them.

Foot Care Tips

- ✓ Check your bare feet every day. Look for cuts, sores, bumps, or red spots. Use a mirror or ask a family member for help if you have trouble seeing the bottoms of your feet.
- ✓ Wash your feet in warm--not hot--water every day, but don't soak them. Use mild soap. Dry your feet with a soft towel, and dry carefully between your toes.
- ✓ After washing your feet, cover them with lotion before putting your shoes and socks on. Don't put lotion or cream between your toes.
- ✓ File your toenails straight across with an emery board. Don't leave sharp edges that could cut the next toe.
- ✓ Don't try to cut calluses or corns off with a razor blade or knife, and don't use wart removers on your feet. If you have warts or painful corns or calluses, see a podiatrist, a doctor who treats foot problems.

- ✓ Wear thick, soft socks. Don't wear mended stockings or stockings with holes or seams that might rub against your feet.
- ✓ Check your shoes before you put them on to be sure they have no sharp edges or objects in them.
- ✓ Wear shoes that fit well and let your toes move. Break new shoes in slowly. Don't wear flip-flops, shoes with pointed toes, or plastic shoes. Never go barefoot.
- ✓ Wear socks if your feet get cold at night. Don't use heating pads or hot water bottles on your feet.
- ✓ Have your health care provider check your feet at every visit. Take your shoes and socks off when you go into the examining room. This will remind the health care provider to check your feet.
- ✓ See a podiatrist for help if you can't take care of your feet yourself.

Diabetes and your gums and teeth

Diabetes can lead to infections in your gums and the bones that hold your teeth in place. Signs of gum disease can be sore, swollen, or red gums that bleed when you brush. These signs may not always occur. Like all infections, gum infections can cause blood glucose to rise. Without treatment, teeth may become loose and fall out.

To help prevent damage to your gums and teeth,

- See your dentist twice a year. Tell your dentist that you have diabetes.
- Brush and floss your teeth at least twice a day.
- If you smoke, quit.
- Keep your blood glucose as close to normal as possible.

Keeping your blood glucose in your target range, brushing and flossing your teeth every day, and having regular dental checkups are the best ways to prevent gum and teeth problems when you have diabetes.

James runs a bookstore in California. He's 35 years old and has had type 1 diabetes for 15 years. James takes good care of his teeth and sees his dentist twice a year. He makes his appointments in the morning, after breakfast, so he won't get hypoglycemia while at the dentist. He also carries glucose tablets and wears an identification bracelet that has the name and the telephone number of his health care provider on it.

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Taking Care of Your Diabetes at Special Times

Diabetes is part of your life. It's very important to take care of it when you're sick, when you're at school or work, when you travel, or when you're pregnant or thinking about having a baby. Here are some tips to help you take care of your diabetes at these times.

When you're sick

Take good care of yourself when you have a cold, the flu, an infection, or other illness. Being sick can raise your blood glucose. When you're sick:

- Check your blood glucose every 4 hours. Write down the results.
- Keep taking your insulin and your diabetes pills. Even if you can't keep food down, you still need your diabetes medicine. Ask your health care provider or diabetes educator whether to change the amount of insulin or pills you take.
- Drink at least a cup (8 ounces) of water or other calorie-free, caffeine-free liquid every hour while you're awake.
- If you can't eat your usual food, try drinking juice or eating crackers, popsicles, or soup.

- If you can't eat at all, drink clear liquids such as ginger ale. Eat or drink something with sugar in it if you have trouble keeping food down.
- Test your urine for ketones if:
  - your blood glucose is over 240
  - you can't keep food or liquids down
- Call your health care provider **right away** if you:
  - have a blood glucose over 240 for longer than a day
  - have moderate to large amounts of ketones in your urine
  - feel sleepier than usual
  - have trouble breathing
  - can't think clearly
  - throw up more than once
  - have had diarrhea for more than 6 hours

ACTION STEPS

IF YOU USE INSULIN

- ✓ Take your insulin, even if you've been throwing up. Ask your health care provider about how to adjust your insulin dose, based on your blood glucose test results.

ACTION STEPS

IF YOU DON'T USE INSULIN

- ✓ Take your diabetes pills, but call your health care provider if you've been throwing up.

When you're at school or work

Take care of your diabetes when you're at school or at work:

- Follow your meal plan.
- Take your medicine and check your blood glucose as usual.
- Tell your teachers, friends, or close co-workers about the signs of hypoglycemia. You may need their help if your blood glucose drops too low.
- Keep snacks nearby and carry some with you at all times to treat hypoglycemia.

- Tell your company nurse or school nurse that you have diabetes.

When you're away from home

Taking care of your diabetes, even on vacation, is very important. Here are some tips:

- Follow your meal plan as much as possible when you eat out. Always carry a snack with you in case you have to wait to be served.
- Limit your drinking of beer, wine, or other alcoholic beverages. Ask your diabetes educator how much alcohol you can safely drink. Eat something when you drink.
- If you're taking a long trip by car, check your blood glucose before driving. Stop and check your blood glucose every 2 hours. Always carry snacks like fruit, crackers, juice, or soda in the car in case your blood glucose drops too low.
- Prepare ahead of time if you are traveling by plane. Carry food with you.
- Carry your medicines (insulin, insulin needles, and diabetes pills) and your blood testing supplies with you. Never put them in the suitcase you don't carry with you on the plane or train.
- Ask your health care team how to adjust your medicines, especially your insulin, if you're traveling across time zones.

- Take comfortable, well-fitting shoes on vacation. You'll probably be walking more than usual, so you should take extra care of your feet.
- If you're going to be away for a long time, ask your health care provider for a written prescription for your diabetes medicine and the name of a health care provider in the place you're going to visit.
- Don't count on buying extra supplies when you're traveling, especially if you're going to another country. Different countries use different kinds of insulin, needles, and pills.

ACTION STEPS

IF YOU USE INSULIN

When you travel,

- ✓ Buy special insulated bags to carry your insulin and to keep it from freezing or getting too hot.
- ✓ Take extra needles, insulin, and blood glucose test strips in case of loss or breakage.
- ✓ If you're going to another country, ask your health care provider for a letter saying that you have diabetes and need insulin shots. If asked, show the letter to the customs people.

When you're planning a pregnancy

Planning ahead is very important if you want to have a baby. High blood glucose can be harmful to both a mother and her unborn baby. Even **before** you become pregnant, your blood glucose should be close to the normal range. Keeping blood glucose near normal **before** and **during** pregnancy helps protect both mother and baby.

Your insulin needs may change when you're pregnant. Your health care provider may want you to take more insulin and check your blood glucose more often. If you take diabetes pills, your health care provider will switch you to insulin when you're pregnant.
If you plan to have a baby:

- Work with your health care team to get your blood glucose as close to the normal range as possible.
- See a health care provider who has experience in taking care of pregnant women with diabetes.
- Have your eyes and kidneys checked. Pregnancy can make eye and kidney problems worse.
- Don't smoke, drink alcohol, or use harmful drugs.
- Follow the meal plan you get from your dietitian or diabetes educator to make sure you and your unborn baby have a healthy diet.

If you're already pregnant, see your health care provider right away. It's not too late to bring your blood glucose close to normal so that you'll stay healthy during the rest of your pregnancy.

Maria, a 25-year-old woman with type 1 diabetes, wanted children. Her health care provider told Maria and her husband that before she got pregnant, her blood glucose should be close to normal and her kidneys, eyes, and blood pressure should be checked. Maria began to watch her diabetes very carefully. She checked her blood glucose four times a day, ate healthy meals, began to walk a lot, and checked her blood and urine often to make sure that her body was healthy enough to carry a baby.

Once Maria became pregnant, she spent a lot of time taking care of her diabetes. Her hard work paid off. After 9 months, she gave birth to a healthy baby boy.

Coping with Diabetes - You are not alone

When you have diabetes, a lot of changes have to be made. Coping with diabetes can be stressful. Your emotional reactions to having diabetes—feelings such as anger, denial, fear, despair, and depression—can cause stress. You need to learn about what causes your stress so you can learn to manage it. Stress can make your blood sugar go up, and having high blood sugar levels can make you feel stressed. This can make it hard to keep your blood sugar in your target range. These changes may upset you and you may also fear that diabetes will cause you serious health problems. Most people grieve over what they have to change to take care of themselves. If things seem too difficult, you may even want to deny that you have diabetes. Acting like you don't have diabetes is a big mistake.

How does stress increase blood sugar?

Stress affects the body's hormone balance, and these hormones can raise your blood sugar. You may also change the way you eat when under stress. Some people respond to stress with a flurry of nervous activity, which causes glucose levels to drop.

How to cope

Everyone deals with diabetes differently. You may need time to find out what it is that helps you. Here are some ideas that have helped others:

- Be aware of changes in glucose levels that aren't caused by diet, exercise, or medication.
- Don't keep your emotions bottled up. Talk to a family member or friend.
- Join a diabetes support group.
- Reduce tension by relaxing; try yoga or meditation.
- Do deep breathing exercises.
- Take up a new hobby or pick up an old one.
- Learn what triggers the most stress for you and try to avoid those situations.
- Make some down time just for you—read, walk, garden, whatever you enjoy.
- Accept that you may not be able to do things as you did in the past.
- Avoid alcohol.

Sometimes our family and friends do not support us as well as they could. You may have to be firm about sticking to your diabetes management plan. If you are serious about your diabetes, others will become more serious too. Remember, you cannot do a good job of caring for others if you don't take care of yourself first.

As you become aware of your stress levels, you will be able to distinguish between occasional sadness or anxiety unrelated to your blood sugar levels. When someone is depressed, however, they experience symptoms nearly every day for 2 or more weeks. If your symptoms do not go away, ask your health care provider to refer you to a mental health specialist.

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Where to Get More Help With Your Diabetes

People who can help you

- **Your health care provider**. He or she may be your provider at the clinic where you go for health care, your family doctor, nurse practitioner, physician assistant, or someone who has special training in caring for people with diabetes. A doctor with that kind of special training is called an endocrinologist or diabetologist. You'll talk with your health care provider about what kind of medicine you need and how much you should take. You'll also agree on a target blood glucose, blood pressure, and cholesterol ranges. Your health care provider will do tests to be sure that your blood glucose, blood pressure, and cholesterol are staying on track and that you're staying healthy. Ask your health care provider if you should take aspirin every day to help prevent heart disease.

- **Your diabetes educator.** A diabetes educator may be a nurse, a dietitian, a pharmacist, or another kind of health care worker. Diabetes educators teach you about meal planning, diabetes medicines, exercise, how to check your blood glucose, and how to fit diabetes care into your everyday life.

- **Your dietitian.** Your dietitian is someone who's specially trained to help you plan your meals.

- **Your pharmacist.** Your pharmacist is someone who's specially trained to help you with your diabetes medicines.

- **Don't be shy about asking your health care providers about the information in this guide.** Ask questions if you don't understand something. After all, it's your health!

- **Your family and friends.** Keeping your blood glucose at your target level is a daily job. You may need help or support from your family or friends. You may want to bring a family member or close friend with you when you visit your health care provider or diabetes educator. Taking good care of your diabetes can sometimes be a family affair!

- **A counselor or mental health worker.** You might feel sad about having diabetes or get tired of taking care of yourself. Or you might be having problems because of work, school, or family. If diabetes makes you feel sad or angry or if you have other problems that make you feel bad, you can talk to a counselor or mental health worker. Your health care provider or diabetes educator can help you find a counselor if you need one.

Organizations that can help you:

- **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 a Diabetes Educator."

- **How to find a dietitian**

  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 Dietitian."

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
Internet: www.diabetes.org

Juvenile Diabetes Research Foundation International
120 Wall Street, 19th Floor
New York, NY 10005
Phone: 1-800-533-2873
Internet: www.jdrf.org

Both 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.

How to get more information about diabetes:

To get more information about taking care of diabetes, contact

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

National Diabetes Information Clearinghouse

1 Information Way

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

Bethesda, MD 20892-3560

http://www.niddk.nih.gov

Email: ndic@info.niddk.nih.gov

NOTES:

This book was adapted from “Your Guide to Diabetes: Type 1 and Type 2” by the The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) as part of the National Institutes of Health and the US Department of Health and Human Services. www.niddk.nih.gov

The original booklet was edited with permission of the NIDDK by medical specialists in the field of adult and pediatric diabetes including physicians, nurses, registered dieticians, pharmacists, podiatrists, behavioral health providers, dentists, and patients with diabetes associated with the Veteran's Affairs (VA) and the Department of Defense (DoD) to be consistent with the VA/DoD Evidence-Based Clinical Practice Guideline for the "Management of Diabetes in Primary Care", version 3.0, March 2003).

https://www.QMO.amedd.army.mil *or* http://www.healthquality.va.gov

This booklet is not intended to take the place of expert medical care or treatment. Follow your health care provider's advice if it differs from what is provided in this booklet.

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