



# DIABETES EDUCATION

*A Teaching/Learning Reference Guide*



DOING WHAT'S BEST.

# CONTENTS

|    |                                  |    |                                    |
|----|----------------------------------|----|------------------------------------|
| 1  | INTRODUCTION                     | 24 | PHYSICAL ACTIVITY                  |
| 3  | UNDERSTANDING DIABETES           | 25 | PHYSICAL ACTIVITY AND DIABETES     |
| 4  | HIGH BLOOD SUGAR                 | 26 | TAKING CARE OF YOURSELF            |
| 6  | SICK DAY GUIDELINES              | 26 | FOOT CARE GUIDELINES               |
| 8  | LOW BLOOD SUGAR                  | 28 | KEEPING YOUR FEET ACTIVE           |
| 9  | HYPOGLYCEMIA                     | 30 | TAKING CARE OF YOURSELF            |
| 11 | GLYCEMIC CONTROL                 | 32 | FLU & PNEUMONIA SHOTS              |
| 12 | BLOOD SUGAR MONITORING           | 33 | DEALING WITH STRESS AND EMOTIONS   |
| 13 | WHAT'S YOUR A1C?                 | 34 | DIABETES INFORMATION RESOURCE LIST |
| 14 | CARBOHYDRATE FOODS               | 36 | RELIABLE WEBSITES TO BROWSE        |
| 15 | CALORIES                         |    |                                    |
| 16 | NEW AND IMPROVED NUTRITION FACTS |    |                                    |
| 18 | TIPS FOR EATING OUT              |    |                                    |
| 19 | TYPES OF FAT                     |    |                                    |
| 20 | SEASONING YOUR FOOD              |    |                                    |
| 21 | GUIDELINES FOR ALCOHOL USE       |    |                                    |
| 22 | DIABETES MEDICINES               |    |                                    |
| 23 | ROTATING INJECTION SITES         |    |                                    |
| 23 | INSULIN PUMP                     |    |                                    |

## INTRODUCTION

Diabetes touches almost every part of your life. It is a serious, lifelong condition but there's a lot you can do to protect your health. You can take charge of your health—not only for today, but also for the coming years.

Diabetes can cause health problems over time. It can hurt your eyes, your kidneys, and your nerves. It can lead to problems with the blood flow in your body. Even your teeth and gums can be harmed. Diabetes in pregnancy can cause special problems. Many of these problems don't have to happen. You can do a lot to delay or prevent them. There are people in our community who can help. This book can assist you in finding the help you need to prevent problems.

Today and every day, strive to balance your food, physical activity, and medicine. Test your own blood sugar (also called blood glucose) to see how this balance is working out. Then make choices that help you feel well every day to protect your health.

Feeling healthy can allow you to play a big part in the life of your family and community. You may even want to join a community group in which people share their stories and help others deal with their diabetes.

Balance is the key word in living well with diabetes. Strive for balance in all parts of your life. With the support of your family and friends, your health care team, and your community, you can take charge of your diabetes.

## 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. But too much glucose in the blood isn't good for your health. Glucose comes from the food you eat and is also made in the liver and muscles. The pancreas, an organ near the stomach, makes a hormone called insulin to help glucose get into our

body cells. When you have diabetes, your body either doesn't make enough insulin or can't use its own insulin very well. This problem causes glucose to build up in your blood.

## WHAT ARE THE SIGNS OF DIABETES?

You may recall having some of these signs before you found out you had diabetes:

- Being very thirsty.
- Urinating a lot—often at night.
- Having blurry eyesight from time to time.
- Feeling very tired much of the time.
- Losing weight without trying.
- Having very dry itchy skin.
- Having sores that are slow to heal.
- Getting more infections than usual.
- Loss of feeling or getting a tingling feeling in the feet.
- Vomiting.

## TYPES OF DIABETES

There are two main types of diabetes:

- **Type 1** – Your pancreas has stopped or nearly stopped making insulin.
- **Type 2** – Your body cells don't use insulin properly. This is called insulin resistance. As the diabetes progress, your pancreas produces less insulin.

Another type of diabetes appears during pregnancy in some women. It is called gestational diabetes.

One out of 10 people with diabetes has type 1 diabetes. These people usually find out they have diabetes when they are children or young adults. People with type 1 diabetes must inject insulin every day to live. The pancreas of a person with type 1 makes little or no insulin. Scientists are learning more about what causes the body to attack its own beta

cells of the pancreas (an autoimmune process) and stop making insulin in people with certain sets of genes.

Most people with diabetes – 9 out of 10 – have type 2 diabetes. The pancreas of people with type 2 diabetes keeps making insulin for some time, but the body can't use it very well. Most people with type 2 find out about their diabetes after age 30 or 40.

Certain risk factors make people more likely to get type 2 diabetes. Some of these are:

- A family history of diabetes.
- Lack of exercise.
- Weighing too much.
- Being of African American, American Indian, Alaska Native, Hispanic/Latino, or Asian/Pacific Islander heritage.

You can help manage your diabetes by controlling your weight, making healthy food choices, and getting regular physical activity. Ask for help from your health care team. Some people with type 2 diabetes may also need to take diabetes pills or insulin shots to help control their diabetes.

## CONTROLLING YOUR DIABETES

There's good news for people with diabetes. Studies show that keeping your blood sugar (blood glucose) close to normal helps prevent or delay some diabetes problems. Through careful control, many problems such as eye disease, kidney disease, heart disease, nerve damage, sexual dysfunction, and serious foot problems can be delayed or prevented.

## KEEPING A BALANCE

You must strive for balance that helps you keep your blood glucose in control. To keep your glucose at a healthy level, you need to maintain a healthy lifestyle and stick to daily routines that involve:

- Following your meal plan-good nutrition.
- Being physically active—regular exercise, increasing activity.
- Taking your diabetes medication (if prescribed by your doctor).
- Checking your blood glucose.

This book gives you only some of the facts you need. Your health care team can give you more.

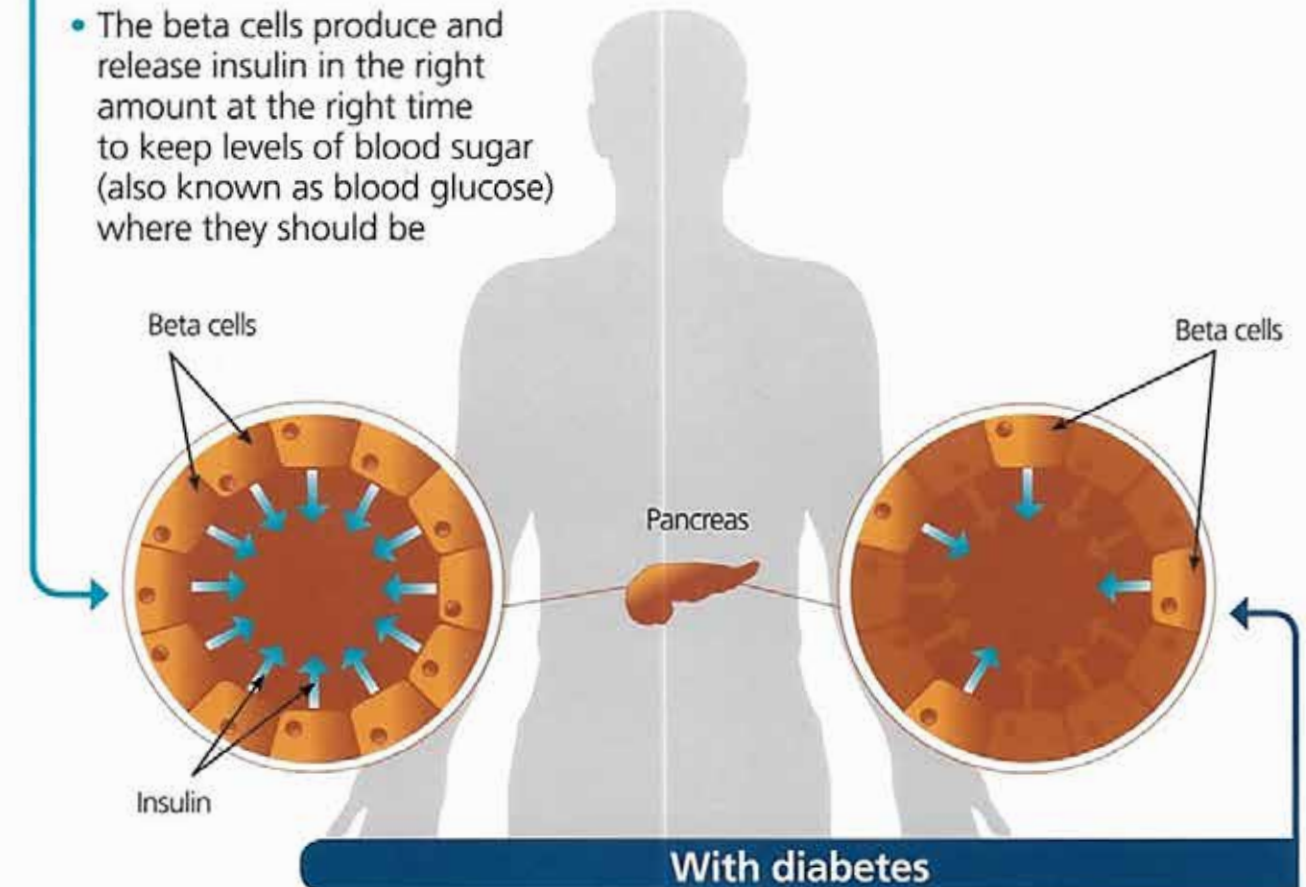


Source: Centers for Disease Control and Prevention. *Take Charge of Your Diabetes*. 3rd edition. Atlanta: U.S. Department of Health and Human Services, 2003.

## Understanding diabetes

### Without diabetes

- In people without diabetes, beta cells in the pancreas make and release a hormone called insulin
- The beta cells produce and release insulin in the right amount at the right time to keep levels of blood sugar (also known as blood glucose) where they should be



### With diabetes

- In people with type 1 diabetes, the beta cells make little or no insulin. So people with type 1 diabetes need to take insulin in order to use the sugar from the food they eat
- In people with type 2 diabetes, several things may be happening:
  - Insulin made by the pancreas may not be used efficiently by cells in the body
  - Beta cells are unable to make enough insulin
  - Hormones called GLP-1 or GIP may not be working normally<sup>a</sup>
  - The liver may release too much sugar

<sup>a</sup>GLP-1=glucagon-like peptide 1; GIP=glucose-dependent insulinotropic peptide.

# High blood sugar

(Hyperglycemia)

## Causes

High blood sugar (also called hyperglycemia) is when there is too much sugar in your blood. Over time, it can cause serious health problems. High blood sugar can happen if you:

- Skip a dose of insulin or diabetes pills
- Eat more than usual
- Are less active than usual
- Are under stress or sick

## Signs & Symptoms

Here's what may happen when your blood sugar is high:



Very thirsty



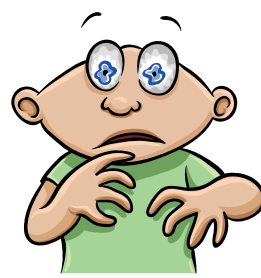
Needing to pass urine more than usual



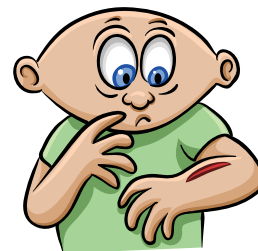
Very hungry



Sleepy



Blurry vision



Infections or injuries heal more slowly than usual

For more information, visit [Cornerstones4Care.com](http://Cornerstones4Care.com)

## What to do about high blood sugar

The best way to avoid high blood sugar is to follow your diabetes care plan. Call your diabetes care team if your blood sugar has been higher than your goal for 3 days and you don't know why.

Of course, the best way to know if you have high blood sugar is to check your blood sugar regularly, as directed by your doctor.

## HYPERGLYCEMIA

(High Blood Sugar or High Blood Glucose)

High blood sugar is any reading above your target blood sugar range. **For many people this range is 90- 130mg/dL before meals.** High blood sugars can be a serious problem. Over time, too much sugar in the blood can cause longterm complications of diabetes. High blood sugar can occur if you skip a dose of your insulin or diabetes pills, not taking the right amount of medication, eating more than usual, or are less active than usual. It can also occur if you are under stress, ill, or taking certain medicines.

## SYMPTOMS OF HIGH BLOOD SUGAR

Because high blood sugar happens gradually, the signs are not always easy to notice. A high reading on your glucose meter may be your first sign that blood sugar levels are running too high.

Common symptoms of high blood glucose are:

- Extreme thirst.
- Need to urinate often.
- Blurry vision.
- Extreme hunger.
- Dry skin and mouth.
- Feeling very tired or drowsy.
- Slow healing wounds or infections.
- Vaginal itching or genital itching.

## HOW TO TREAT HIGH BLOOD SUGAR

If you need to, get back on your self-management plan. Make sure that you are monitoring your blood sugar, taking your diabetes medications, following your meal plan, and staying active.

Look for a cause for your blood sugar rising and make adjustments as needed. You might realize that you are coming down with an illness, or that you have been under a lot stress. Try to treat or change these causes.

Call your doctor:

- If you can't control your high blood sugar, in spite of taking action to correct it.
- If you have 2-3 readings in a row with results of 240mg/dL or higher.
- If you have more than 2 unexplained episodes of high blood sugar in a week.
- If you have repeated high blood sugar readings during certain times of day.

## KETOACIDOSIS

Ketoacidosis will occur when the high blood sugar is severe. This occurs when there is not enough insulin in your body to use sugar for energy. The stored fat is then broken down and used for energy. When fat is used for energy instead of sugar, harmful acids called ketones are formed. Ketones build up in the blood and eventually spill into the urine. The buildup of ketones in the blood can lead to a serious condition called ketoacidosis. If it is not treated right away, ketoacidosis can lead to a coma or even death. It is important that you act right away to correct it.

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## WHEN DO I CHECK FOR KETONES?

You can test for ketones in the urine with a simple home test, available at most drugstores. Test for ketones:

- Every 4-6 hours if you have a blood sugar test over 240 mg/dL.
- When you are sick or have an infection.
- If you are under a lot of stress.
- If you have lost weight and you don't know why.
- If you are not feeling well, even if your blood sugar is within normal range.

## SYMPTOMS OF KETOACIDOSIS

- Symptoms of high blood sugar.
- Ketones in your urine.
- Sweet, fruity odor on your breath.
- Loss of appetite.
- Weight loss.
- Nausea/vomiting.
- Extreme drowsiness.
- Stomach pain or cramping.
- Rapid, shallow breathing.
- Unconsciousness.

Family and friends should also know about ketoacidosis. All too often ketoacidosis is mistaken for the flu.

**Call your doctor right away if you have blood sugars greater than 240mg/dL two times in a row and there is moderate to large amounts of ketones in your urine. If you are not able to reach your doctor, go to the emergency room for treatment.**

## SICK DAY GUIDELINES

When you are sick, your blood sugar may go up and make your diabetes harder to control. Even a common cold can cause your blood sugar to go too high. You can prevent a minor illness from becoming a major problem by knowing how to manage your illness before it occurs. Then when you become sick, you will know what to do and you will have the supplies on hand to do it.

### CARING FOR YOURSELF:

- **Continue to take your insulin or diabetes pills.** When you are sick, your blood sugar levels will likely go too high, even when you haven't eaten. During illness you may need more medicine than usual. Ask your doctor how much to take.
- **Test your blood sugar often.** You will need to check your blood sugar every 2 to 4 hours until you feel better and your blood sugar returns to normal.
- **Test for ketones.** You will need to do this if your blood sugar is over 240mg/dL and/or if you are sick to your stomach and vomiting.
- **Try to follow your meal plan.** When you are sick, you still need to take in carbohydrates, even if you are not hungry, sick to your stomach, vomiting or have diarrhea. Try to eat or drink some carbohydrates every hour during the day (about 15 grams per hour).

### SAMPLE FOODS THAT HAVE 15 GRAMS OF CARBOHYDRATES

- ½ cup regular (non-diet) Jello
- ½ cup regular (non-diet) soft drink
- 1 Popsicle
- 1 cup broth based soup
- ¼ cup sherbet
- ½ cup ice cream or frozen yogurt
- ½ cup hot cereal

- ½ cup juice
- 1 cup Gatorade

### DRINK PLENTY OF FLUIDS:

You should drink at least ½ cup to 1 cup of sugar-free, caffeine free liquids every 30 to 60 minutes. You may try replacing water with a diet soft drink, club soda, or tea without sugar.

### CALL YOUR DOCTOR IF:

- You have been sick for 1 to 2 days and aren't getting better.
- You have diarrhea or vomiting for more than 6 to 12 hours.
- You have a temperature of 101 or higher.
- You have a blood sugar greater than 240 or higher for more than 24 hours.
- You have moderate to large amounts of ketones in the urine.
- You have problems of confusion, shortness of breath, dehydration (dry mouth and skin, a decrease in urine output, and dry sunken eyes).
- You aren't sure what to do to take care of yourself.

### TELL YOUR DOCTOR:

- Your blood sugar levels and ketone results since you have been sick.
- How long you have been sick.
- Your symptoms.
- Your temperature.
- If you have been eating or drinking.
- What medicines you are taking and when you last took them.
- Any weight loss.
- Phone number of your pharmacy.



# Low blood sugar

(Hypoglycemia)

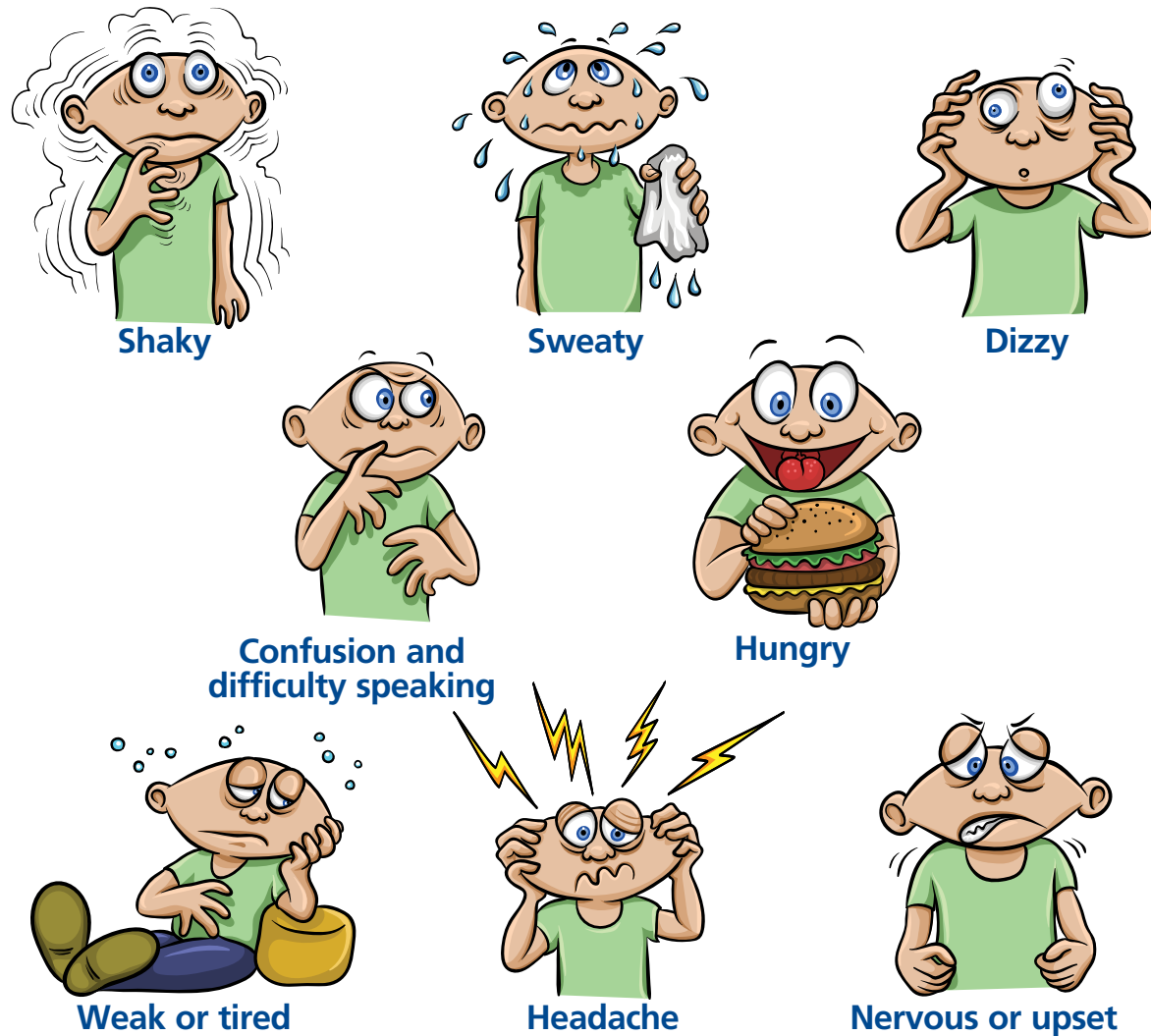
## Causes

You might get low blood sugar (also called hypoglycemia) if you:

- Take certain medicines and eat too few carbohydrates
- Skip or delay meals
- Take too much insulin or diabetes pills (ask your diabetes care team if this applies to you)
- Are more active than usual

## Signs and Symptoms

Here's what may happen when your blood sugar is low:



If low blood sugar is not treated, it can become severe and cause you to pass out. If low blood sugar is a problem for you, talk to your doctor or diabetes care team.

## HYPOGLYCEMIA

(Low Blood Sugar)

Low blood sugar can quickly get you into serious trouble. You need to know what to watch for, and what to do if you have a low blood sugar.

A blood sugar reading lower than 70mg/dL is too low and requires treatment. If you take insulin or diabetes pills, you can have low blood sugar (also called low blood glucose or hypoglycemia). Low blood sugar occurs when there is not enough glucose in your blood to provide the energy your body needs.

### LOW BLOOD SUGAR IS USUALLY CAUSED BY:

- Irregular meal patterns such as skipping a meal or going too long in between meals. Also you may not be eating enough at a meal or snack.
- Medications to control diabetes if you are not taking them as prescribed. If you take more insulin or diabetes medicine than needed for the amount of food you eat and take your diabetes medicine at the wrong time can make your blood sugar drop too low.
- Exercise or more activity than usual or right before a meal.
- Drinking beer, wine, or liquor without eating.

### SYMPTOMS OF LOW BLOOD SUGAR

A low blood sugar reaction brings on very uncomfortable feelings. Once you have had a reaction, you will know how to recognize it when it comes again. The signs may be mild at first. But a low glucose level can quickly drop much lower if you don't treat it.

With a low blood sugar reaction you may feel all, some or in some cases none of these signs and symptoms. Signs and symptoms can occur quickly.

You may feel:

- • Sudden hunger.

- Dizzy.
- Headache.
- Blurred vision.
- Shaky, nervousness, anxious.
- Fast and/or pounding heartbeat.
- Weakness, fatigue or drowsy. • Sweating (cold, clammy).
- Irritability.
- Difficulty concentrating.
- Confusion.
- Personality change.
- Numbness or tingling around mouth.

If the reaction is not treated, and your blood sugar continues to fall, you may pass out or develop seizures. Severe low blood sugar reactions will need emergency treatment.

### HOW TO TREAT LOW BLOOD SUGAR

If you have any signs that your blood sugar may be low, test it right away. If your blood sugar is less than 70mg/dL, you need to treat it now. If testing is not possible, go ahead and treat yourself as if your blood sugar is low. To treat low blood sugar you need to eat about 15 grams of fast acting-carbohydrate. Give this treatment about 15 minutes to work. Avoid the temptation to continue eating until your symptoms go away. See the list below for examples of foods and liquids that can be used to treat low blood sugar.

Check your blood glucose again in 15 minutes. If it is still below 70mg/dL, eat another 15 grams of carbohydrate. Repeat this every 15 minutes until your blood glucose is above 70mg/dL or your symptoms go away. Once your blood sugar is back to normal, get back on your plan, and look for causes. Ask yourself: Are you following your meal plan? Are you taking your medicine as ordered? Do you need to call your health care provider? You may need to make a change in your plan.

## QUICK-ACTING FOODS FOR TREATMENT OF LOW BLOOD SUGAR

(each item equals about 15 grams of carbohydrate)

### Food Item Amount

|                                   |                    |
|-----------------------------------|--------------------|
| Sugar packets.....                | 2 to 3             |
| Fruit juice.....                  | 1/2 cup (4 ounces) |
| Soda pop (non-diet).....          | 1/2 cup (4 ounces) |
| Hard candy.....                   | 3-5 pieces         |
| Life Savers.....                  | 8 pieces           |
| Honey/corn syrup/brown sugar..... | 1 tablespoon       |
| Glucose Tablets.....              | 4 tablets          |
| Milk (Fat-Free, Skim).....        | 1 cup              |
| Raisins.....                      | 2 tablespoons      |
| Crackers.....                     | 6                  |
| Fruit Roll-up.....                | 1                  |

## KEEP A BALANCE

Good diabetes control is the best way to prevent low blood sugar. Try to stay close to your usual schedule of eating, activity and taking your diabetes medicine. If you are late getting a meal or if you're more active than usual, you may need an extra snack.

## TEST YOUR BLOOD SUGAR

Keeping track of your blood sugar is a good way to know when it tends to run low. Show your logbook or record sheet to your health care providers. Be sure to let your healthcare provider know if you are having a number of low blood sugar readings a week.

## BE PREPARED

Always carry some type of carbohydrate with you so you'll be ready at any time to treat a low blood sugar level. Always wear something (like an identification bracelet) that says you have diabetes. Carry a card in your wallet that says you have diabetes and tells if you use medicine to treat it.

## CALL YOUR PHYSICIAN IF:

- You cannot control your low blood sugar, in spite of taking action to correct it.
- You have 2 to 3 readings in a row with results of 70mg/dL or less.
- You have more than 2 unexplained episodes of low blood sugar in a week.
- You have repeated low glucose readings during a particular time of day.
- Get emergency care if you feel you are about to pass out.

## HYPOGLYCEMIA UNAWARENESS

Some people have no signs or symptoms of a low blood sugar. They may lose consciousness without ever knowing that their blood glucose levels were dropping. This problem is called hypoglycemia unawareness.

Hypoglycemia unawareness tends to happen to people who have had diabetes for many years. It does not happen to everyone. It is more likely in people who have neuropathy (nerve damage), people on tight glucose control, and people who take certain heart or high blood pressure medicines.

As the years go by, many people continue to have symptoms of low blood sugar (hypoglycemia), but the symptoms change. In this case, someone may not recognize a reaction because it feels different.

These changes are good reason to check your blood glucose often, and to alert your friends and family to your symptoms of low blood sugar. Treat low or dropping sugar levels even if you feel fine. Tell your healthcare team if your blood sugar ever drops below 50mg/dL without any symptoms.

## GLYCEMIC CONTROL FOR PEOPLE WITH DIABETES

| WHEN                        | NORMAL                 | ACE*                   | ADA**                  | YOUR GOAL |
|-----------------------------|------------------------|------------------------|------------------------|-----------|
| <b>Before meals</b>         | 65-99 (mg/dL)          | Lower than 110 (mg/dL) | 80-130 (mg/dL)         |           |
| <b>2 hours after a meal</b> | Lower than 140 (mg/dL) | Lower than 140 (mg/dL) | Lower than 180 (mg/dL) |           |
| <b>Bedtime</b>              | Lower than 120 (mg/dL) |                        | 110-150 (mg/dL)        |           |
| <b>A1c (percent)</b>        | Lower than 5.7%        | Lower than 6.5%        | Lower than 7%          |           |

\*Adapted from the Association of the American College of Endocrinology (AACE). Consensus on Guidelines for Glycemic Control. Endocrine Practice 2012. \*\*Adapted from the American Diabetes Association 2012 Guidelines.

## REASONS TO CHECK YOUR BLOOD SUGAR MORE FREQUENTLY

- If your diabetes medicine changes.
- If you begin taking other kinds of medicines.
- If you change your diet.
- If your exercise routine or activity level changes.
- If your level of stress increases.
- If you are sick. When you are sick, even without eating, your blood sugar levels may run high.

Follow your doctor's testing recommendations during this time. Continue testing more often until you have maintained your blood sugar levels for at least one week, or until your doctor advises you that more frequent testing is not needed.

## BLOOD SUGAR MONITORING

### WHY SHOULD I TEST MY BLOOD SUGAR?

Testing your own blood sugar can tell if your blood sugar is too high, too low or just right. Testing your blood sugar will give you the information you need to manage your diabetes on a day-to-day basis. With blood sugar testing, you will see right away how your food choices, exercise and diabetes medications are working. This allows you to keep your blood sugar as normal as possible.

### WHAT ARE THE RECOMMENDED BLOOD SUGAR LEVELS?

You will usually feel better and have more energy when your blood sugar levels are at normal or near normal levels. Medical evidence shows that keeping your blood sugar levels at normal or near normal levels may help to reduce your risk of diabetes complications. Your doctor may suggest different goals, depending on your situation.

### WHEN SHOULD I TEST MY BLOOD SUGAR?

Your doctor will tell you when and how often to test your blood sugar. Here are some common times to test, and what your results tell you:

- Fasting (when you haven't had anything to eat or drink for at least eight hours - usually when you first wake up in the morning). This test tells you how your body handled your blood sugar during the night.
- Before meals. This test result tells you how your body has handled the glucose from the earlier meal. It helps you plan for your next meal.
- 2 hours after a meal. This test tells you how your blood sugar handled the carbs in your meal.

### HOW OFTEN DO I NEED TO CHECK MY BLOOD SUGAR?

How often you check your blood sugar will depend on your medication, activity, diet and how often your doctor recommends. Many people need to test their blood sugar regularly -- often more than once per day. If you have insurance coverage for monitoring supplies, you will need a prescription from your doctor stating how often you will need to test. If you are required to check your blood sugar more often, you may need to provide the insurance company with a written log of your blood sugars.

### OTHER REASONS TO CHECK YOUR BLOOD SUGAR

- If you have symptoms of low blood sugar.
- If you have symptoms of high blood sugar.
- To learn how meals, physical activity and medicine affect your blood sugar level.
- To document how well your blood sugar is controlled if you have a job in which poor control could cause safety problems.
- To help you decide if it is safe to drive or perform other tasks that require concentration if you are taking insulin or have had low blood sugar in the past.

### CONTINUOUS GLUCOSE MONITORING (CGM)

CGM is a way to measure glucose levels in real-time throughout the day and night. A tiny electrode called a glucose sensor is inserted under the skin to measure glucose levels in tissue fluid. It is connected to a transmitter that sends the information via wireless radio frequency to a monitoring display device.

| HbA1c | eAGmg/dl |
|-------|----------|
| 5     | 97       |
| 5.5   | 111      |
| 6     | 126      |
| 6.5   | 140      |
| 7     | 154      |
| 7.5   | 169      |
| 8     | 183      |
| 8.5   | 197      |
| 9     | 212      |
| 9.5   | 226      |
| 10    | 240      |
| 10.5  | 255      |
| 11    | 269      |
| 11.5  | 283      |
| 12    | 298      |

## WHAT'S YOUR NUMBER?

### ...YOUR ESTIMATED AVERAGE GLUCOSE NUMBER.

#### FIRST, LET'S TALK ABOUT HBA1C:

Like most people, your blood sugar levels go up and down minute to minute. You can't test your blood sugar levels constantly. So how can you know if your blood sugar levels are in overall good control? The HbA1c can provide that information to you. It is the blood test with a memory. The HbA1c test measures the amount of sugar that attaches to protein in the red blood cell. Because the red blood cells live for about 3 months, HbA1c tests show your average blood sugar during that time. It is reported as a percent (for example 7%). The greater the amount of sugar in your blood, the higher the HbA1c results will be. High blood sugars over a long period of time cause damage to large and small blood vessels. This will increase your risk of diabetes complications.

Now we have a new way to report HbA1c called estimated average glucose, or eAG. Estimated average glucose uses the same units that you see on a lab report or on your meter (for example, 154 mg/dl). Just like HbA1c, eAG lets you know the average level of sugar in your blood 24 hours a day, 7 days a week for 2-3 months. The eAG can help you better understand your HbA1c level.

#### HOW OFTEN SHOULD I HAVE AN HBA1C TEST DONE?

You should get an HbA1c test at least twice a year. Your doctor may recommend that you have one more often, especially if your diabetes is not well controlled or if your treatment plan changes.

#### WHAT SHOULD MY NUMBER BE?

A healthy person without diabetes will have an HbA1c between 4 and 5.6%. If you have diabetes, the closer you are to 6%, the better control you have of your diabetes. That is why the American Diabetes Association recommends a goal of less than 7% for most people with diabetes. Your doctor may have a different goal for you. Find out what that is and always know your number!

**My Goals:** HbA1c \_\_\_\_\_ % (eAG \_\_\_\_\_ mg/dl)

**My Results:** HbA1c \_\_\_\_\_ % (eAG \_\_\_\_\_ m)



# CARBOHYDRATE FOODS

| FOOD GROUP        | FOOD   |
|-------------------|--|
| <b>STARCH</b>     | <ul style="list-style-type: none"> <li>▪ Bread, rolls bagels, English muffins, pita bread, tortillas, naan and crackers</li> <li>▪ Pasta: noodles, spaghetti and macaroni</li> <li>▪ Cereal: dry or cooked</li> <li>▪ Rice: brown or white</li> <li>▪ Legumes: lentils, dried beans (garbanzo, kidney, black, etc.) and dried peas (split and black-eyed)</li> </ul> |
| <b>FRUIT</b>      | Apples, oranges, bananas, and all other fruits - fresh, frozen, dried, canned or juiced  |
| <b>MILK</b>       | <ul style="list-style-type: none"> <li>▪ All milk - cow's, almond or soy</li> <li>▪ Yogurt - plain or artificially sweetened</li> </ul>  |
| <b>VEGETABLES</b> | Starchy potatoes (white and sweet), corn, peas, squash (winter)  |
| <b>OTHER</b>      | <ul style="list-style-type: none"> <li>▪ Casseroles, soups/stews</li> <li>▪ Pizza</li> <li>▪ Snack foods - chips, pretzels, popcorn</li> <li>▪ Desserts - ice cream, frozen yogurt, cake, cookies and pie</li> <li>▪ Alcoholic beverages</li> <li>▪ Sweetened beverages - soda, lemonade, sweet tea</li> </ul>   |

## HOW MANY CALORIES ARE RIGHT FOR ME?

|  |   |  |
|--|---|--|
| Smaller, older women who are not very active:<br><b>1200 - 1400 Calories</b>                         | <b>30-45 carbohydrate per meal</b><br><i>30 grams for evening snack</i><br>(16-20 grams fiber per day)          | 4-5 oz. protein per day<br>AND<br>40 grams fat per day |
| Older, inactive women OR women desiring to lose weight:<br><b>1500 - 1700 Calories</b>               | <b>45-60 grams carbohydrate per meal</b><br><i>30 grams for evening snack</i><br>(21-23 grams of fiber per day) | 4-6 oz. protein per day<br>AND<br>50 grams fat per day |
| Smaller, older inactive men OR larger, active women desiring to lose weight:<br><b>1800 Calories</b> | <b>60-75 grams carbohydrate per meal</b><br><i>30 grams for evening snack</i><br>(25 grams of fiber per day)    | 6-7 oz. protein per day<br>AND<br>60 grams fat per day |
| Most older men OR active women OR larger men desiring to lose weight:<br><b>2000 Calories</b>        | <b>75 grams carbohydrate per meal</b><br><i>30 grams for evening snack</i><br>(28 grams of fiber per day)       | 6-7 oz. protein per day<br>AND<br>65 grams fat per day |
| Active OR younger men:<br><b>2000 - 2500 Calories</b>  | <b>75-90 grams carbohydrate per meal</b><br><i>45 grams for evening snack</i><br>(28-35grams of fiber per day)  | 7-8 oz. protein per day<br>AND<br>70 grams fat per day |

# The New and Improved Nutrition Facts Label – Key Changes



The U.S. Food and Drug Administration has finalized a new Nutrition Facts label for packaged foods that will make it easier for you to make informed food choices that support a healthy diet. The updated label has a fresh new design and reflects current scientific information, including the link between diet and chronic diseases.

## 1. Servings

The number of “servings per container” and the “Serving Size” declaration have increased and are now in larger and/or bolder type. Serving sizes have been updated to reflect what people actually eat and drink today. For example, the serving size for ice cream was previously 1/2 cup and now is 2/3 cup.

There are also new requirements for certain size packages, such as those that are between one and two servings or are larger than a single serving but could be consumed in one or multiple sittings.

## 2. Calories

“Calories” is now larger and bolder.

## 3. Fats

“Calories from Fat” has been removed because research shows the type of fat consumed is more important than the amount.

## 4. Added Sugars

“Added Sugars” in grams and as a percent Daily Value (%DV) is now required on the label. Added sugars includes sugars that are either added during the processing of foods, or are packaged as such (e.g., a bag of table sugar), and also includes sugars from syrups and honey, and

## Current Label

| Nutrition Facts  |                      |
|--|----------------------|
| Serving Size 2/3 cup (55g)<br>Servings Per Container About 8 |                      |
| Amount Per Serving   | % Daily Value*       |
| <b>Calories</b> 230  | Calories from Fat 72 |
| <b>Total Fat</b> 8g  | <b>12%</b>           |
| Saturated Fat 1g   | <b>5%</b>            |
| Trans Fat 0g   |                      |
| <b>Cholesterol</b> 0mg                                       | <b>0%</b>            |
| <b>Sodium</b> 160mg  | <b>7%</b>            |
| <b>Total Carbohydrate</b> 37g                                | <b>12%</b>           |
| Dietary Fiber 4g   | <b>16%</b>           |
| Sugars 12g   |                      |
| <b>Protein</b> 3g  |                      |
| Vitamin A  | 10%                  |
| Vitamin C  | 8%                   |
| Calcium  | 20%                  |
| Iron   | 45%                  |

\* Percent Daily Values are based on a 2,000 calorie diet. Your daily value may be higher or lower depending on your calorie needs.

|                    |                   |         |
|--------------------|-------------------|---------|
| Calories:          | 2,000             | 2,500   |
| Total Fat          | Less than 65g     | 80g     |
| Sat Fat            | Less than 20g     | 25g     |
| Cholesterol        | Less than 300mg   | 300mg   |
| Sodium             | Less than 2,400mg | 2,400mg |
| Total Carbohydrate | 300g              | 375g    |
| Dietary Fiber      | 25g               | 30g     |

## New Label

| Nutrition Facts   |                |
|---|----------------|
| 8 servings per container<br>Serving size <b>2/3 cup (55g)</b> |                |
| Amount per serving  | % Daily Value* |
| <b>Calories</b> <b>230</b>                                    |                |
| <b>Total Fat</b> 8g   | <b>10%</b>     |
| Saturated Fat 1g  | <b>5%</b>      |
| Trans Fat 0g  |                |
| <b>Cholesterol</b> 0mg  | <b>0%</b>      |
| <b>Sodium</b> 160mg   | <b>7%</b>      |
| <b>Total Carbohydrate</b> 37g                                 | <b>13%</b>     |
| Dietary Fiber 4g  | <b>14%</b>     |
| Total Sugars 12g  |                |
| Includes 10g Added Sugars                                     | <b>20%</b>     |
| <b>Protein</b> 3g   |                |
| Vitamin D 2mcg  | <b>10%</b>     |
| Calcium 200mg   | <b>15%</b>     |
| Iron 8mg  | <b>45%</b>     |
| Potassium 235mg   | <b>6%</b>      |

\*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

## Transitioning to the New Label

Manufacturers still have time to begin using the new and improved Nutrition Facts label, so you will see both label versions for a while. However, the new label is already starting to appear on products nationwide.

sugars from concentrated fruit or vegetable juices. Scientific data shows that it is difficult to meet nutrient needs while staying within calorie limits if you consume more than 10 percent of your total daily calories from added sugar.

## 5. Nutrients

The lists of nutrients that are required or permitted on the label have been updated. Vitamin D and potassium are now required on the label because Americans do not always get the recommended amounts. Vitamins A and C are no longer required since deficiencies of these vitamins are rare today. The actual amount (in milligrams or micrograms) in addition to the %DV must be listed for vitamin D, calcium, iron, and potassium.

The daily values for nutrients have also been updated based on newer scientific evidence. The daily values are reference amounts of nutrients to consume or not to exceed and are used to calculate the %DV.

## 6. Footnote

The footnote at the bottom of the label has changed to better explain the meaning of %DV. The %DV helps you understand the nutrition information in the context of a total daily diet.

For more information about the new Nutrition Facts label, visit:

[www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/Labeling/Nutrition/ucm385663.htm](http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/Labeling/Nutrition/ucm385663.htm)

January 2018

## 0 CARBOHYDRATE CHOICE SNACKS (SNACKS WITH LESS THAN 5 GRAMS CARBOHYDRATE)

|  |  |
|--|--|
| 2 Cups Raw Vegetables<br>2 Tbsp Low Fat Vegetable Dip  | String Cheese or 1/2 cup Cottage Cheese<br>2 Soda Crackers               |
| 10 Peanuts   | Sugar Free Popsicle  |
| 1 cup diet Hot Cocoa (25 calories or less)   | Sugar Free Gelatin   |
| 4 Stalks of Celery<br>2 Tbsp Hummus  | Salad<br>2 Tbsp Reduced Fat Dressing                                     |
| 1 Slice Ham<br>1 Tbsp Light Cream Cheese<br>Spread Cream Cheese on the ham, roll and cut into bite-size pieces.<br>2 Soda Crackers | 2 Chicken Wings<br>2 Tbsp Fat Free Ranch Dressing<br>1 cup Celery Sticks |
| 3 Mini Rice Cakes  | 4 ounces Tomato or Vegetable Juice                                       |

## 1 CARBOHYDRATE CHOICE SNACKS (SNACKS WITH LESS THAN 15 GRAMS CARBOHYDRATE)

|  |  |
|--|--|
| 1/2 cup Trail Mix  | 3 cups Popcorn   |
| Tortilla Chips<br>Cut a 6-inch tortilla into triangles and broil until crisp.<br>Top with some grated mozzarella cheese.   | Orange Cow<br>Blend together 1/2 cup skim, 1/2% or 1% Milk and 1/2 cup Orange Juice from concentrate.  |
| 1/2 cup Sugar-Free Pudding   | 1/2 Banana Rolled in 1 Tbsp Crushed Nuts   |
| 2 Graham Cracker Sandwiches<br>Prepare one package of sugar-free instant pudding as directed on package. Mix 1/2 cup peanut butter into pudding. Spread 1 tbsp on 1 graham cracker square. Top with another graham cracker square. Makes 32 sandwiches - freeze and eat frozen or slightly thawed. | 2 Peanut Butter Balls<br>Combine 1/2 cup peanut butter, 2 tbsp skim milk and 2 tbsp nonfat dry milk. Add 1/2 cup raisins, 4 crushed graham cracker squares and 1 tsp vanilla. Mix well. Divide into 10 balls. Freeze until ready to eat. |
| String Cheese<br>One Small Apple   | 1 Fudgesicle   |
| 1/2 cup Cottage Cheese   | 1 Rice Krispie Treat   |
| 1/2 cup Canned Fruit Packed in Own Juice   |  |
| 1/2 Sandwich with Raw Vegetables   | 1 Container of Yogurt that has up to 20 grams Carbohydrate   |

## 2 CARBOHYDRATE CHOICE SNACKS (30 GRAMS CARBOHYDRATE)

|  |  |
|--|--|
| Milkshake<br>Blend together 1 cup skim, 1/2% or 1% milk, with 1/2 cup sugar free ice cream.  | 3 Graham Cracker Squares topped with 2 tbsp Peanut Butter<br>1 cup Skim, 1/2% or 1% milk |
| 1 Whole Wheat English Muffin<br>Spread 1 tbsp tomato sauce on each half. Sprinkle grated mozzarella cheese, some vegetables and a dash of oregano. Heat in toaster oven or broiler until crispy. | 20 Tortilla Chips<br>Top with melted low fat cheese, salsa, lettuce, tomato, etc.        |
| 1 Slice Pizza  | 1 cup Soup<br>24 Oyster Crackers   |
| 4 Chocolate Flavored Graham Crackers<br>Spread 2 tbsp peanut butter on 2 graham crackers. Place 2 graham crackers on top for sandwiches.<br>1 cup Skim, 1/2% or 1% milk                          | 1/2 cup Sugar-free Pudding<br>5 Vanilla Wafers   |
| 1/2 cup Cherrios<br>1 cup Skim, 1/2% or 1% Milk  | 1 ounce Low Fat Cheese<br>6 Saltine Crackers<br>1 Small Apple                            |

## TIPS FOR EATING OUT

### DEVELOP A CAN-DO ATTITUDE!

Believe that you can have a healthy and enjoyable meal when eating out. Slowly begin changing your ordering habits and types of restaurants you choose.

### DECIDE TO EAT OUT!

For most of us, eating out is hardly a special occasion, so we need to factor in our nutrition and health goals. If you eat out often, you will need to monitor carefully.

### CHOOSE THE SITE!

Find the restaurants that offer healthier options. Have in mind a list of restaurants where you can make a good selection.

### HAVE A GAME PLAN!

Before arriving at the restaurant, plan your order to be healthy and enjoyable. Try not to make hasty choices.

### ORDER FOR YOUR STOMACH, NOT YOUR EYES!

Watch for high fat foods. Remember the less ordered, the less eaten!

### GET IT MADE TO ORDER!

Find out how foods are prepared so you can tell the server what you do and don't want. If your requests are practical - such as leaving and item off, baked rather than fried potatoes and dressing on the side - they are usually willing to accommodate.

### KNOW WHEN ENOUGH IS ENOUGH!

Become a member of the "Leave-A-Few-Bites-On-The-Plate-Club." Order carefully and make use of carry out containers. Ask your server to bring your to-go container when your food arrives. Set aside your portion to take home before you begin eating.

### LOOK FOR KEY WORDS ON THE MENU!

Avoid: Buttery, Sautéed, Fried, Crisp, Creamed, Breaded, Au Gratin, A La Mode, Escalloped, Sweetened. Choose: Lean, Steamed, In Its Own Juice, Garden Fresh, Roasted, Stir-fried, Broiled, Grilled and Baked.

### HAVE SOME IDEA OF SERVING SIZE!

The normal serving sizes in restaurants are generally much greater than recommended. Know what your normal portion size should be so you can be in control.

### PACE YOUR EATING!

Concentrate on eating your meal slowly and enjoying each mouthful. Remember, it takes 20 minutes for your stomach to send the message to the brain that you are full. You can pack in a lot of excess calories in 20 minutes!

## TYPES OF FAT

Limiting your fat intake is key to losing weight. Healthy eating includes small amounts of fats, but some fats are much healthier than others. Eating monounsaturated or polyunsaturated fats instead of saturated or trans fats may help improve your blood cholesterol.

### GOOD FATS

#### Monounsaturated:

Canola, olive, nut and peanut oils (use these fats for cooking); peanuts; nuts; avocado; olives

#### Polyunsaturated:

Most vegetable oils (corn, cottonseed, flaxseed, safflower, sesame, soybean, sunflower), nuts, seeds, peanuts, fish

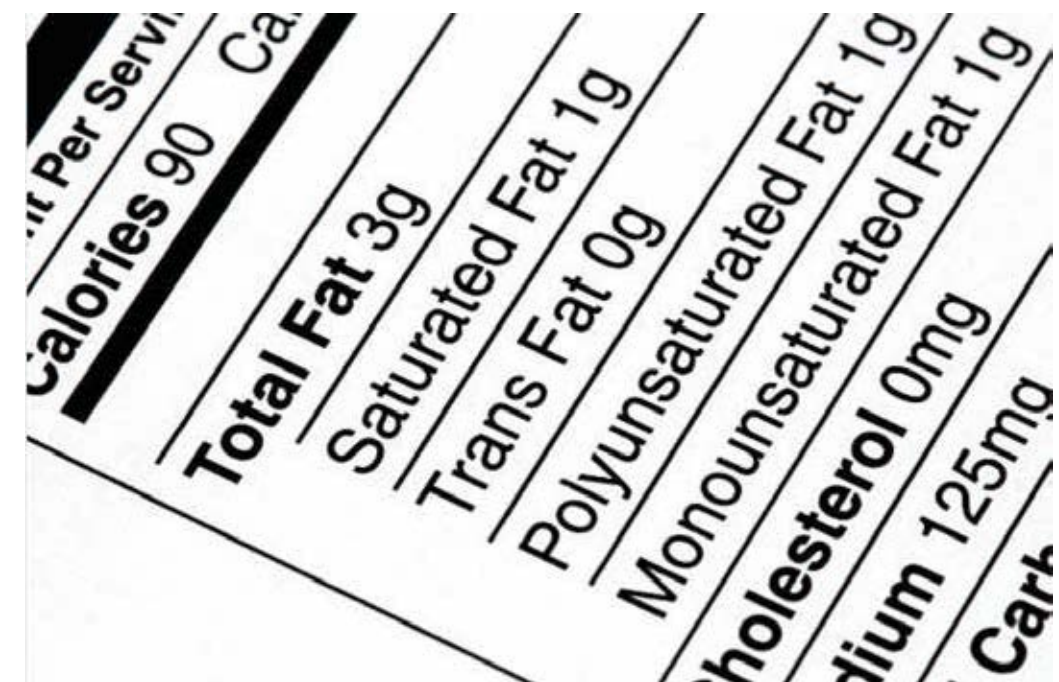
### BAD FATS

#### Saturated:

Animal sources such as meat, poultry, butter, lard, whole and reduced fat dairy products; tropical oils - coconut, palm and palm kernel. Saturated fats are solid at room temperature

#### Hydrogenated

Many fats used in processed foods, snack foods, stick margarine, vegetable shortening, "partially hydrogenated vegetable oil." (A liquid vegetable oil is changed to a solid fat by a chemical process). \*May be labeled as trans fat



# great living starts here™ seasoning your food

## how to add seasoning:

- Add 1/4 teaspoon dried, finely powdered, or 3/4 to 1 teaspoon dried, loosely crumbled, or 1 1/2 teaspoons fresh, chopped herbs for every four servings of food, pint of sauce or pound of meat.
- For the best flavor, add seasoning during the last hour of cooking.
- For foods that cool in less than an hour or for salads, wet the herbs with a little oil or lemon juice and let stand for 1/2 hour before using to let the full flavor develop.
- For a combination of herbs and spices, use about 1/2 teaspoon for every four servings.
- One to two teaspoons of sugar can be added to vegetables during cooking. If a sugar substitute is used, add after foods have been cooked; the flavor can change when heated.
- If using a salt substitute, check with your doctor first. Add after foods have been cooked; the flavor changes when heated. “Lite Salt” is still 1/2 salt and may need to be limited or avoided. Salt Sense® is 1/3 less sodium.

## food suggested seasoning

|                     |  |
|---------------------|--|
| <b>Beef</b>         | bay leaf, basil, dry mustard, nutmeg, green pepper, sage, onion, marjoram, pepper, thyme, oregano, caraway, curry, garlic, parsley, rosemary |
| <b>Pork</b>         | basil, caraway, cloves, nutmeg, garlic, onion, parsley, rosemary, sage, pepper, apples, applesauce, pineapple, allspice, oregano             |
| <b>Fish</b>         | bay leaf, basil, curry, cummin, dry mustard, green pepper, lemon juice, paprika, marjoram, onion, parsley                                    |
| <b>Eggs</b>         | basil, curry, dry mustard, green pepper, onion, paprika, parsley, nutmeg, pepper   |
| <b>Carrots</b>      | parsley, honey, cinnamon, mint, lemon juice, allspice, nutmeg, caraway seed, dill seed, ginger, thyme, pepper                                |
| <b>Potatoes</b>     | onion, basil, parsley, paprika, bay leaf, green pepper, chives, celery seed, oregano, poppy seed, rosemary, thyme, pepper, garlic, nutmeg    |
| <b>Rice</b>         | turmeric, cummin, curry, allspice, honey, onion, green pepper, pepper  |
| <b>Broccoli</b>     | lemon juice, pepper, vinegar, basil, caraway seed, dry mustard, nutmeg, curry, oregano, garlic   |
| <b>Peas (Green)</b> | onion, basil, mint, sage, pepper, honey, rosemary, parsley, green pepper, oregano, garlic, poppy seed  |
| <b>String Beans</b> | lemon juice, nutmeg, dill seed, thyme, vinegar, dry mustard, oregano, caraway seed, sage, garlic, pepper                                     |
| <b>Spinach</b>      | lemon juice, vinegar, onion, allspice, basil, oregano, pepper  |
| <b>Corn</b>         | green pepper, onion, paprika, pepper, curry  |

**Caution:** Small amounts of herbs and spices should give the flavor you like. Too much may create a bitter or unpleasant taste.



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## GUIDELINES FOR ALCOHOL USE

- Alcohol initially lowers your blood sugar level. If you use insulin or certain diabetes medications, you are more likely to have a low blood sugar reaction when you drink alcohol.
- Discuss use of alcohol with your healthcare provider. Consider drinking only if your diabetes is well-controlled and you are not pregnant. Alcohol can make problems worse.
- Drink alcohol with meals or snacks containing carbohydrate, such as pretzels, breadsticks or crackers.
- Alcohol makes low blood sugar harder to recognize. It also interferes with some medicines.
- Use alcohol in moderation (up to 1 equivalent for women and 2 for men per day). One drink means:
  - 1.5 ounces of distilled spirits
  - 5 ounces of dry wine
  - 12 ounces of beer
- Mix alcohol with free mixers instead of sweetened, such as:
  - Water
  - Club soda
  - Seltzer
  - Diet soft drinks
- Drink with someone who recognizes and knows how to treat a low blood sugar interaction.
- Don't forget, if weight loss is your goal, alcohol does contain calories!



# How diabetes medicines can help

Diabetes medicines work to lower your blood sugar levels. Depending on your treatment needs, you may need to take diabetes pills or an injectable medicine, or both.

## How do diabetes pills and non-insulin injectable medicines work to control blood sugar?

Make the muscle cells and fat cells more sensitive to insulin  
**My medicine:** \_\_\_\_\_

Reduce glucagon release  
**My medicine:** \_\_\_\_\_

Keep the liver from making too much sugar  
**My medicine:** \_\_\_\_\_

Slow down digestion of food so after-meal blood sugar levels don't go so high  
**My medicine:** \_\_\_\_\_

Help the kidneys absorb less sugar and get rid of more sugar  
**My medicine:** \_\_\_\_\_

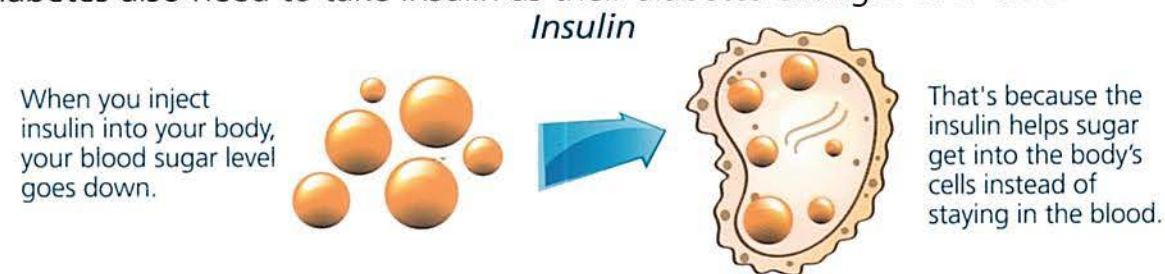
Block the breakdown of GLP-1  
**My medicine:** \_\_\_\_\_

Help the pancreas release more insulin  
**My medicine:** \_\_\_\_\_

Other  
**My medicine:** \_\_\_\_\_

## How does insulin work to control blood sugar?

Everyone with type 1 diabetes needs to take insulin. Many people with type 2 diabetes also need to take insulin as their diabetes changes over time.



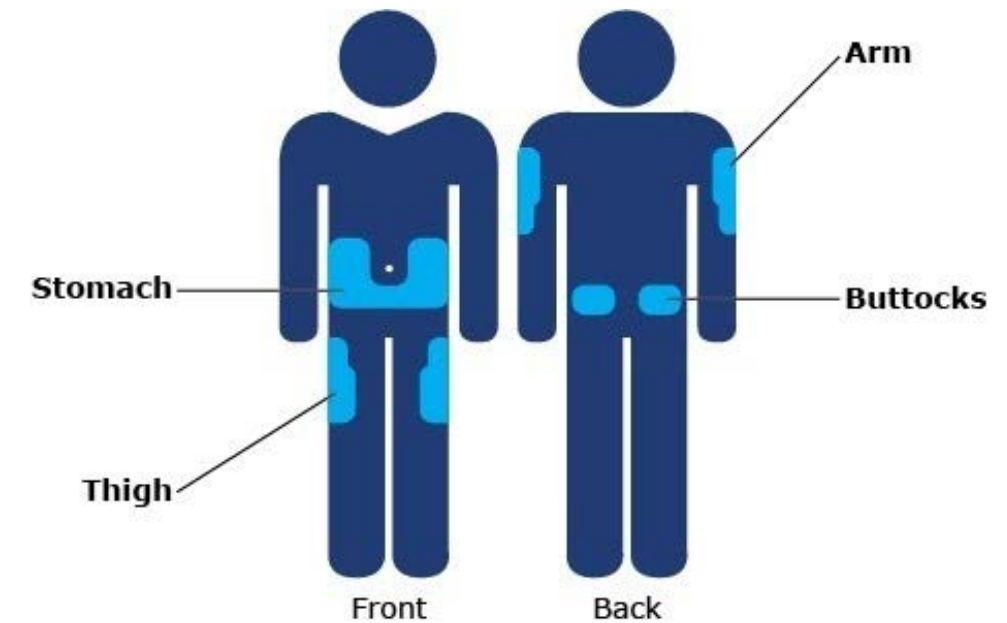
Work with your diabetes care team to learn about:

- Your blood sugar goals
- Your personalized insulin plan
- When to take insulin
- How and where to inject insulin
- Possible side effects of insulin and how to manage them
- How to store insulin

**My medicine:** \_\_\_\_\_

# ROTATING INJECTION SITES

Give your insulin 1-1/2 inches away from where you injected the time before. Use all of one recommended area before moving to another. Insulin absorbs at different rates from different parts of the body.



## INSULIN PUMP

An insulin pump is a tool that can help you manage your diabetes. It helps you to match your insulin to your lifestyle and helps to keep your blood sugar levels within your target range. The pump delivers a small amount of rapid - or short - acting insulin during the day and night. When you eat a meal or snack, you can give yourself extra insulin (known as a bolus dose) to cover the carbohydrate in that meal.

Insulin pumps require that you place a needle into the fatty tissue (usually in the abdomen). It stays in place for two to three days. The pump can be attached to a waistband, pocket, bra or armband.

### ADVANTAGES

- Eliminates need for individual insulin injections.
- More accurate than insulin injections.
- Usually improves the A1c.

- Allows you to be flexible about when and what you eat.
- Improves quality of life.
- Reduces severe low blood sugar reactions.

### DISADVANTAGES

- Can cause weight gain.
- Can cause diabetic ketoacidosis (DKA) if the needle comes out or becomes plugged for hours.
- Can be bothersome because you are attached to the pump most of the time.

Using an insulin pump requires commitment and frequent blood sugar testing. If you are thinking about going on a pump, talk to your doctor or diabetes educator for more information.

## PHYSICAL ACTIVITY

It is important to be active. Physical activity has a real and powerful effect on your diabetes.

### HERE IS WHAT REGULAR EXERCISE AND BEING ACTIVE CAN DO FOR YOU:

- **Control your blood sugar.** Regular activity helps your insulin work better by allowing more sugar to enter your body cells for energy.
- **Manage your weight and reduce insulin resistance.** Exercise burn extra calories and increases the rate at which your body burns calories (metabolism). As you lose excess body fat, you improve your body's ability to use insulin.
- **Helps control blood pressure and cholesterol.** This will lower your chance of developing hardening of the arteries that can lead to stroke, heart and blood vessel disease. People with diabetes are at increased risk for developing heart and blood vessel disease.

Besides helping you to control your diabetes, exercise can also make you stronger, give you more energy, and help you cope with daily stress. It can, overall, improve how you look and feel.

If you haven't been doing any physical activity, talk to your doctor before you begin. If you have problems with your heart, eyes, feet, nerves or blood pressure, some kinds of activity might make these problems worse and should be checked before starting any kind of activity program. If you are just starting a program or have not exercised for awhile, start out slowly. Gradually increase the intensity and amount of time that you exercise.

Do some physical activity every day.

#### **Any amount of exercise is better than nothing.**

The goal is to aim for 30 to 90 minutes of aerobic activity most days of the week. Some examples of aerobic activity are jogging, brisk walking, biking, rowing, swimming, stair stepping and aerobic dance.

Choose an activity you enjoy. Do an activity you really like. The more fun it is, the more likely you will do it each day. It's also good to exercise with a family member or friend.

### EXERCISE SAFELY

- Warm up for 5 to 10 minutes before you start your exercise to get your body ready for the activity. Cool down for 5 to 10 minutes after your workout to bring your heart rate down. This helps to prevent injury and stiffness to muscle and joints.
- Check your blood sugar. You should check your blood sugar level before and after exercise. Monitoring can help you learn how the activity will affect your blood sugar and help you to avoid problems. The effects of exercise can last up to 24 hours after you've exercised.
- Don't exercise if your blood sugar level is below 100mg/dL. Exercise usually lowers blood sugar levels. If your blood sugar is less than 100mg/dL, you may need to have a snack prior to exercising. Do not exercise if your blood sugar is 240mg/dL or higher. Also, if you have type I diabetes, do not exercise if you test positive for ketones. Exercising with ketones present may make blood sugar levels go higher.
- **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 carbohydrate snack should always be available in case of a low blood sugar problem. Examples of 15 grams of carbohydrate include: 4 glucose tablets, or 8 lifesavers.
- Do not inject insulin into an area of the body that you will be using during exercise. The insulin is absorbed faster than usual. This can lead to low blood sugar.
- Do not exercise when your insulin is working it's hardest (peak time). The best time to exercise is usually 1-2 hours after a meal, when the blood sugar is usually higher.

## PHYSICAL ACTIVITY AND DIABETES

### BENEFITS OF PHYSICAL ACTIVITY

- Can lower blood sugar, blood pressure and cholesterol.
- Helps with losing and maintaining a healthy weight.
- Boosts mood, improves well-being and promotes restfulness

### ENDURANCE ACTIVITIES

- Jogging/running
- Gardening
- Swimming
- Biking
- Walking
- Dancing

### BUILD OVER TIME

Start by doing 10 minutes and add 5-10 minutes each time with a long term goal of 150 minutes/week.

Activities such as stretching, yoga/balance, isometrics, tonight with weights and elastic bands can be beneficial

**What activities are good for me?** Consult your health care provider to find the right form of physical activity for you.

### STRATEGIES

1. Commit to move more every day. Use the stairs, park farther away, instead of calling a coworker, walk to their desk.
2. Recruit a fitness buddy - someone to walk with and provide support
3. Log your exercise and make a personal goal to increase over time.

4. Choose shoes that fit properly.
5. If joints hurt, consider water exercise or stationary cycling.
6. Use distractions like watching TV or reading while on the treadmill.

### MOTIVATION

Set goals regularly and choose activities you enjoy.

### SAFE EXERCISE

1. Blood sugar level should be between 100-250 mg/dL before exercise
2. Drink plenty of water
3. Insulin should not be injected into exercising limbs
4. Have dilated eye exam to be cleared for any lifting or jarring activity
5. Have doctor check your feet prior to beginning an exercise regime
6. Carry carbohydrate such as fruit juice or four glucose tablets and follow 15/15 rule for treatment of low blood sugar
7. Wear diabetes identification and carry phone to call for help
8. Involve your friends and family and train them on what to do in an emergency
9. Stop any activity if you feel faint, have pain or shortness of breath
10. Eat a snack before exercise to prevent hypoglycemia

### WHAT IF I TAKE INSULIN?

- Learn to adjust my insulin with my activity
- Check blood sugar before activity - eat snack with BG less than 100 mg/dL
- Check for ketones if great than 300 mg/dL
- Avoid activity if ketones are moderate to large
- Avoid activity when insulin is peaking. Always carry a carbohydrate source.

## MY PLAN FOR PHYSICAL ACTIVITY

### What I'll do

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### What barriers may get in the way?

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---

### How long will each session be?

---

---

---

### How often will each session be?

---

---

---

### Which days and times will work best?

---

---

---

### Who will be my support?

---

---

---

## TAKING CARE OF YOURSELF

### PREVENTING DIABETES COMPLICATIONS

Diabetes can cause serious medical problems or complications. This can happen after you have had diabetes for many years. Controlling your blood sugar can help reduce your risk for complications - even with good blood sugar control you have a better chance of delaying or preventing problems if you know what to watch for and how to care for yourself.

### CARING FOR YOUR FEET

Nerve damage, circulation problems and infections can cause serious problems with your feet. Nerve damage can cause you to lose feeling in your feet, allowing injuries such as cuts, sores and ulcers go unnoticed. Sometimes nerve damage can deform or misshape feet, causing pressure points that can turn into blisters, sores or ulcers. Poor circulation may cause these injuries to heal slowly or not at all. Taking care of your feet every day can go a long way toward preventing serious problems.

## FOOT CARE GUIDELINES

### CHECK YOUR FEET EVERYDAY

This helps catch problems before they become serious. If you have problems looking at your feet, use a hand mirror or have someone else look at them. Check the top and bottom of each foot and in between your toes.

### CALL YOUR DOCTOR IF YOU HAVE

Cuts, scratches and sores, especially if they show signs of not healing or signs of infection.

- Blisters, corns and calluses.
- Any change in feeling - pain, tingling or numbness.
- Any color or temperature changes.
- A red, tender toe.

### WASH YOUR FEET EVERY DAY

Use warm water and mild soap. Don't use hot water or soak your feet. After washing your feet, dry them thoroughly, especially between toes. You can use moisturizing cream to soften dry skin.

### KEEP TOENAILS WELL-TRIMMED

Cut your nails to follow the curve of your toe to prevent ingrown toenails. An emery board can be used to gently shape the nail and smooth the edges.

### DO NOT USE SHARP TOOLS OR CHEMICALS ON YOUR FEET

Do not trim or try to remove corns, calluses or warts yourself with razor blades, pocketknife, scissors or chemical agents (iodine, peroxide, strong antiseptics, etc.)

### PROTECT YOUR TOES, FEET AND LEGS

Always wear shoes or slippers to protect your feet. Never go barefoot indoors or outdoors. Always wear socks with your shoes. Don't wear socks with holes in them or socks that have been mended. Don't wear tight socks or garters. Inspect shoes for rough, worn or sharp parts in the shoe. If feet are cold, put socks on. Do not use hot water bottles or heating pads, or place your feet by a fire or on a heat vent where they could get burned.

### BUY AND WEAR COMFORTABLE SHOES

Your shoes should not pinch or rub. Make sure the toe box is roomy enough to wiggle your toes and make sure the heel fits without slipping. Avoid wearing plastic shoes, flip-flops and open-toed or pointy-toed shoes. Break new shoes in gradually.

### HAVE YOUR DOCTOR CHECK YOUR FEET AT EACH VISIT



# Keeping your feet active

People with diabetes can develop problems with their feet. Getting daily physical activity and not smoking can help prevent foot damage by improving blood flow to the feet. This page shows some activities you can do to keep your feet healthy. Before doing these activities, warm up with 5 to 10 minutes of light activity, like walking.

## Golf ball roll

What you need: A golf ball and a chair

- Sit on the chair with both feet on the floor
- Roll a golf ball under the arch of your foot for 2 minutes
- Do the same with your other foot



## Towel stretch

What you need: A hand towel

- Sit on the floor with both legs in front of you
- Loop a towel around the ball of your foot and hold the ends of the towel in your hands
- Pull the towel toward you
- Hold for 30 seconds. Then relax for 30 seconds. Repeat 3 times
- Do 2 sets of 10 with each foot



## Calf raises

What you need: A chair for support

- Hold on to the back of the chair for balance
- Lift one foot off of the floor so that all your weight is placed on the other foot
- Raise the heel of your foot as far as you can. Repeat 10 times
- Do 2 sets of 10 with each foot

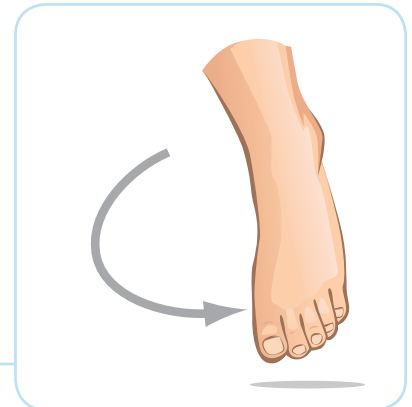


# Keeping your feet active

## Ankle range of motion

What you need: A chair to sit on

- Sit down so that your feet do not touch the floor
- Point your toe. Use your foot to write each letter of the alphabet in the air
- Do 2 sets with each foot



## Marble pickup

What you need: 20 marbles, a bowl, and a chair

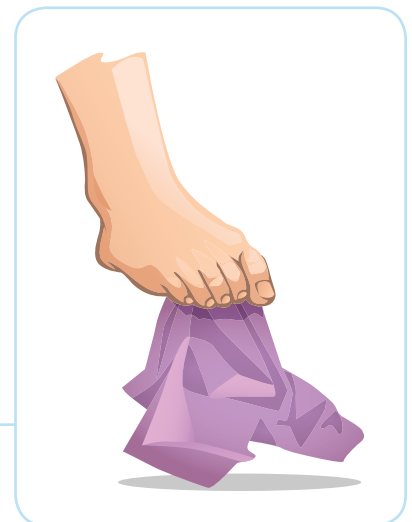
- Sit on the chair with your feet flat and place the 20 marbles on the floor in front of you
- Use your toes to pick up 1 marble at a time and place it into the bowl. Continue until you have picked up all the marbles
- Do the same with your other foot



## Towel curls

Equipment needed: A hand towel and a chair to sit on

- Sit with both feet on the floor and put the hand towel in front of you
- Grasp the center of the towel with your toes. Curl the towel toward you
- Repeat 5 times with each foot



**Talk with your doctor before beginning an exercise program.**

For more information, visit [Cornerstones4Care.com](http://Cornerstones4Care.com)



## TAKING CARE OF YOURSELF

### EYE CARE

Diabetic eye disease (also called retinopathy) is a serious problem that can lead to loss of sight. Diabetic eye disease may develop even when your sight is good. Over time, diabetes can cause damage to the tiny blood vessels that supply blood to the retina (the light-sensing part of the inner eye).

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

- Control your blood pressure. High blood pressure may contribute to retinopathy.
- Get a dilated eye exam by an eye specialist every year.
- Keep your blood sugar under control.
- Call your doctor or eye specialist right away if you notice signs of vision changes such as having trouble reading, blurred vision, seeing rings around lights, dark spots, floaters or flashing lights.

### PROTECTING YOUR HEART AND BLOOD VESSELS

Heart and blood vessel problems are the main causes of sickness and death among people with diabetes. It is known that people with diabetes are twice as likely to develop heart and blood vessel disease. High blood sugars increase the process of hardening of the arteries (clogging/narrowing of the blood vessels). These problems can lead to high blood pressure, heart attack and stroke. Heart and blood vessel problems can also cause poor circulation (blood flow) in the legs and feet.

#### You can help prevent or reduce your risk of heart and blood vessel disease if you:

- Control your blood sugar levels
- Control your cholesterol and triglycerides. Eat foods that are low in saturated fats, trans fats and cholesterol. Have your cholesterol and triglycerides checked yearly.

#### Goal range is:

Total Cholesterol: Less than 200 mg/dL  
LDL ("bad") Cholesterol: Less than 100 mg/dL

With Coronary Artery Disease Good Range is less than 70 HDL ("good") Cholesterol:

- Men: Greater than 40mg/dL
- Women: Greater than 50mg/dL

Triglycerides: Less than 150 mg/dL

#### Maintain a healthy weight.

If you are overweight, lose weight. If you are overweight, you are more likely to have high blood pressure, high cholesterol and high triglycerides.

#### Control your blood pressure.

Target range is 120/80. High blood pressure damages blood vessels. People with diabetes are more likely to have high blood pressure. Have your blood pressure checked regularly and follow the treatment your doctor recommends.

#### Limit use of salt and alcohol.

#### Get regular exercise.

#### Avoid tobacco or quit smoking.

Use of tobacco narrows the blood vessels and increases your risk of heart disease.

#### Call your doctor or go to the emergency room if:

You are having chest pain, shortness of breath, swollen ankles, irregular heartbeat, slurred speech, feeling numbness or weakness in one arm or leg. These can be symptoms of a heart attack or stroke.

### CARING FOR YOUR TEETH AND GUMS

Because of high blood sugar, people with diabetes are more likely to have problems with their teeth and gums. When blood sugars are high, your saliva makes your mouth a good home for disease-causing bacteria, causing tooth decay and gum infections. Like all infections, dental infections can make your blood sugar go up and difficult to control.

#### Preventing tooth and gum problems:

- Brush your teeth using a soft toothbrush. Brush your teeth at least twice a day and rinse your mouth thoroughly. Be sure to brush before you go to sleep.
- Massage the gums.
- Rinse your toothbrush thoroughly after brushing. Store it vertically with the bristles at the top. Replace your toothbrush every 3 months. Toothbrushes can harbor bacteria.
- Floss your teeth daily. Flossing removes food your toothbrush can't reach.
- Clean your dental bridges or dentures as directed by your dentist.
- Keep your regular dental appointments. You should have your teeth cleaned and checked by a dentist or hygienist at least every six months. Make sure your dentist knows you have diabetes.

#### Call your dentist if you have the following:

- Bleeding gums when you brush or eat
- Red, swollen or tender gums
- Pus between your teeth and gums
- Constant bad breath or bad taste in your mouth

### PROTECTING YOUR KIDNEYS

Diabetes can cause diabetic kidney disease (also called diabetic nephropathy), which can lead to kidney failure. The kidneys keep the right amount of water in the body and help filter our harmful wastes. When the kidneys fail, a person has to have his or her blood filtered through

a machine (a treatment called dialysis) several times a week or has to get a kidney transplant.

Kidney disease happens so slowly that it is possible for you to have it and not know it until the kidneys are already damaged.

#### You can help protect your kidneys if you:

- Keep your blood sugar under control
- Keep your blood pressure under control (target range 120/80)
- Have your doctor check yearly for protein in the urine. This is called a microalbumin test. It will be the first sign that there is a problem with the kidneys
- Prevent and treat infections of the bladder and kidneys right away
- Avoid tobacco or quit smoking

### PROTECTING YOUR NERVES

Diabetic nerve damage (also called diabetic neuropathy) is a common problem for many people with diabetes. Over time, high blood sugar levels damage the delicate coating of nerves. This damage can cause many problems. Some signs of diabetic nerve damage are pain, burning, tingling or loss of feeling in the feet and hands. Nerve damage can cause you to sweat abnormally and make it hard for you to tell when your blood sugar is low. It can also make you feel lightheaded when you stand up.

Nerve damage can lead to other problems. Some people develop problems swallowing and keeping food down. Nerve damage can also cause bowel problems, make it hard to urinate, cause dribbling with urination and lead to bladder and kidney infections. Many people with nerve damage have trouble having sex. For example, men can have trouble keeping their penis erect, a problem called impotence (erectile dysfunction). Women may have a decrease in vaginal lubrication or an inability to reach orgasm.

**You can help reduce your risk of nerve damage if you:**

- Control your blood sugar level
- Have your doctor check your feet at each visit
- Once a year, your doctor should test how well you can feel temperature, pinprick, vibration and position in your feet
- Report to your doctor any problems with sex, numbness, tingling, burning with hands and feet, or bladder, bowel or digestive problems

## FLU & PNEUMONIA SHOTS

**If you have diabetes, a flu and pneumonia shot could save your life.**

### GUIDELINES FOR FLU AND PNEUMONIA SHOTS

- Get a flu shot every year (the flu virus may change every year)
- Get the flu shot before the flu season starts (usually in October to mid-November)
- CDC recommends two pneumonia shots for people age 65 and older. And, in some adults ages 19 years or older with certain medical conditions
- You may get a pneumonia shot any time of the year
- Both shots may be given the same day
- Encourage family members or caregivers to get their shots
- Make sure to talk to your doctor before getting either the flu or pneumonia shot

Check with your physician about the shingles shot.

### Take control!

Diabetes can make the immune system more vulnerable to severe cases of flu and pneumonia. People with diabetes are three times more likely to die from complications of flu and pneumonia than people without diabetes. You can reduce your risk of flu and pneumonia by receiving these vaccinations.

### Remember:

You cannot get the flu or pneumonia from receiving these shots!

### Mild problems:

- Occasional swelling and soreness at the injection site
- Rarely, fever and muscle pain

### Where do I get flu and pneumonia shots?

- Your doctor or other healthcare professional
- Local health department

Medicare Part B and many other health insurance plans cover the cost of the shots.

### Other steps you can take to protect against flu or pneumonia:

- Wash your hands often
- Avoid crowds when possible
- Do not share personal items such as towels, glasses or silverware
- Use disposable tissues
- Keep your blood glucose well controlled

## DEALING WITH STRESS, EMOTIONS AND DEPRESSION

### Engage one or more of your sense to relieve stress. Some examples:

- Listen to a favorite piece of music or a relaxation CD
- Read a good book or watch your favorite uplifting film
- Enjoy the aroma of scented candles, clean laundry or outdoor smells
- Sing out loud. Repeat affirmations. Watch a funny show or call someone who makes you laugh.

### STRESS

We all encounter stressful situations daily. Stress is feeling strained or threatened from the ups and downs of everyday life. Stress can be physical, like an injury or illness, untreated sleep apnea or chronic pain. Or it can be emotional, like financial worries, moving to a new house or family problems.

People with diabetes face special challenges with stress because it can affect the blood sugar levels. Stress hormones are released and may directly alter blood sugar levels and keep your body from making insulin or using it properly. It is important for your physical and emotional health to control the stress in your life in a healthy way. Try to find out what is causing the stress in your life. Know that you have some control over your reaction to stress. Listed below are some healthy responses to stress.

### Stop and breathe.

At the first sign of stress, just stop what you are doing or thinking and take a few deep breaths. Yoga, meditation or prayer may also be helpful.

### Adjust your outlook.

Take a look at how you perceive stress. Do you imagine worst-case scenarios, obsess over details or take things too personally? Try to change your perceptions. Look for humor in difficult situations. Give others the benefit of the doubt. Put things into perspective by asking yourself, "Will this matter in five years?"

### Re-prioritize your time.

Schedule your time to reflect your interests. Learn to say "no." Choose to enjoy your activities without feeling rushed, pressured or guilty.

### Develop de-stressing habits.

Learn to relax. Discover healthy distractions like socializing, exercising or starting a new hobby.

Sometimes stress can be so overwhelming that counseling is needed. Talking with a therapist may help you come to grips with your problem. You may also learn new ways of coping or new ways of changing your behavior.

### EMOTIONS

Living with diabetes isn't easy. The stress of daily living, along with managing diabetes every day, can affect your mood and emotions.

When you are first told that you have diabetes, you may experience some denial, telling yourself that your doctor made a mistake. Later on, you convince yourself that you no longer have diabetes, or that it is not a very serious disease. Sometimes you may feel angry or fearful that you have diabetes. You may feel that you won't be able to cope and fear the complications of the disease. It is not uncommon for a person to feel frustrated at how diabetes may change your life and how you live it. You may feel anger about the burden of self-management activities. You may also feel a sense of loss about your "old" (before diabetes) body, self-image or lifestyle.

Even if you have adapted well to your diabetes, negative feelings may occur from time to time. Often there seems to be no "good reason" for your mood.

Sometimes you react to specific events in your life. Keep in mind that emotional problems often have physical causes. For example, poor blood sugar control, side effects from medication, and chemical or hormonal imbalances can lead to emotional problems. Sometimes your emotions just need to run their course and sometimes they may indicate a more serious problem that requires treatment.

## DEPRESSION

It is not uncommon to experience depression if you have diabetes. It is normal to feel “blue,” down or discouraged now and then, but prolonged (longer than two weeks) feelings are not.

### Common symptoms of depression include:

- Loss of pleasure. A lack of interest in things you used to enjoy
- Feeling sad or empty
- Change in sleep patterns - sleeping too much, too little or poor sleep
- Change in appetite - significant weight gain or weight loss
- Trouble concentrating
- Loss of energy; feeling tired all the time
- Nervousness or anxiety; having difficulty sitting still
- Guilt; feeling like you never do anything right; feeling worthless
- Thoughts of death or suicide; feeling you want to die or are thinking about ways to hurt yourself

### Let your healthcare team know how you feel.

Point out problems you have with your diabetes care plan. A diabetes educator or other healthcare provider may be able to help you think of ways to deal with these problems.

Talk about the stresses you feel at home, school and work. How do you deal with these pressures? If you feelings and stress are getting in the way of taking care

of yourself, you need to discuss other options with your healthcare provider such as counseling or medication.

### Support Group

It helps to talk with other people who have problems like your own. You may want to consider joining a diabetes support group. In support groups, people who have just found out they have diabetes can learn from people who have lived with it for a long time. People can talk about and share how they deal with their diabetes. They can also talk about how they take care of their health, how they prepare food and how they get physical activity.

### Counseling

One-on-one and family counseling sessions may also help. Be sure to see a counselor who knows about diabetes and its care. Ask your healthcare provider to help you find a counselor.

## DIABETES INFORMATION RESOURCE LIST

**The following is a list of organizations that can provide information about diabetes. Ask your health care team to help you find other resources for information or support.**

### AMERICAN ASSOCIATION OF DIABETES EDUCATORS

100 West Monroe, 4th Floor | Chicago, Illinois 60603  
800-832-6874  
800-338-3633 (for names of diabetes educators)  
www.diabeteseducator.org

### AMERICAN DIABETES ASSOCIATION

1660 Duke Street | Alexandria, Virginia 22314  
800-DIABETES (342-2383)  
800-ADA-ORDER (236-6733—to order publications)  
800-232-3472  
www.diabetes.org

### AMERICAN DIETETIC ASSOCIATION

216 West Jackson Boulevard, Suite 800  
Chicago, Illinois 60606-6995  
800-745-0775  
800-366-1655 Consumer Nutrition Hotline, Spanish speaker available  
www.eatright.org

### AMERICAN HEART ASSOCIATION NATIONAL CENTER

7272 Greenville Avenue | Dallas, Texas 75231  
800-AHA-USA1 (242-8721)  
www.americanheart.org

### CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC): DIVISION OF DIABETES TRANSLATION

Public Inquiries and Publications  
P.O. Box 8728 | Silver Spring, Maryland 20910  
877-CDC-DIAB (232-3422)  
Diabetes@cdc.gov  
www.cdc.gov/diabetes

### DEPARTMENT OF VETERANS AFFAIRS DIABETES PROGRAM

www.va.gov/diabetes  
**Veterans Health Administration**  
810 Vermont Avenue, N.W. | Washington, D.C. 20420  
**Veterans Administration Health Benefits**  
1-877-222-8387  
iris.va.gov/phonenbrs.asp

### THE FOUNDATION OF THE AMERICAN ACADEMY OF OPHTHALMOLOGY

Diabetes Project  
P.O. Box 429098 | San Francisco, CA 94142  
800-222-EYES (3937)  
www.aao.org/aaoweb1/foundation/301.cfm

### INDIAN HEALTH SERVICE DIABETES PROGRAM

5300 Homestead Road, N.E. | Albuquerque, NM 87110  
505-248-4182  
www.ihs.gov/medicalprograms/diabetes

### JUVENILE DIABETES RESEARCH FOUNDATION INTERNATIONAL

120 Wall Street, 19th Floor | New York, NY 10005  
800-JDF-CURE (533-2873)  
info@jdrf.org  
www.jdf.org

### MEDLINE PLUS

www.medlineplus.gov

### NATIONAL DIABETES EDUCATION PROGRAM

#### Program and partnership information:

1-877-CDC-DIAB  
Mail requests to NDEP, c/o CDC  
Diabetes Program, Public Inquiries  
P.O. Box 8728 | Silver Spring, MD 20910  
www.cdc.gov/diabetes  
diabetes@cdc.gov

#### Campaign materials and publications:

1-800-438-5383  
Mail requests to NDEP,  
National Diabetes Education Clearinghouse  
1 Information Way | Bethesda, MD 20892  
berryt@extra.niddk.nih.gov  
www.ndep.nih.gov  
800-860-8747 or 301-654-3327  
ndic@info.niddk.nih.gov  
www.niddk.nih.gov

### NATIONAL EYE INSTITUTE NATIONAL EYE HEALTH EDUCATION PROGRAM

Diabetic Eye Disease Public Education Program  
2020 Vision Place | Bethesda, MD 20892-3655  
800-869-2020 (to order materials)  
www.nei.nih.gov/nehep/ded.htm



**McLaren Greater Lansing Diabetes Education**

2727 S. Pennsylvania Ave.

Lansing, MI 48910

(517) 975-2270

[mclaren.org/lansing](http://mclaren.org/lansing)



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