DIABETES SELF-MANAGEMENT

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McLaren
HEALTH CARE

Resources: Centers for Disease Control and Prevention. Take Charge of Your Diabetes. 3rd Edition. Atlanta: U.S. Department of Health and Human Services. Anyone may reproduce any or all of the contents.

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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.

Uncontrolled 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 dysfuntion, 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.

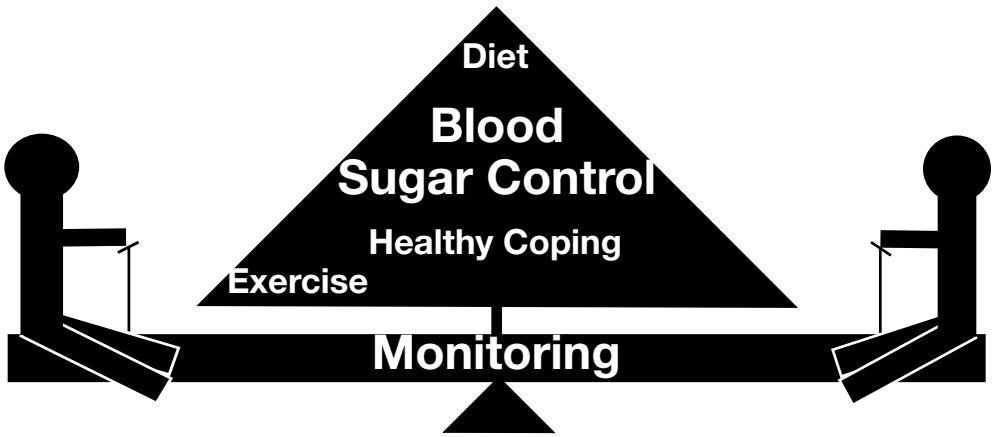
• Being physically active—regular exercise, increasing activity.

• Taking your diabetes medication (if prescribed by your doctor).

• Checking your blood glucose.

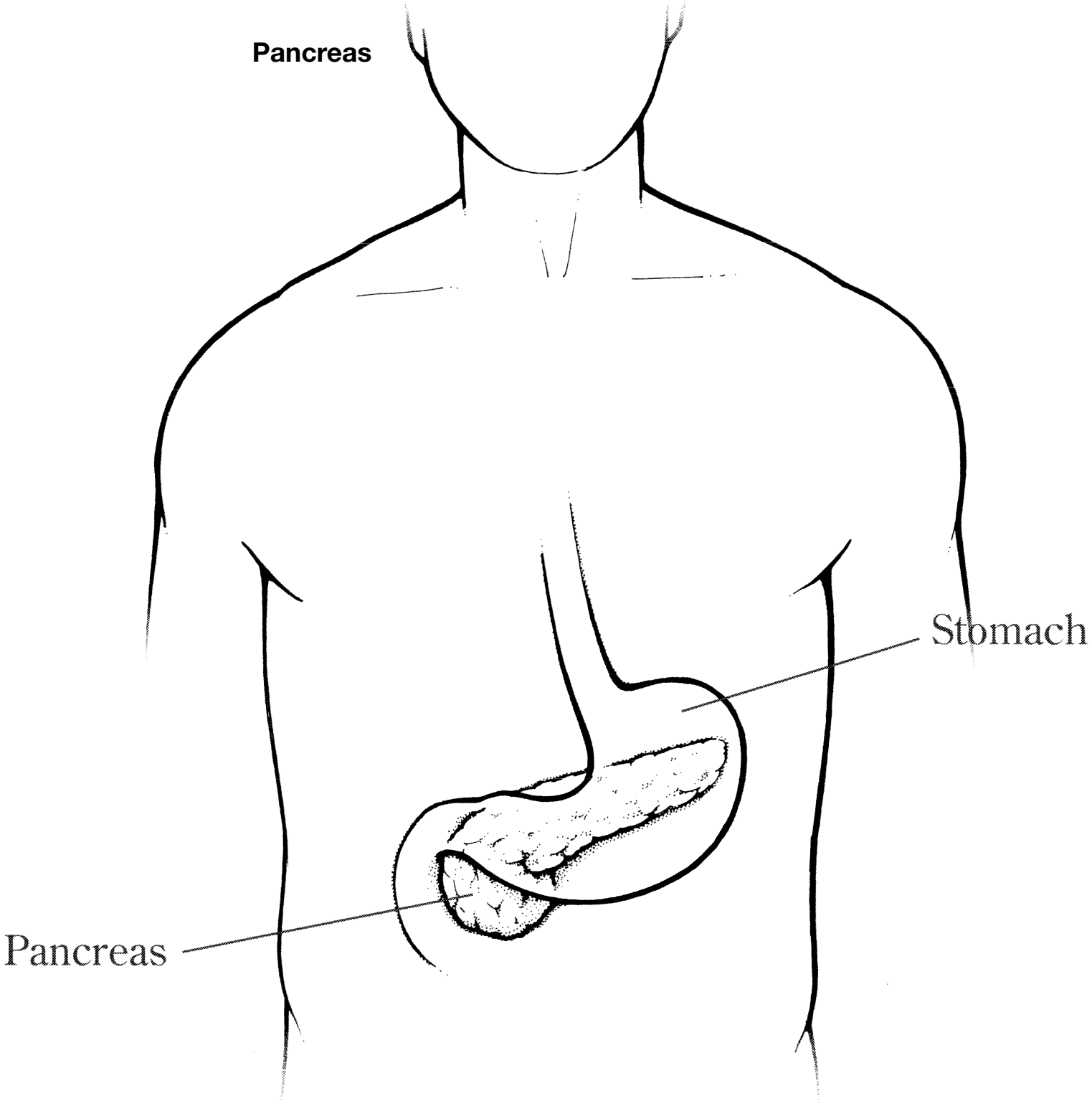
• Coping with stress in a healthy way.

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

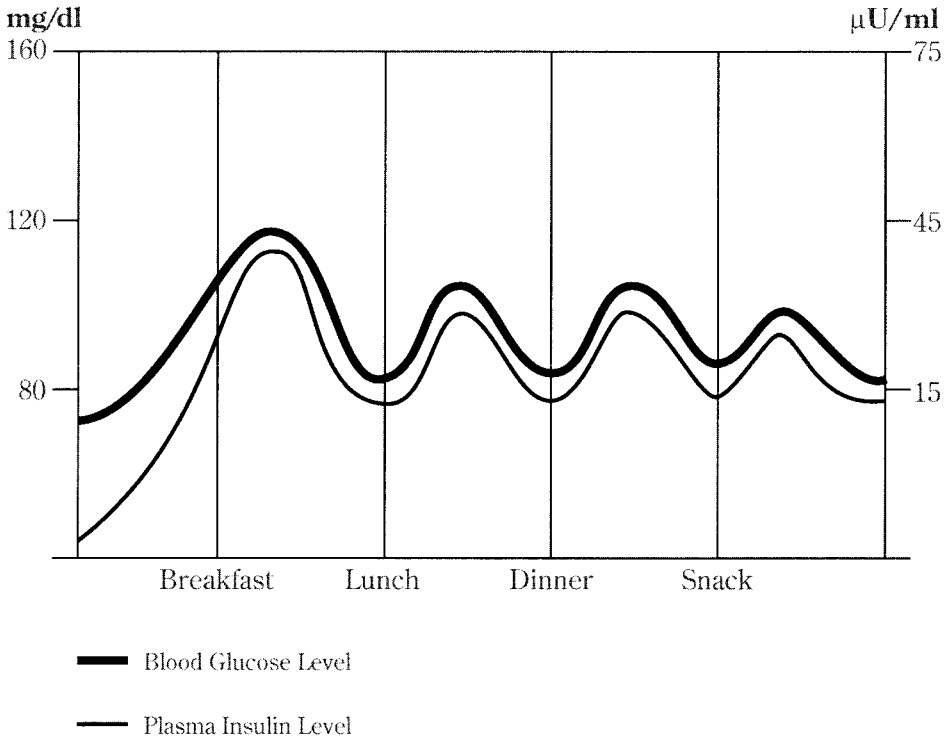


Source: Centers for Disease Control and Prevention. Take Charge of Your Diabetes. 3rd edition. Atlanta: U.S. Department of Health and Human Services.

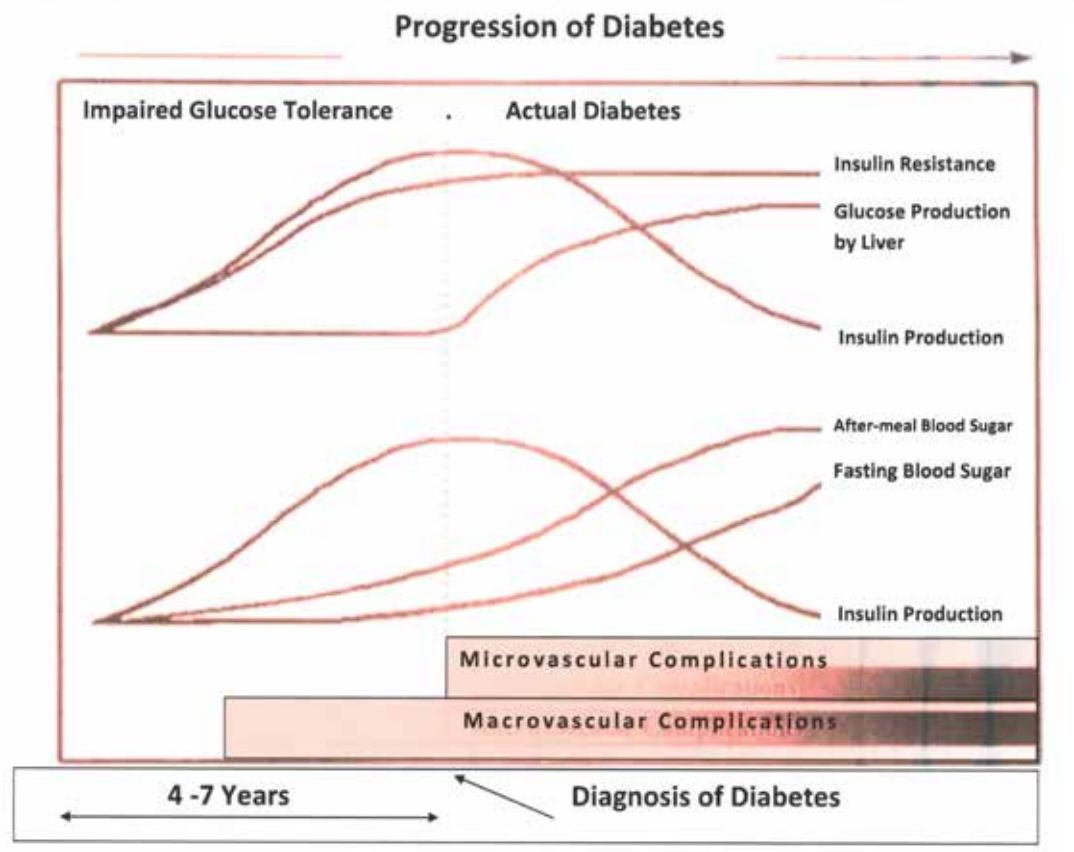
Pancreas



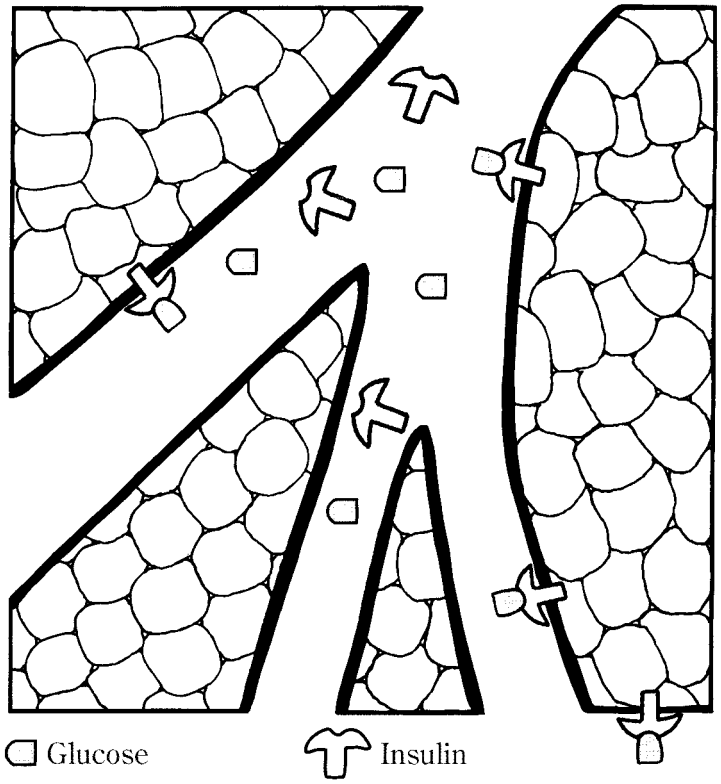
➲ Normal Blood Glucose and Insulin Levels



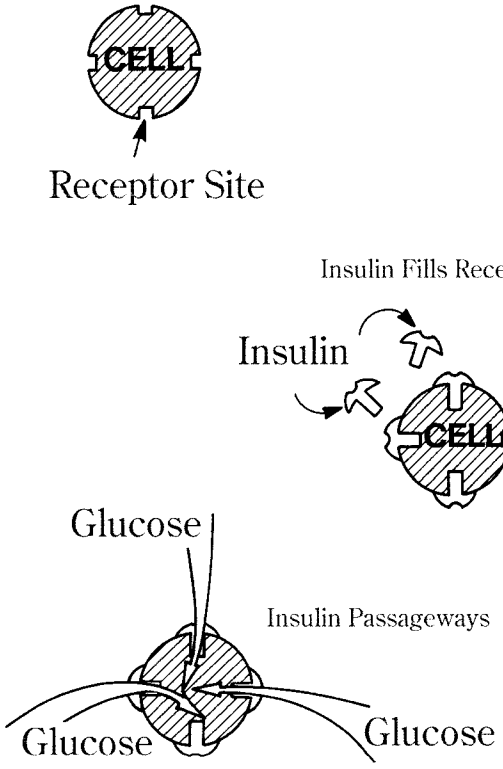
➲ Progression of Type 2 Diabetes



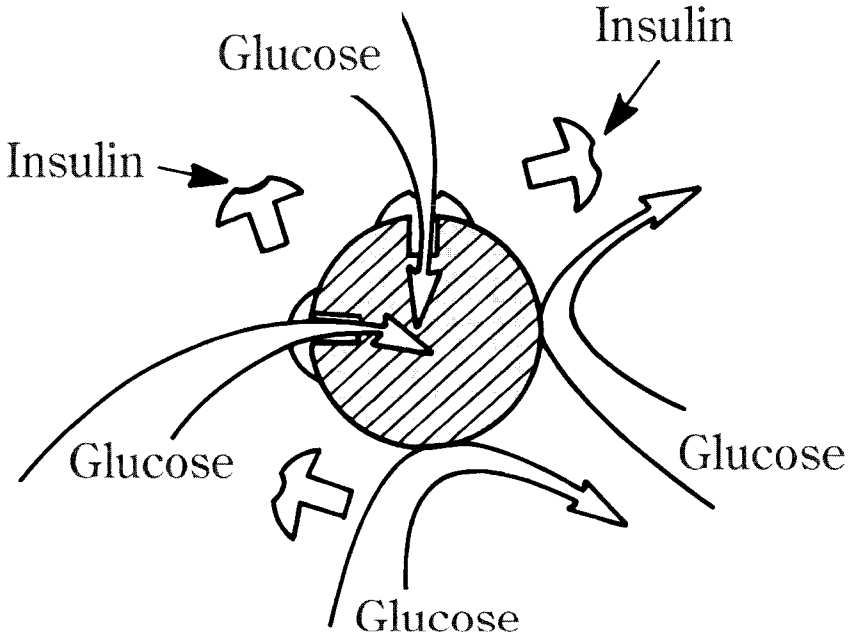
Normal Glucose Metabolism



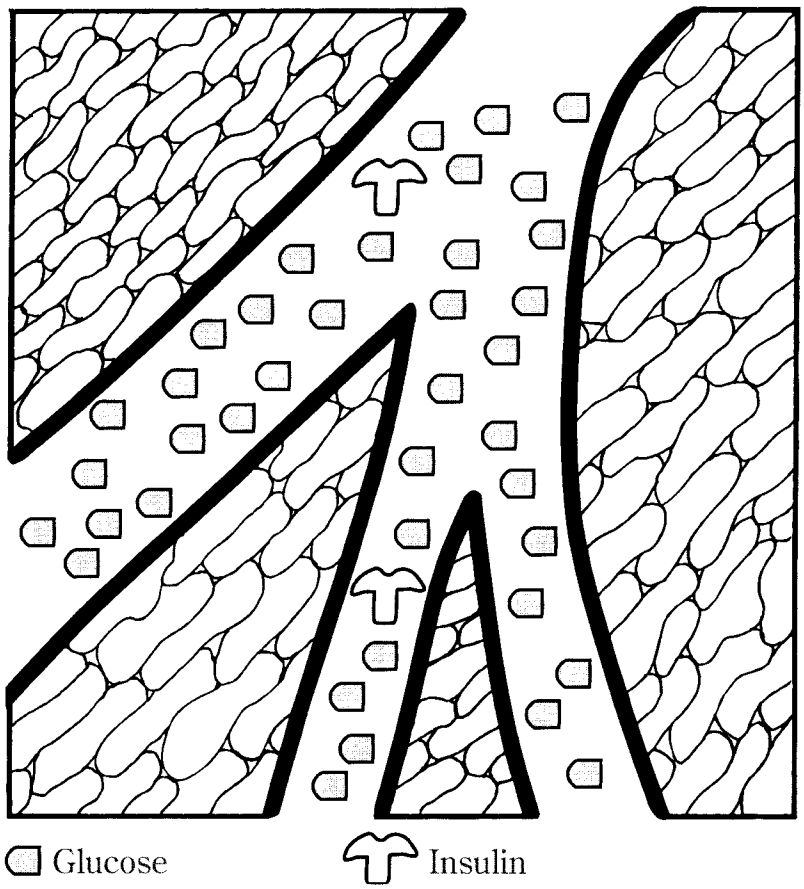
How Insulin Works



Insulin Resistance Due to Excess Weight



Glucose Metabolism in Diabetes



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 80- 130mg/dL before meals.** High blood sugars can be a serious problem. Over time, too much sugar in the blood can cause long-term 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.

High blood sugar (Hyperglycemia)

Cornerstones4Care™

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

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.

Signs & Symptoms

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

Very thirsty

Needing to pass urine more than usual

Dry skin

Very hungry

Sleepy

Blurry vision

Infections or injuries heal more slowly than usual

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.

Low blood sugar (Hypoglycemia)

Cornerstones4Care™

Causes

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

- Take certain medicines and eat too few carbohydrates, or skip or delay a meal
- 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.
- Headache.
- Shaky, nervousness, anxious.
- Weakness, fatigue or drowsy.
- Irritability.
- Confusion.
- Dizzy.
- Blurred vision.
- Fast and/or pounding heartbeat.
- Sweating (cold, clammy).
- Difficulty concentrating.
- 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 - Rule of 15

If you have any signs that your blood sugar may be low, test it right away. If your blood sugar is less that 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 if blood glucose below 50 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	5-7 pieces
Honey or corn syrup or brown sugar	1 tablespoon
Glucose Tablets	3-4 tablets
Milk (Fat-Free, Skim)	1 cup
Raisins	2 tablespoons
Crackers	6
Fruit Roll-up	1

Preventing Low Blood Sugar

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.**

Blood Sugar Monitoring

Why should I test my blood sugar?

Testing your own blood sugar can tell you 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 make changes as needed 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 8 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.
- Two hours after meals to see how foods and medications affect blood sugar levels.

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. Most 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.

Glycemic Control for People with Diabetes

When	Normal	ACE*	ADA**	Your Goal
Before meals	65-99 (mg/dL)	Lower than 110 (mg/dL)	80-130 (mg/dL)	
2 hours after a meal	Lower than 140 (mg/dL)	Lower than 140 (mg/dL)	Lower than 180 (mg/dL)	
Bedtime	Lower than 120 (mg/dL)		110-150 (mg/dL)	
A1c (percent)	Lower than 6%	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 you blood sugar goals for at least 1 week, or until your doctor advises you that more frequent testing is not needed.

What time of day should I test?

Recommendations for the best time of day to test your blood sugar depend on your medicine, mealtimes and blood sugar control.

Times to Monitor	**Day 1**	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**
Before breakfast (Fasting)							
2 hours after breakfast							
Before lunch							
2 hours after lunch							
Before dinner							
2 hours after dinner							
Bedtime							

Keep a Record

Keeping a record of your daily blood sugar readings can reveal patterns in your overall control. It is also beneficial to include notes about diet, activity, and medications so your health care team understands certain trends and patterns that may be occurring. This information is used to help make changes in treatment if needed.

Most people use a paper logbook to write down their daily readings and notes about diet, exercise, medication and symptoms.

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.

HbA1c	eAGmg/dl
5	97
5.5	111
6.0	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

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 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

Criteria for diagnosis of Diabetes

Normal Blood Sugar	Prediabetes	Diabetes Mellitus
Fasting Blood Sugar 65- 99	Fasting Blood Sugar greater than or equal to 100 and less than 126	Fasting Blood Sugar greater than or equal to 126
2 hours after eating, Blood Sugar less than 140	2 hours after eating, Blood Sugar greater than or equal to 140 and less than 200	2 hours Blood Sugar level greater than or equal to 200 during an Oral Glucose Tolerant Test
		Symptoms of diabetes plus a casual Blood Sugar level greater than or equal to 200
HgbA1c 4.0 to 5.6	HgbA1c 5.7 to 6.4	HgbA1c equal to or greater than 6.5

Adapted from Clinical Practice Recommendations, American Diabetes Association, 2014

Healthy Eating and Diabetes

If you have diabetes, you can make a difference in your blood glucose control through your food choices.

Guidelines for Healthy Eating with Diabetes

- Your recommended meal plan should be based on your goal.
- Your nutrition education should continue throughout your life.
- You must have a balance between food, activity and medication, if prescribed.

Goals for Meal Planning

- Control your blood glucose levels.
- Achieve optimal blood lipid (cholesterol and triglycerides) levels.
- Achieve and maintain a healthy weight.
- Prevent, delay or treat diabetes complications.
- Provide overall good nutrition.

Tips to Remember

- Eat at least 3 meals daily no more than 4-5 hours apart.
- Eat a wide variety of foods every day.
- Include high-fiber foods, such as fruits, vegetables, whole grains, and beans.
- Use less fat, sugar, and salt.
- The food that is good for you is good for the whole family.
- Eat meals and snacks at regular times.
- Try not to skip meals.
- Eat a protein source at each meal.
- Watch portion sizes.
- If needed, you may add a bedtime snack of a bread/starch and milk or protein.

Remember!!

It is carbohydrates that raise blood sugar. Everyone needs to monitor **when and how much** carbohydrate they take in each day. The carbohydrate-containing food groups are the starch, starchy vegetables, fruit and milk groups. Sweets are also a carbohydrate containing food.

Plate Method for Healthier Eating

First, let's make sure that you are using a regular 9" size plate. You can see by the picture below that:

☑ 1/2 of your plate should be covered with vegetables.

This may be more vegetables than you are used to. By increasing vegetables, you will add more fiber and vitamins and minerals without adding a lot of carbohydrates, fat or calories. Try to eat two vegetables, like a salad and a cooked vegetable to have more variety and not get tired of your favorites. Remember corn, peas, sweet potatoes, potatoes and winter squash are not in this section. They belong in the Bread, Starch section of your plate.

☑ 1/4 of your plate should contain a bread, starch or grain

A basic portion size is one slice of bread, a dinner roll, or 1/2 cup peas, corn, potatoes, rice, or noodles. Men may add another starch serving to their meal.

☑ 1/4 of your plate should contain a meat or high protein food

The basic portion is 3 ounces of lean meats. This is about the size of the palm of your hand or a deck of cards.

☑ Fruit: On the left hand side is one serving of fruit

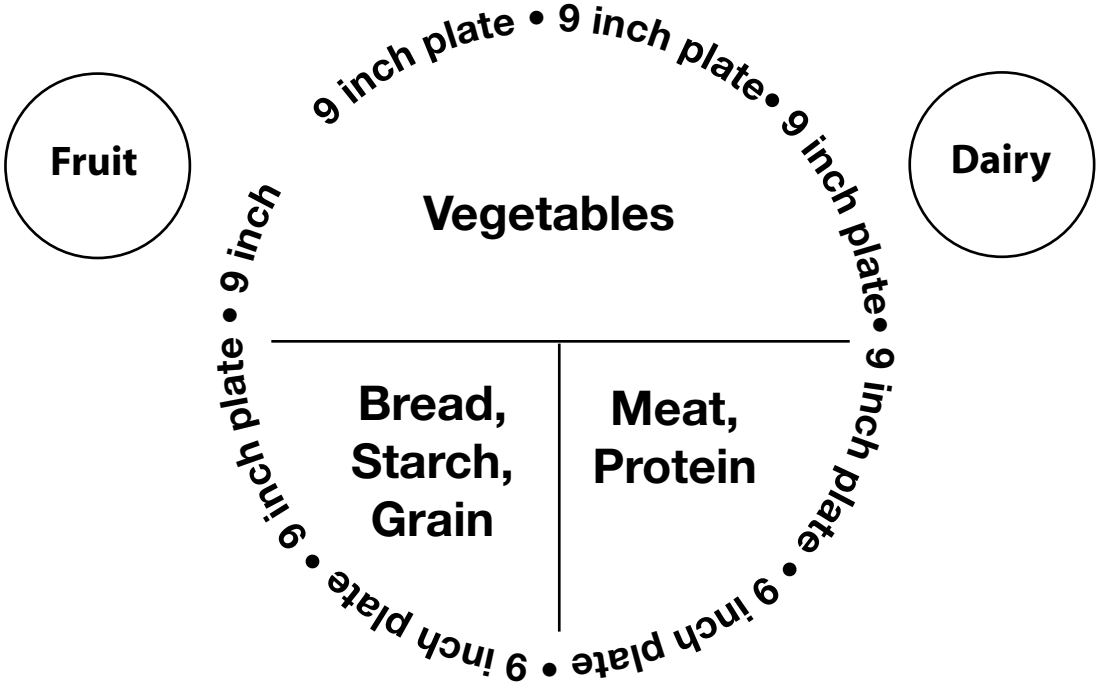
A serving is 1 small piece or 1/2 cup canned fruit or juice. If you use canned fruit, make sure it is no sugar added, lite or juice-packed.

☑ Dairy: On the right hand side is one serving of dairy.

A serving is 8 ounces. The best choices are fat-free, skim, 1/2%, or 1% milk and lite yogurt. Cheese is not in this section. Cheese would be part of your meat section on your plate.

☑ What about FATS?

- Try to use less! 1 teaspoon is generally a serving of butter, margarine, or mayonnaise. I tablespoon of salad dressing is a serving as well.
- Try Low fat or Fat Free versions.



Carbohydrate Counting

You have probably heard that carbohydrates are the nutrients that have the greatest effect on your blood sugar. There is no need to avoid foods with carbohydrates. Your body needs carbohydrates for energy.

Your goal is to control the amount of carbohydrates you eat throughout the day. Carbohydrate Counting is a way to plan the amount of carbohydrates you eat and better manage your diabetes. Carbohydrate Counting is not a diet. It is a meal planning tool that helps you understand how your food choices affect your blood glucose level.

Your meal plan will specify the grams of carbohydrates or number of Carbohydrate Groups for the day.

One Carbohydrate Group equals 15 grams of carbohydrate. It is important for the carbohydrates to be spaced through the day.

To count carbohydrates, you need to know what types of food contain carbohydrates.

In General

Most women need about 2-3 carbohydrate choices (30-45 grams of carbohydrate) at each meal. Men generally need about 4-5 (60-75 grams of carbohydrate). If you eat snacks, 1-2 carbohydrate choices (15-30 grams of carbohydrate) is reasonable. How many carbohydrate choices you need will depend on your size and activity level.

Carbohydrates Food Groups Include:

Grains, breads, cereals, dried beans, and starchy vegetables (4 or more servings per day)

– One slice bread, 1/3 cup rice, 3/4 cup ready-to-eat cereal, 1/2 cup cooked cereal, 1/2 cup corn, peas, potato, 1 cup winter squash, 1/3 cup baked beans

Milk and yogurt (2-3 servings per day)

– 1 cup milk

– 1 cup plain or lite yogurt

Fruits and fruit juices

– 4 oz juice (1/2 cup)

– 1 small piece of fruit

– 1/2 cup cooked or canned fruit (in own juice)

Sweets and Desserts (Use sparingly)

– Read the label for Total Carbohydrates

Portion control is very important in controlling blood sugar. Be sure to learn the portion sizes equal to one Carbohydrate Group. Measuring cups, spoons and scales may be helpful.

Free foods are foods with 20 calories or less. Not all sugar free foods are considered free. Reading the label will help you determine if a food is free or not and and no more than 5 grams of carbohydrates.

Watch portion sizes! You may find that two or three servings of a free food will provide you with enough carbohydrates to raise your blood sugar.

Healthy eating is more than carbohydrate counting. It is important to include all food groups (including the non-carbohydrate food groups) and to eat a variety of foods.

Non-carbohydrate food groups include:

Non-starchy vegetables (3 or more servings per day)

– 1 cup raw

– 1/2 cup cooked

– 3/4 cup vegetable juice

Meat, Poultry, Fish, Cheese and Eggs (2-3 servings per day)

– 2-3 ounces cooked lean meat (poultry, fish, cheese, or eggs)

– 1/2 cup cottage cheese

– 2 tablespoons peanut butter

Fats (Use sparingly)

– 1 teaspoon margarine, butter, or mayonnaise

– 1 tablespoon salad dressing or oil

– 4-10 nuts

A Few Words of Caution

Most sweets and desserts are high in fat and calories and low in nutrients. Only use these foods up to three times a week and only if your blood sugar is in good control. Also, be aware of "Sugar Free" on the label. This does not mean the food is free of carbohydrates. You need to look at the total carbohydrates on the label.

Moderation is the Key!

It is important to remember the healthiest (and tastiest) meal plan includes a variety of foods. Use the plate method to help with portioning.

A Final Word

Following a consistent eating plan is very helpful in managing diabetes. If your meal plan is working well for you right now, there is no need to change meal planning systems. But if you are working for better control and more flexibility-carbohydrate counting may be for you!

To End on a "Sweet Note"

There are many sweeteners on the market. Some provide calories and carbohydrates. Others do not. Sugar is a carbohydrate but in small amounts can be part of a healthy meal plan. The problem is many foods with added sugar are high in fat and contain little if any vitamins, minerals, or fiber. One teaspoon of sugar is 16 calories and is considered to be a "Free Food". Fructose is sometimes used as a sugar substitute. Like sugar, it needs to be used in small amounts since it is a carbohydrate. Sugar is also found as molasses, powdered sugar, brown sugar, corn syrup, raw sugar, and maple syrup, agave nectar and honey.

Sugar alcohol is another carbohydrate containing sweetener. Some examples are mannitol, sorbitol, xylitol, and isomalt. They are used in many sugar free candies, cookies, ice cream, and pies. Generally the body absorbs only 1/2 of the carbohydrate in sugar alcohol so it may have less effect on blood sugars.

Word of Warning: Sugar alcohol can have a laxative effect on many people.

Other sweeteners like aspartame (nutrasweet, Equal), sucralose (Splenda), saccharin and acesulfame K stevia, nectresse do not provide calories or carbohydrates. They are listed as free foods. You will find these sweeteners in many sugar free foods. Remember, although the sweetener is free, the food product that contains it may not be. Always check the Nutrition Facts label for Total Carbohydrate.

Let's Look at the Nutrition Facts

Serving Size

Always check the serving size. All the nutrient and calorie values are based this serving size. It may not be the appropriate serving size for you.

Total Carbohydrate

This is the **most important nutrient to look at when you have diabetes.** The higher the number the higher your blood sugar may rise. Sugar is just a small part of this number. Use your carbohydrate goals to help determine which foods fit into your meal plan.

Dietary Fiber

It is recommended to have 20-35 grams of fiber daily. Fiber is a carbohydrate that can't be digested. It may not raise the blood sugar. A food with at least 5 grams of fiber is a good source of fiber.

Total Fat

Aim for less! A good rule of thumb is to choose foods that have only 3 grams of fat per 100 calories.

Saturated Fat

This part of the Total Fat will raise blood cholesterol. Try to **choose foods with very little of this fat.** It should make up less than 1/3 of total fat eaten for the day.

Trans Fat

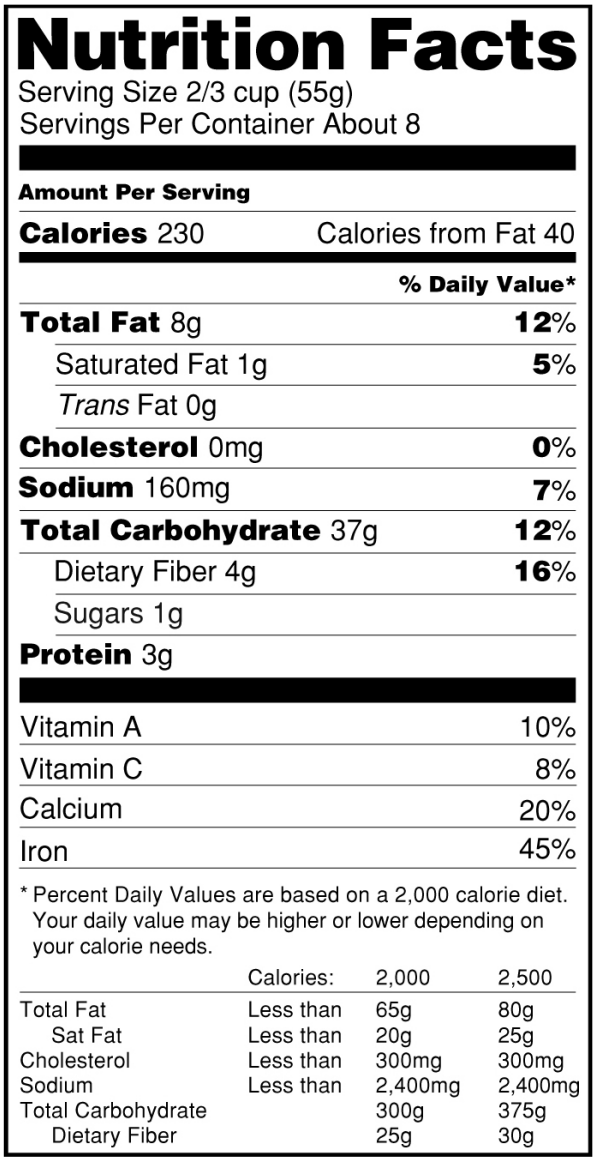
Similar to saturated fat, they raise levels of "bad" cholesterol while lowering "good" cholesterol. Found in foods made with partially hydrogenated oils. Choose foods with zero grams of trans fat.

Monounsaturated Fat

Not all food labels will list this fat. This fat may help to lower cholesterol. Try to **choose foods with more of this type of fat.**

Sodium

A food is considered to be high in sodium if it has more than 480 mg per serving. For people who need to limit sodium a goal is 1,500 mg daily.



Nutrition Facts

Serving Size 2/3 cup (55g)
Servings Per Container About 8

Amount Per Serving

Calories 230	Calories from Fat 40
	% Daily Value*
Total Fat 8g	**12**%
Saturated Fat 1g	**5**%
Trans Fat 0g	
Cholesterol 0mg	**0**%
Sodium 160mg	**7**%
Total Carbohydrate 37g	**12**%
Dietary Fiber 4g	**16**%
Sugars 1g	
Protein 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

1200-1400 Calorie Carbohydrate Controlled Meal Plan

135-160 grams Carbohydrate 66-84 grams Protein Up to 46 grams Fat
(9-10 Carbohydrate Choices)
Include in Daily Intake: 4-6 servings Starch/Bread; 2-3 servings Fruit; 2 servings Milk; 3 or more servings Vegetables; 5-7 ounces Meat; and up to 4 servings Fat

Meal Plan	Sample Menu	Sample Menu
Breakfast: **2-3 Carbohydrate Choices** **(26-49 grams Carbohydrate)**	1 cup skim, 1/2, or 1% **Milk** 3/4 cup **Cheerios**	1 slice Whole Wheat **Toast** 1 Tbsp Peanut Butter 1/2 **Banana** 1 cup skim, 1/2, or 1% **Milk**
Lunch: **3 Carbohydrate Choices** **(41-49 grams Carbohydrate)**	2 slices Whole Wheat **Bread** 2 ounces Turkey Breast 1 Tbsp Low Fat Mayonnaise Lettuce and Tomato Slice 6 Baby Carrots 1 small **Apple**	1 cup Chicken Noodle **Soup** 6 Soda **Crackers** 1/2 cup Cottage Cheese Tossed Salad 2 Tbsp Low Fat Dressing 1/2 cup **Pears**
Snack: **0-1 Carbohydrate Group** **(0-19 grams Carbohydrate)**	1 cup *Lite* Raspberry **Yogurt**	
Dinner: **3 Carbohydrate Choices** **(41-49 grams Carbohydrate)**	2/3 cup Brown **Rice** 1/2 Chicken Breast 1 cup Broccoli 1 cup **Melon**	Small Baked **Potato** 2 tsp margarine Medium Pork Chop 1 cup Green Beans 1 cup skim, 1/2, or 1% **Milk** 1/2 cup Natural **Applesauce**
Snack: **0-1 Carbohydrate Group** **(0-19 grams Carbohydrate)**	3 cups (popped) low fat microwave **Popcorn**	

Carbohydrate Choices are in bold print in the Sample Menus.

1400-1600 Calorie Carbohydrate Controlled Meal Plan

150-180 grams Carbohydrate 77-96 grams Protein Up to 53 grams Fat
(9-13 Carbohydrate Choices)
Include in Daily Intake: 5-8 servings Starch/Bread; 2-3 servings Fruit; 2-3 servings Milk; 3 or more servings Vegetables; 5-7 ounces Meat; and up to 4 servings Fat

Meal Plan	Sample Menu	Sample Menu
Breakfast: **3 Carbohydrate Choices (41-49 grams Carbohydrate)**	1 cup skim, 1/2, or 1% **Milk** 1/2 cup **Oatmeal** 2 Tbsp **Raisins**	1 slice Whole Wheat **Toast** 1 Tbsp Peanut Butter 1/2 **Banana** 1 cup skim, 1/2, or 1% **Milk**
Lunch: **3 Carbohydrate Choices (41-49 grams Carbohydrate)**	2 slices Whole Wheat **Bread** 2 ounces Turkey Breast 1 Tbsp Low Fat Mayonnaise Lettuce and Tomato Slice 6 Baby Carrots 1 small **Apple**	1 cup Chicken Noodle **Soup** 6 Soda **Crackers** 1/2 cup Cottage Cheese Tossed Salad 2 Tbsp Low Fat Dressing 1/2 cup **Pears**
Snack: **0-1 Carbohydrate Group (0-19 grams Carbohydrate)**	1 cup *Lite* Raspberry **Yogurt**	8 **Animal Crackers**
Dinner: **3-4 Carbohydrate Choices (41-64 grams Carbohydrate)**	2/3 cup Brown **Rice** ½ Chicken Breast 1 cup Broccoli 1 cup **Melon**	Medium Baked **Potato** 2 tsp margarine Medium Pork Chop 1 cup Green Beans 1 cup skim, 1/2, or 1% **Milk** 1/2 cup Natural **Applesauce**
Snack: **1 Carbohydrate Group (8-19 grams Carbohydrate)**	6 Soda **Crackers** 1 ounce Low Fat cheese	3 cups (popped) low fat microwave **Popcorn**

Carbohydrate Choices are in bold print in the Sample Menus.

1600-1800 Calorie Carbohydrate Controlled Meal Plan

170-205 grams Carbohydrate 88-108 grams Protein Up to 60 grams Fat
(10-15 Carbohydrate Choices)
Include in Daily Intake: 5-8 servings Starch/Bread; 3 servings Fruit; 2-3 servings Milk; 3 or more servings Vegetables; 6-8 ounces Meat; and up to 5 servings Fat

Meal Plan	Sample Menu	Sample Menu
Breakfast: **3 Carbohydrate Choices (41-49 grams Carbohydrate)**	1 cup skim, 1/2, or 1% **Milk** 1 cup **Oatmeal**	1 slice Whole Wheat **Toast** 1 Tbsp Peanut Butter 1/2 **Banana** 1 cup skim, 1/2, or 1% **Milk**
Lunch: **3-4 Carbohydrate Choices (41-64 grams Carbohydrate)**	2 slices Whole Wheat **Bread** 2 ounces Turkey Breast 1 slice Low Fat Cheese 1 Tbsp Low Fat Mayonnaise Lettuce and Tomato Slice 6 Baby Carrots 1 small **Apple**	1 cup Chicken Noodle **Soup** 6 Soda **Crackers** 1/2 cup Cottage Cheese Tossed Salad 2 Tbsp Low Fat Dressing 1/2 cup **Pears**
Snack: **0-1 Carbohydrate Group (0-19 grams Carbohydrate)**	1 cup *Lite* Raspberry **Yogurt**	String Cheese 2 **Pretzel Rods**
Dinner: **4 Carbohydrate Choices (56-64 grams Carbohydrate)**	1 cup Brown **Rice** 1/2 Chicken Breast 1 cup Broccoli 1 cup **Melon**	Medium Baked **Potato** 2 tsp margarine Medium Pork Chop 1 cup Green Beans 1 cup skim, 1/2, or 1% **Milk** 1/2 cup Natural **Applesauce**
Snack: **1 Carbohydrate Group (8-19 grams Carbohydrate)**	3 cups (popped) low fat microwave **Popcorn**	15 Baked **Tortilla Chips** 1/4 cup Salsa

Carbohydrate Choices are in bold print in the Sample Menus.

1800-2000 Calorie Carbohydrate Controlled Meal Plan

190-225 grams Carbohydrate 100-120 grams Protein Up to 66 grams Fat
(12-15 Carbohydrate Choices)
Include in Daily Intake: 6-10 servings Starch/Bread; 3-4 servings Fruit; 2-3 servings Milk; 3 or more servings Vegetables; 6-8 ounces Meat; and up to 6 servings Fat

Meal Plan	Sample Menu	Sample Menu
Breakfast: **4 Carbohydrate Choices (56-64 grams Carbohydrate)**	1 cup skim, 1/2, or 1% **Milk** 1 1/2 cups **Cheerios** 1/2 **Banana**	1/2 Whole Grain **Bagel** 1 cup skim, 1/2, or 1% **Milk** 2 Tbsp Cream Cheese 1 1/4 cup **Strawberries**
Lunch: **4 Carbohydrate Choices (56-64 grams Carbohydrate)**	2 slices Whole Wheat **Bread** 2 ounces Turkey Breast 1 Tbsp Low Fat Mayonnaise Lettuce and Tomato Slice 12 Baked **Potato Chips** 6 Baby Carrots 1 small **Apple**	1 cup **Spaghetti** 1/2 cup **Spaghetti Sauce** 2 Tbsp Parmesan Cheese 2 ounces Ground Sirloin Tossed Salad 2 Tbsp Salad Dressing
Snack: **0-1 Carbohydrate Group (0-19 grams Carbohydrate)**	1 cup *Lite* Raspberry **Yogurt**	12 **Grapes** String Cheese
Dinner: **4 Carbohydrate Choices (56-64 grams Carbohydrate)**	1 cup Brown **Rice** 1/2 Chicken Breast 1 cup Broccoli 1 cup **Melon**	Medium Baked **Potato** 2 tsp margarine Medium Pork Chop 1 cup Green Beans 1 cup skim, 1/2, or 1% **Milk** 1/2 cup Natural **applesauce**
Snack: **0-2 Carbohydrate Group (0-34 grams Carbohydrate)**	6 cups (popped) low fat microwave **Popcorn**	1 slice Whole Wheat **Bread** 1 Tbsp Peanut Butter 1 cup skim, 1/2, or 1% **Milk**

Carbohydrate Choices are in bold print in the Sample Menus.

2000-2200 Calorie Carbohydrate Controlled Meal Plan

200-275 grams Carbohydrate 112-132 grams Protein Up to 73 grams Fat
(14-16 Carbohydrate Choices)
Include in Daily Intake: 8-12 servings Starch/Bread; 3-4 servings Fruit; 2-3 servings Milk; 3 or more servings Vegetables; 6-8 ounces Meat; and up to 7 servings Fat

Meal Plan	Sample Menu	Sample Menu
Breakfast: **4 Carbohydrate Choices (56-64 grams Carbohydrate)**	1 cup skim, 1/2, or 1% **Milk** 1 1/2 cups **Cheerios** 1/2 **Banana**	1/2 Whole Grain **Bagel** 1 cup skim, 1/2, or 1% **Milk** 2 Tbsp Cream Cheese 1 1/4 cup **Strawberries**
Snack: **0-1 Carbohydrate Group (0-19 grams Carbohydrate)**	1 cup *Lite* Raspberry **Yogurt**	
Lunch: **4 Carbohydrate Choices (56-64 grams Carbohydrate)**	2 slices Whole Wheat **Bread** 2 ounces Turkey Breast 1 slice Low Fat Cheese 1 Tbsp Mayonnaise Lettuce and Tomato Slice 12 Baked **Potato Chips** 6 Baby Carrots 1 small **Apple**	1 cup **Spaghetti** 1/2 cup **Spaghetti Sauce** 2 Tbsp Parmesan Cheese 2 ounces Ground Sirloin Tossed Salad 2 Tbsp Salad Dressing
Snack: **1 Carbohydrate Group (8-19 grams Carbohydrate)**	1/2 cup **Chex Mix**	12 **Grapes** String Cheese
Dinner: **4Carbohydrate Choices (56-64 grams Carbohydrate)**	1 cup Brown **Rice** 1/2 Chicken Breast 1 cup Broccoli Tossed Salad 2 Tbsp Salad Dressing 1 cup **Melon** 1 cup skim, ½, or 1% **Milk**	Medium Baked **Potato** 2 tsp margarine Medium Pork Chop 1 cup Green Beans 1 cup skim, 1/2, or 1% **Milk** 1/2 cup Natural **Applesauce**
Snack: **1-2 Carbohydrate Group (8-34 grams Carbohydrate)**	6 cups (popped) low fat microwave **Popcorn**	1 slice Whole Wheat **Bread** 1 Tbsp Peanut Butter 1 cup skim, 1/2, or 1% **Milk**

Carbohydrate Choices are in bold print in the Sample Menus.

2200-2400 Calorie Carbohydrate Controlled Meal Plan

230-270 grams Carbohydrate 124-150 grams Protein Up to 80 grams Fat
(14-20 Carbohydrate Choices)
Include in Daily Intake: 8-12 servings Starch/Bread; 3-4 servings Fruit; 2-4 servings Milk; 3 or more servings Vegetables; 9-12 ounces Meat; and up to 8 servings Fat

Meal Plan	Sample Menu	Sample Menu
Breakfast: **4 Carbohydrate Choices** **(56-64 grams Carbohydrate)**	1 cup skim, 1/2, or 1% **Milk** 3/4 cup **Cheerios** 1 slice Whole Wheat **Toast** 1 tsp margarine 1/2 **Banana**	1 Whole Grain **Bagel** 2 Tbsp Cream Cheese
Snack: **1 Carbohydrate Group** **(8-19 grams Carbohydrate)**	1 cup *Lite* Raspberry **Yogurt**	12 **Grapes** String Cheese
Lunch: **4Carbohydrate Choices** **(56-64 grams Carbohydrate)**	2 slices Whole Wheat **Bread** 3 ounces Turkey Breast 1 slice Low Fat Cheese 1 Tbsp Low Fat Mayonnaise Lettuce and Tomato Slice 12 Baked **Potato Chips** 6 Baby Carrots 1 small **Apple**	1 cup **Spaghetti** 1/2 cup **Spaghetti Sauce** 2 Tbsp Parmesan Cheese 3 ounces Ground Sirloin Tossed Salad 2 Tbsp Salad Dressing
Snack: **1-2 Carbohydrate Group** **(8-34 grams Carbohydrate)**	1 cup **Chex Mix**	1 1/4 cup **Strawberries**
Dinner: **4-5 Carbohydrate Choices** **(56-79 grams Carbohydrate)**	1 cup Brown **Rice** Chicken Breast & Leg 1 cup Broccoli Tossed Salad 2 Tbsp Salad Dressing 1 cup **Melon** 1 cup skim, 1/2, or 1% **Milk**	Medium Baked **Potato** 2 tsp margarine Large Pork Chop 1 cup Green Beans 1 cup skim, 1/2, or 1% **Milk** 1/2 cup Natural **Applesauce**
Snack: **1-2 Carbohydrate Group** **(8-34 grams Carbohydrate)**	6 cups (popped) low fat microwave **Popcorn**	1 slice Whole Wheat **Bread** 2 Tbsp Peanut Butter 1 cup skim, 1/2, or 1% **Milk**

Carbohydrate Choices are in bold print in the Sample Menus.

0 Carbohydrate Choice Snacks
(Snacks with less than 5 grams Carbohydrate)

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

1 Carbohydrate Choice Snacks
(15 grams Carbohydrate)

1/2 cup Trail Mix	3 cups popcorn
Tortilla Chips Cut a 6-inch tortilla into triangles and broil until crisp. Top with some grated Mozzarella cheese.	Orange Cow 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 Prepare 1 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. Eat Frozen or slightly thawed.	2 Peanut Butter Balls 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 use.
String cheese 1 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 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 1 cup Skim, 1/2% or 1% Milk
1 Whole Wheat English Muffin 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 Top with melted Low Fat Cheese, Salsa, Lettuce, Tomato, etc.
1 slice Pizza	1 cup Soup 24 Oyster Crackers
4 Chocolate Flavored Graham Crackers Spread 2 Tbsp Peanut Butter on 2 Graham Crackers. Place 2 Graham Crackers on top for Sandwiches 1 cup Skim, 1/2%, or 1% Milk	1/2 cup Sugar Free Pudding 5 Vanilla Wafers
1/2 cup Cheerios 1 cup skim, 1/2%, or 1% Milk	1 ounce Low Fat Cheese 6 Saltine Crackers 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 an item off, baked rather than fried potatoes, 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.
- **Don't Set Yourself Up to Overeat!**
  If you skip meals all day long to "save" calories for a restaurant dinner, chances are you will overeat. Plan ahead by eating smaller meals during the day and be a little full before ordering.
- **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 size in restaurants is 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!

Guidelines for Use of Alcoholic Drinks

Many social activities involve drinking beverages with alcohol. If you have diabetes you may ask, is it okay to have a drink? The answer is yes, in moderation and provided that you take proper safety measures. The American Diabetes Association states that alcohol can be included in the meal plan, provided that your blood sugar is well controlled and that it will not worsen other medical problems. Make sure you discuss the use of alcohol with your doctor.

When you plan on using alcohol, you need to take these safety measures:

- Use alcohol in moderation—This means no more than two drinks per day if you are a man and no more than one drink per day if you are a woman. One drink is defined as a 12 ounce beer, a 4 ounce glass of wine, or 1.5 ounces of distilled spirits (whiskey, rum, vodka, or gin).
- Alcohol has calories—If you are overweight and trying to lose, you may want to avoid alcohol. Alcoholic drinks give you calories without any nutritional value. It usually counts as fat servings.
- Never drink on an empty stomach—Alcoholic drinks can make your blood sugar drop, especially if you take medicine for your diabetes. Plan on having your drink at mealtime or with a snack.
- Avoid drinks with large amounts of sugar—Avoid sweet wine, liqueurs, and sweetened mixed drinks. Use sugar-free mixers such as water, club soda, seltzer, or diet soft drinks.
- Drink with someone who recognizes and knows how to treat a low blood sugar reaction. Carry identification—Signs and symptoms of low blood sugar and having too much to drink are similar making it hard to recognize. Treatment is with a snack high in carbohydrates or glucose tablets. Glucagon will not help treat alcohol related low blood sugar. Always wear identification.
- Some medicines may not mix with alcohol—Discuss this with your doctor.
- Don't exercise before drinking—Exercise lowers the blood sugar, and drinking will lower it even further. Dancing counts as exercise.

Alcoholic Drinks

BEVERAGE	AMOUNT	CALORIES	CARBOHYDRATES	EQUALS
Beer:				
Regular	12 oz.	150	13 gms	1 carbohydrate and 1-1/2 fats
Light	12 oz.	100	5 gms	2 fats
Non-alcoholic	12 oz.	60	12 gms	1 carbohydrate
Distilled Spirits (80 proofs):				
Gin, Rum, Scotch, Vodka, Whiskey, Bourbon	1 1/2 oz.	100	Trace	2 fats
Wines:				
Dry	4 oz.	80	Trace	2 fats
Sweet	2 oz.	90	6 1/2 gms	1/2 carbohydrate and 1-1/2 fats
Coolers	12 oz.	190	30+ gms	2 carbohydrate and 1-1/2 fats
Sherry	2 oz.	75	Trace	1-1/2 fats
Sherry/Port	2 oz.	95	7 gms	1/2 carbohydate and 1-1/2 fats

Oral Diabetes Medications

Diabetes Education SERVICES — 15 years

Class/Main Action	Name(s)	Daily Dose Range	Considerations
Biguanides *Decrease hepatic glucose output.* *American Diabetes Association recommends start at diagnosis of type 2.*	metformin (Glucophage)	500–2500 mg *(usually BID w/meal)*	Take caution if creat>1.4 women, >1.5 men, CHF on meds, >80 yrs, binge drinker, liver disease, during IV dye study, illness. Eliminated via kidney. Side effects include nausea, B12 deficiency, bloating, diarrhea. Take w/ meals. Lowers A1c 1.0% – 2.0%.
	Extended Release-XR (Glucophage XR) (Glumetza) (Fortamet)	*(1x daily w/dinner)* 500–2000 mg 500–2000 mg 500–2500 mg	
Sulfonylureas *Stimulates sustained insulin release.*	glyburide: (Micronase, Diabeta) (Glynase)	1.25–20 mg 0.75–12 mg	Can take once or twice daily. Side effects include hypoglycemia and weight gain. Eliminated via kidney. *Take Glucotrol on an empty stomach. Take Glucotrol XL with first meal. Lowers A1c 1.0%–2.0%.
	glipizide: (Glucotrol*) (Glucotrol XL)	2.5–40 mg 2.5–20 mg	
	glimepiride (Amaryl)	1.0–8 mg	
DPP – 4 Inhibitors *"Incretin Enhancers" Prolongs action of gut hormones = increased insulin secretion, delayed gastric emptying.*	sitagliptin (Januvia)	100 mg daily *(eliminated via kidney*)*	*If creatinine elevated, see pkg insert for dosing info. No wt gain or hypoglycemia. Side effects include nasopharyngitis, headache and upper-respiratory tract infection. Report signs of pancreatitis (abdominal pain, nausea, vomiting). Lowers A1c 0.6%–0.8%.
	saxagliptin (Onglyza)	Up to 5 mg daily *(eliminated via kidney*, feces)*	
	linagliptin (Tradjenta)	5 mg daily *(eliminated via feces)*	
	alogliptin (Nesina)	25 mg once daily *(eliminated via kidney)*	

More medications on back. *Note: These meds are for people with Type 2 diabetes and should not be used during pregnancy. Content is for educational purposes only: please consult prescribing information for details.*

Class/Main Action	Name(s)	Daily Dose Range	Considerations
SGLT2 Inhibitors *Decrease glucose reabsorption in kidneys "glucoretic."*	Canagliflozin (Invokana) Dapagliflozin (Farxiga)	100–300 mg once daily before first meal 5-10mg once daily	For both, monitor B/P, K^+ and renal function. If GFR<60, stop Farxiga. If GFR<45, stop Invokana. Side effects: hypotension, UTIs, increased urination, genital infections. Avoid Farxiga in pts w/bladder cancer. Lowers A1c 0.7%–1.5%, lowers wt 1-3 lbs.
Thiazolidinediones "TZDs" *Increase insulin sensitivity.*	pioglitazone (Actos) rosiglitazone (Avandia)	15–45 mg daily 4–8 mg daily	**Black Box Warning:** TZDs may cause or worsen CHF. Monitor for edema and weight gain. Increased peripheral fracture risk. **Actos may increase risk of bladder cancer.** Lowers A1c 0.5%–1.0%.
Dopamine Receptor Agonists *Resets circadian rhythm.*	bromocriptine mesylate—Quick Release "QR" (Cycloset)	1.6 to 4.8 mg a day (each tab 0.8 mg)	Take within 2 hrs of waking. Start at one tab daily, increase 0.8 mg each wk as tolerated. Side effects: nausea, headache, fatigue, hypotension, syncope, somnolence. Lowers A1c 0.6%–0.9%.
Glucosidase Inhibitors *Delay carb absorption.*	acarbose (Precose) miglitol (Glyset)	25–100 mg w/meals; 300 mg max daily dose	Start with low dose, increase at 4-8 wk intervals to decrease GI effects. Caution with liver or kidney problems. Lowers A1c 0.5%–1.0%.
Meglitinides *Stimulates rapid insulin "burst."*	repaglinide (Prandin)	0.5–4 mg w/meals (metabolized in liver)	Take before meals. Side effects may include hypoglycemia and weight gain. Lowers A1c 1.0%–2.0%.
	nateglinide (Starlix)	60–120 mg w/meals (eliminated via kidney)	

Insulin PocketCard™

Diabetes Education SERVICES

15 years

Action		Insulin Name	Onset	Peak	Effective Duration	Considerations
Bolus	Rapid Acting Analogs	Aspart (Novolog)	5 - 15 min	30 - 90 min	< 5 hrs	**Bolus** insulin lowers after-meal glucose. Efficacy reflected in post-meal BG. **Basal** insulin controls BG between meals and HS. Efficacy reflected in fasting BG. **Side effects**: hypoglycemia, weight gain. **Typical dosing** range: 0.5–1.0 units/kg body wt/day. Discard opened insulin vials after 28 days.
		Lispro (Humalog)				
		Glulisine (Apidra)				
	Short Acting	Regular	30 - 60 min	2 - 3 hrs	5 - 8 hrs	
Basal	Intermediate	NPH	2 - 4 hrs	4 - 10 hrs	10 - 16 hrs	
	Long Acting	Detemir (Levemir)	3 - 8 hrs	No peak	6 - 24 hrs	
		Glargine (Lantus)	2 - 4 hrs	No peak	20 - 24 hrs	
Bolus + Basal	Intermediate + rapid	Novolog® Mix 70/30 70/30 = 70% NPA + 30% aspart	5 - 15 min	Dual peaks	10 - 16 hrs	
		Humalog® Mix 75/25 = 75% NPL + 25% lispro 50/50 = 50% NPL + 50% lispro				
	Intermediate + short	Combo of NPH + Reg 70/30 = 70% NPH + 30% Reg 50/50 = 50% NPH + 50% Reg	30 - 60 min	Dual peaks	10 - 16 hrs	

Adapted from American Association of Clinical Endocrinologists Guidelines 2007. Because insulin action times can vary with each injection, time periods listed here are general guidelines only; please consult prescribing information for details.

Injectables That Lower Glucose

A Diabetes PocketCard™
from Diabetes Education Services

Class/Main Action	Name	Dose Range	Considerations
GLP-1 Agonist "Incretin Mimetic" • Increases insulin release with food • Slows gastric emptying • Promotes satiety • Suppresses glucagon Lowers A1c 0.5 – 1.6%. Wt loss of ~ 3lbs	exenatide (Byetta)	5 - 10 mcg BID (renally excreted)	**Side effects for all:** Nausea, vomiting, weight loss, injection site reaction. Report signs of acute pancreatitis (severe abdominal pain, vomiting), stop med. **Black box:** liraglutide,exenatide XR, and albiglutide: Thyroid C-cell tumor warning (avoid if family history of medullary thyroid cancer, notify MD of hoarseness, throat lump).
	exenatide (XR) extended release (Bydureon)	2mg 1x a week (renally excreted)	
	liraglutide (Victoza)	0.6 mg daily for 1 wk 1.2 mg daily for 1 wk then 1.8 mg daily (max dose)	
	albiglutide (Tanzeum)	30 - 50 mg 1x a week pen injector	
Amylin Mimetic • Slows gastric emptying • Supresses glucagon • Promotes satiety • Lowers A1c 0.5 – 1%.	pramlintide (Symlin)	Type 1: 15 - 60 mcg; Type 2: 60 - 120 mcg immediately before major meals	For Type 1 or 2 on insulin. Prevent hypoglycemia, decrease insulin dose when starting pramlintide. **Black box** warning: severe hypoglycemic risk 3 hrs post injection. Side effects: nausea, wt loss.

The information listed here are general guidelines only; please consult prescribing information for details.

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. This is known as a basal dose of insulin. This helps to keep your blood sugar within range between meals and during the 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 issue (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

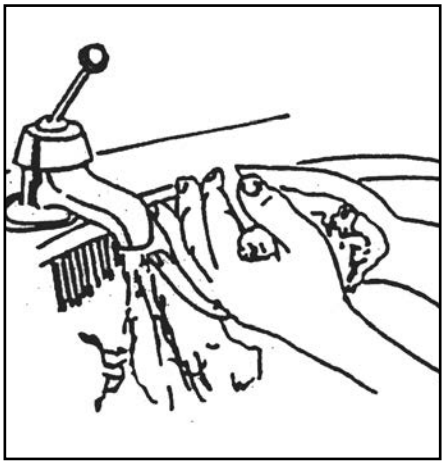
- Eliminates need for individual insulin injections.
- More accurate than insulin injections.
- Usually improves the A1c.
- Allows you to be flexible about when and what you eat.
- Improves quality of life.
- Reduces severe low blood sugar reactions.

Disadvantages

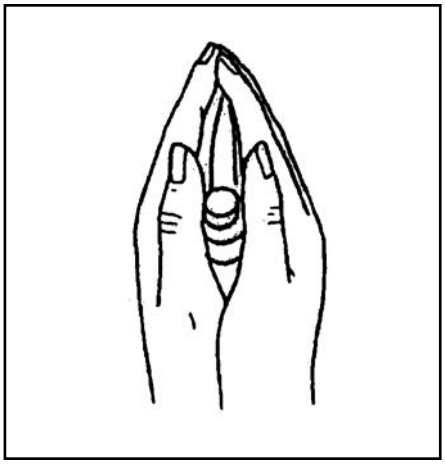
- Can cause weight gain.
- Can cause diabetic ketoacidosis (DKA) if the needle comes out or becomes plugged for hours.
- Can be bothersome because you are attached to the pump most of the time.

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.

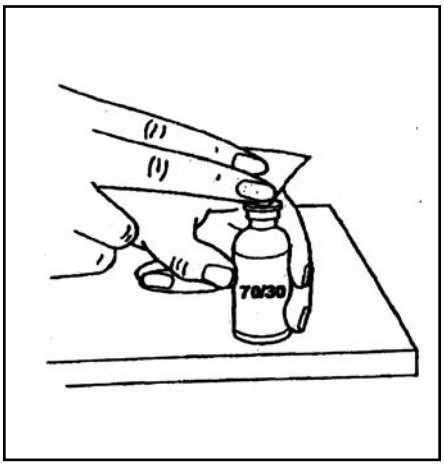
To Draw Up Insulin



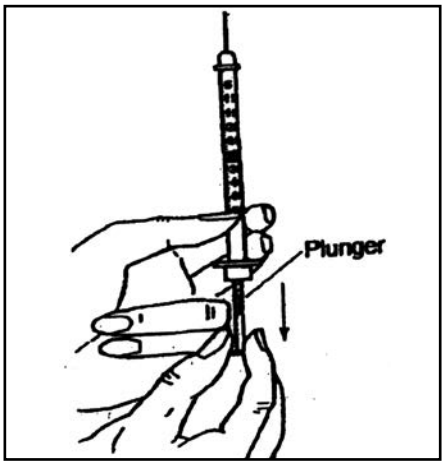
1. Wash hands



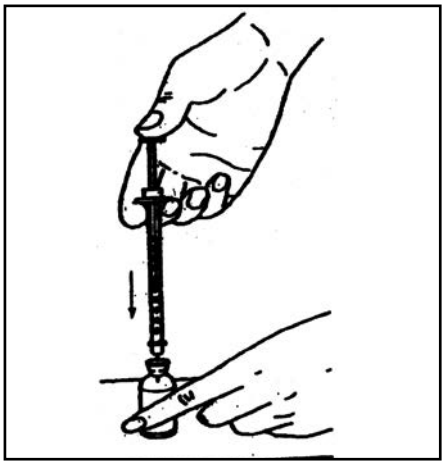
2. Cloudy solutions only - roll insulin bottle to mix



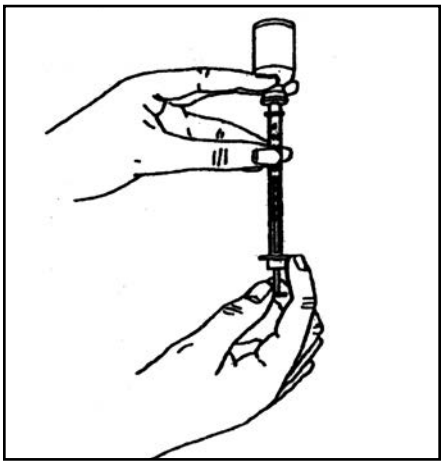
3. After plastic cap is removed from new insulin bottle, wipe off top with alcohol swab.



4. Draw plunger to _____ units.



5. Put needle through rubber top of bottle and push air into bottle.



6. Leave needle in bottle. Turn upside down. Make sure the tip of the needle is covered with insulin.

7. Pull some insulin into syringe. Push it back into bottle to remove bubbles.

8. Pull plunger down to exactly _____ units.

If no bubbles present, pull needle out of bottle.

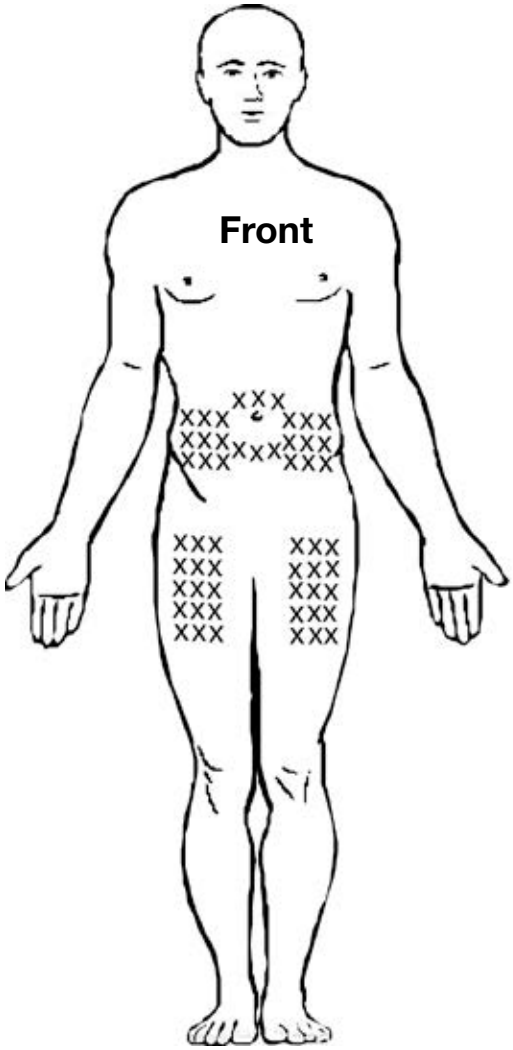
To Give Insulin

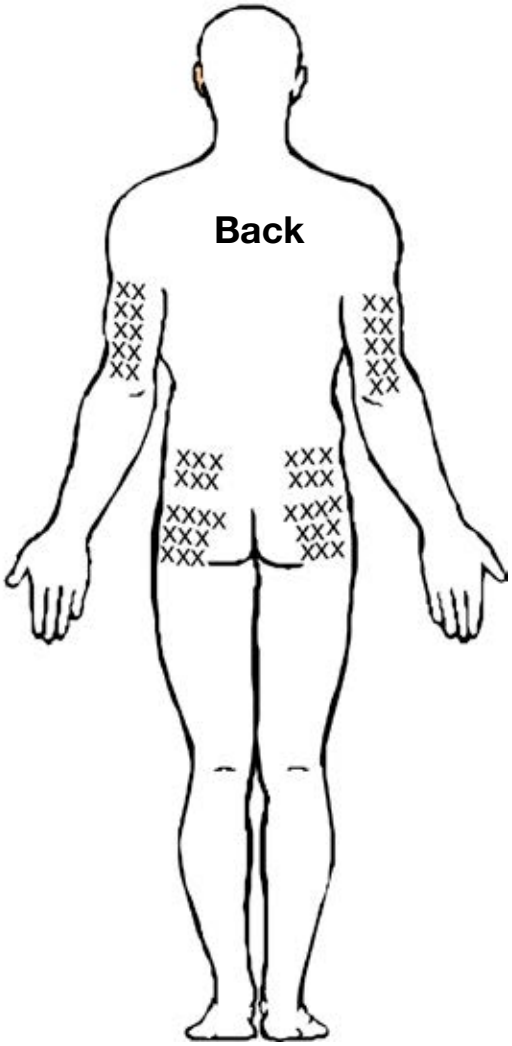
1. Wipe skin with alcohol swab where insulin is to be given.
2. Pinch up a large area of skin.
3. Holding the syringe in the other hand, push the needle straight into the skin.
4. Push the plunger all the way down.
5. Release pinch.
6. Do not rub.
7. Dispose of single use syringe in safe manner. Place your needles, syringes, lancets and other sharp objects in puncture-proof, hard plastic containers you can't see through. Or use metal containers with lids reinforced with tape. Lids that screw on tightly are best. Then place the sealed container with your trash – ***never in a recycling bin.***

Note: You will be taking _____ insulin. The amount of insulin given may be changed by your doctor. Be sure you know the correct amount to be given.

Rotating Injection Sites

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





Safe Sharps Disposal

It is thought that eight to nine million people use syringes at home, causing two to three billion used syringes each year. All needle tips, syringes, and lancets are considered disposable sharps. As a rule they are used once and then thrown away in the household trash. This is cause for a major public health concern.

Household waste is regulated at the state or city level. Many states have not put the new guidelines into practice. Therefore needles are still thrown into the household trash. It is important that you call your local solid waste department or public health department for the correct disposal in your area.

If your area does not use the new guidelines, then you need to dispose of your needles, syringes and lancets in a safe manner. Place the sharps object in puncture-proof, hard plastic containers you can't see through. Or use metal containers with lids sealed with tape. Lids that screw on tightly are best. Place the sealed container in your trash—**NEVER put in a recycling-bin.**

New Guidelines Recommend that you Choose One of the Following Options:

- A community program such as a community drop-off center, household hazardous waste facility, residential "special waste" pick-up service or a Syringe Exchange Program (contact the North American Syringe Exchange program Network at **253-272-4857** or online at www.nasen.org.) Contact your local oublic health department.
- At home needle destruction devices. A few manufacturers offer products that allow you to destroy used needles at home. These devices sever, burn, or melt the needle, making is safe for disposal. Check with your pharmacist. These devices will vary in price.

For More Information:

- Ask your health care provider or local pharmacist if they offer a disposal program, of if they know of one in the area.
- Contact the Coalition for Safe Community Needle Disposal at 1-800-643-1643 or visit the web site www.safeneedledisposal.org to find out about the availability of disposal programs in your area.

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:

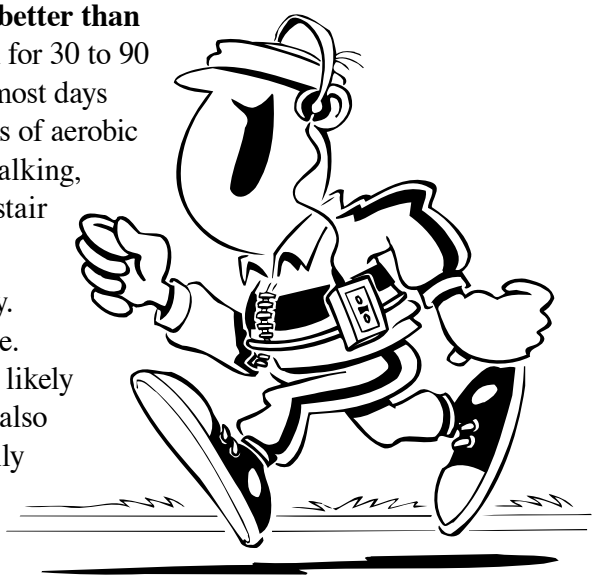
- **Control your blood sugar.** Regular activity helps your insulin work better by allowing more sugar to enter your body cells for energy.
- **Manage your weight and reduce insulin resistance.** Exercise burns extra calories and increases the rate at which your body burns calories (metabolism). As you 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 a while, 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.

Exercising 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 have 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 1 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.

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.**

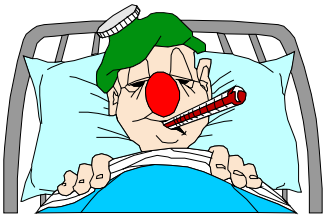
  You will need to check your blood sugar every 2 to 4 hours until you feel better and your blood sugar returns to normal.

- **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.

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 to 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 Guideline

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 a mild soap. Don't use hot water or soak your feet. After washing your feet, dry them thoroughly, especially between the toes. You can use a 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.

Foot Care for People with Diabetes

People with diabetes have to take special care of their feet.

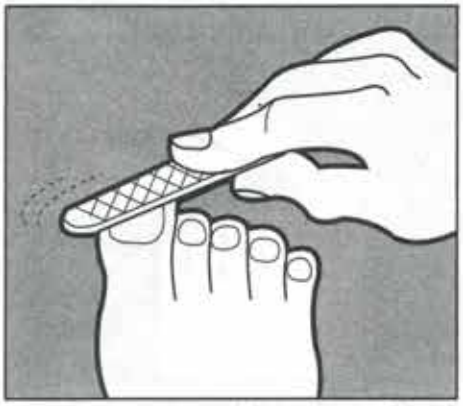
Novo Nordisk DIABETES Care

1 **Wash your feet daily** with lukewarm water and soap.

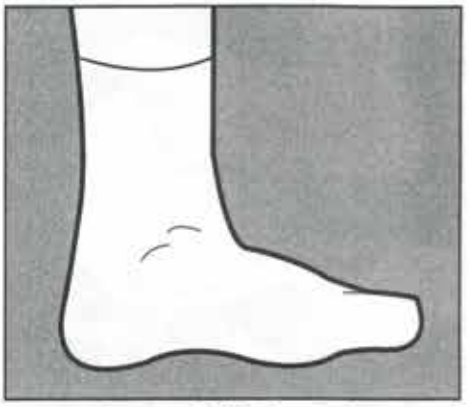
2 **Dry your feet well,** especially between the toes.

3 **Keep the skin supple** with a moisturizing lotion, but do not apply it between the toes.

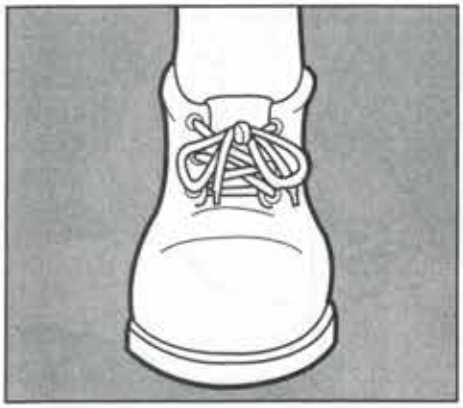
4 **Check your feet** for blisters, cuts or sores, redness or swelling. Tell your doctor right away if you find something wrong.



5 **Use emery board gently** to shape toenails even with ends of your toes. Do not use a pocketknife or razor blades.

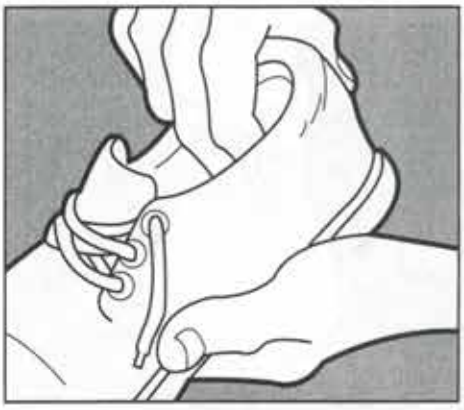


6 **Change daily into clean, soft socks or stockings,** not too big or too small.



7 **Keep your feet warm and dry.** Preferably wear special padded socks and always wear shoes that fit well.

8 **Never walk barefoot** indoors or outdoors.

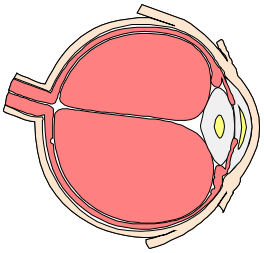


9 **Examine your shoes every day** for cracks, pebbles, nails or anything that could hurt your feet.

Take good care of your feet - and use them.
A brisk walk every day stimulates the circulation.

Taking Care of Yourself

Eye Care

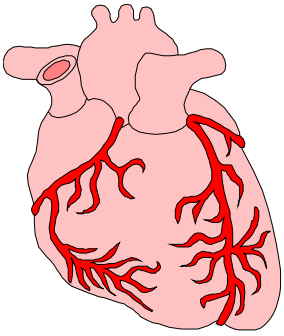


Diabetic eye disease (also called retinopathy) is a serious problem that can lead to loss of sight. Diabetic eye disease may develop even when your sight is good. Over time diabetes can cause damage to the tiny blood vessels that supply blood to the retina (the light-sensing part of the inner eye).

You can reduce your risk of serious eye problems by:

- 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 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 200mg/dL
LDL (“bad”) Cholesterol .....Less than 100mg/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 150mg/dL

Maintain a healthy weight.
If 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 140/90. 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.

Taking Care of Yourself

Get regular exercise.

Avoid tobacco or quit smoking. (Please refer to page 52-53 for more information)
Use of tobacco narrows the blood vessels and increases your risk of heart disease.

Call your doctor or go to an 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 heart, stroke, or blood vessel disease.

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. Use 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:

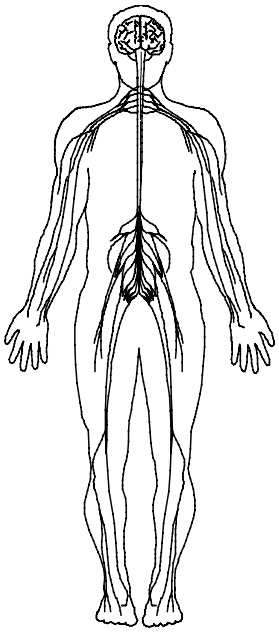
- Bleeding gums when you brush or eat.
- Red, swollen or tender gums.
- Pus between your teeth and gums.
- Constant bad breath or bad taste in your mouth.

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 out harmful wastes. These wastes, called urea, then pass from the body in the urine. Diabetes can cause kidney disease by damaging the parts of the kidneys that filter out 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.

Taking Care of Yourself



You can help protect your kidneys by:

- Keep your blood sugar under control.
- Keep your blood pressure under control (target range 140/90).
- 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 light-headed 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 by the following:

- Control your blood sugar level.
- Your doctor should 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.

Regular Medical Care

In preventing serious medical problems it is important that you have regular medical care to make sure your self-management plan is working well. Regular medical care monitors and manages factors that put your health at risk, and to check for and treat any long-term problems. It is up to you to get the medical tests, checkups, and immunizations you need when you need them.

The following is a schedule for medical tests, checkups, and immunizations recommended by the Centers for Disease Control:

What to check for (Tests and Goals)	How often?
HbA1c Goal is less than 7%, or _____	2-4 times per year
Blood Pressure Goal is lower than 140/90, or _____	At least 2 times per year
Cholesterol Total cholesterol is 200mg/dL or less, or _____ LDL goal is 100mg/dL or less, or _____ HDL goal is above 40mg/dL for men, or _____ Above 50mg/dL for women, or _____ Triglyceride goal is less than 150 mg/dL, or _____	At least yearly
Dilated Eye Exam Helps prevent and detect eye problems	Yearly
Foot Exam Don't forget your own daily foot inspections Check at each visit. Once per year it should include check of circulation and nerves.	Doctor to check at each visit; once per year should include check of circulation and nerves.
Dental Exam Regular cleaning and checkups help prevent and detect tooth and gum disease	2 times per year
Urine Microalbumin/Creatinine Ratio Kidney function test. Goal is less than 30mg/g of creatine, or _____	Yearly
Flu shot	Yearly (usually October to mid-November)
Pneumococcal shot	Once (repeat at age 65)

Flu and 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).
- Get a pneumonia shot once in a lifetime.* (The pneumonia shot also protects you against other diseases caused by the same bacteria).
- 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.

* Under certain conditions you may be required to get a second 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 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 in one or more of your senses 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, or 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 every day 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. Sometimes if you are stressed, you may forget to test or not have enough time to test your blood sugar, exercise, or eat 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 are some healthy responses to stress.

Stop and breathe.
At the first signs of stress, just stop what you are doing or thinking, and take 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 5 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 you won't be able to cope and fear the complications of diabetes. 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.

Dealing with Stress, Emotions and Depression Continued...

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 2 weeks) feelings are not.

Common symptom of depression include:

- Loss of pleasure. A lack of interest in things you used to enjoy.
- Feeling sad or empty.
- Change in sleep patterns. Sleep too much, too little, or poorly.
- Change in appetite. Significant weight gain or weight loss.
- Trouble concentrating.
- Loss of energy. You feel tired all the time.
- Nervousness or anxious. Have difficulty sitting still.
- Guilt. You feel you never do anything right. You feel worthless.
- Thoughts of death or suicide. You feel you want to die or are thinking about ways to hurt yourself.

Let your health care team know how you feel. Point out problems that you have with your diabetes care plan. A diabetes educator or other health care 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 your 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 think about 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 health care provider to help you find a counselor.

Diabetes, Smoking and Your Health

According to the 2014 Surgeon General's 50th anniversary report, SMOKING CAN CAUSE DIABETES.

Smoking is even more deadly and disabling for people with diabetes. Here's how:

Nerves

Smoking raises your risk of nerve damage. This can cause numbness, pain, and problems with digestion.

Feet & Legs

Poorer circulation in people with diabetes leads to increased amputations. Smoking increases this risk.

Kidneys

Kidney disease is prevalent in people who have diabetes. Smoking increases the risk. Drugs that help prevent kidney failure don't work as well for smokers.

Sexual Health

Damage from smoking to blood vessels can cause problems with sexual function, such as erectile dysfunction.

Spit Tobacco & E-cigarettes

Using spit tobacco (chew or snuff) or e-cigarettes is *not* a safe alternative to smoking.

Eyes

Smoking can make vision problems worse, which can lead to blindness.

Teeth

Smoking raises your risk of getting gum disease and losing your teeth.

Heart

Smokers with diabetes are more likely to have a heart attack or stroke than people who don't have diabetes or smoke.

Blood Sugar

Smoking raises your blood glucose (sugar) and reduces your body's ability to use insulin, making it harder to control your diabetes. Even one cigarette is harmful, cutting your body's ability to use insulin.

Secondhand Smoke

Breathing secondhand smoke is linked to causing diabetes and an increase in heart attacks and strokes.

QUIT TODAY: Call the Michigan Tobacco Quitline 1-800-QUIT-NOW (784-8669)

A nicotine replacement product or other medications can help you stop smoking.

Adapted with permission from the California Diabetes Program.
Available for download at www.michigan.gov/tobacco. (Updated 8.21.14)

There are many health benefits to quitting, and they begin just 20 minutes after stopping the use of tobacco.

In 20 minutes	• Heart rate and blood pressure drops
In 12 hours	• Carbon monoxide level in the blood drops to normal
In 24 hours	• The chance of heart attack drops
In 2 days	• Smell and taste improves
In 2 to 3 weeks	• Circulation gets better • Walking is done more easily • Lung function improves by up to 30%
In 1 month	• Cough, sinus congestion, fatigue, and shortness of breath decrease • Lungs start to repair themselves, reducing the chance of infection
In 1 year	• The risk of heart disease is cut in half of that of a smoker.
In 5-15 years	• The risk of stroke is reduced to that of a non-smoker.
In 10 years	•The risk of lung cancer or bladder cancer is about half that of continuing smokers.
In 15 years	• The risk of heart disease returns to the level of people who have never smoked

Tobacco Control: Reversal of Risk After Quitting Smoking. IARC Handbooks of Cancer Prevention, Vol. 11. 2007. p 11). Last revision 2/6/2014.

Diabetes

Self-Management Classes

Group classes will cover five vital aspects of diabetes self-management including: Meal Planning, Blood Glucose Monitoring, Medications, Self-Care and Exercise/Activity.

For more information, contact:

- McLaren Oakland - 248.338.5389
- McLaren Greater Lansing - 517.975.2270
- McLaren Macomb - 586.493.8500
- McLaren Northern Michigan - 231.487.3200
- McLaren Bay Region - 989.894.9528
- McLaren Port Huron - 810.989.3362

* Physician prescription required.
* Physician individual assessment required.
* Some insurance companies may cover class costs.

(Covered by most insurances)

McLaren
HEALTH CARE
www.mclaren.org

Diabetes

Support Groups

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- McLaren Bay Region - 989.894.9528
- McLaren Port Huron - 810.989.3362
- McLaren Flint - 810.342.5506

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www.mclaren.org

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 60603-1901
800-832-6874
800-338-3633 (for names of diabetes educators)
http://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
http://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)
http://www.eatright.org

American Heart Association National Center
7272 Greenville Avenue
Dallas, Texas 75231
800-AHA-USA1 (242-8721)
http://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)
E-mail: Diabetes @cdc.gov
http://www.cdc.gov/diabetes

Department of Veterans Affairs Diabetes Program
http://www.va.gov/diabetes

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

The Foundation of the American Academy of Ophthalmology Diabetes Project
P.O. Box 429098
San Francisco, California 94142-9098
800-222-EYES (3937)
http://www.aao.org/aaoweb1/foundation/301.cfm

Indian Health Service Diabetes Program
5300 Homestead Road, N.E.
Albuquerque, New Mexico 87110
505-248-4182
http://www.ihs.gov/medicalprograms/diabetes

Juvenile Diabetes Research Foundation International
120 Wall Street, 19th Floor
New York, New York 10005-4001
800-JDF-CURE (533-2873)
E-mail: info@jdrf.org
http://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, Maryland 20910
  http://www.cdc.gov/diabetes
  E-mail diabetes@cdc.gov
- Campaign materials and publications:
  1-800-438-5383;
  Mail requests to NDEP,
  National Diabetes Education Clearinghouse
  1 Information Way
  Bethesda, Maryland 20892-3560
  E-mail berryt@extra.niddk.nih.gov
  http://www.ndep.nih.gov
- National Diabetes Information Clearinghouse
  1 Information Way
  Bethesda, Maryland 20892-3560
  800-860-8747
  301-654-3327
  E-mail: ndic@info.niddk.nih.gov
  http://www.niddk.nih.gov

National Eye Institute National Eye Health Education Program
Diabetic Eye Disease Public Education Program
2020 Vision Place
Bethesda, Maryland 20892-3655
800-869-2020 (to order materials)
http://www.nei.nih.gov/nehep/ded.htm

Great Websites for People with Diabetes

1. www.diabetes.org
2. www.diabetesselfmanagement.com
3. www.diabetes.com
4. www.dlife.com
5. www.diabetesmonitor.com
6. www.childrenwithdiabetes.com
7. www.joslin.org
8. www.healthsuccess.com
9. www.mendosa.com
10. www.eatright.org
11. www.mayohealth.org
12. www.niddk.nih.gov
13. www.cspinet.org
14. www.mealsforyou.com
15. www.amhrt.org
16. www.shapeup.org
17. www.aadenet.org
18. www.diabeticcooking.com
19. www.diabetesincontrol com
20. www.health.gov
21. www.calorieking.com
22. www.equal.com
23. www.splenda.com
24. www.glycemicindex.com
25. www.diet.com
26. www.mypyramid.gov
27. www.fitday.com
28. www.trackyourdiet.com
29. www.thedailyplate.com
30. www.sparkpeople.com
31. strivingforward.com

Diabetes Software Apps

By Tracey Neithercott

Nowadays, diabetes management is mobile. And for many people, that means that logging blood glucose levels, carbohydrate grams consumed, and exercise performed no longer requires pen and paper. Instead, plenty of phone and tablet applications make it easy to carry and record information wherever you are. You can find hundreds of apps in iTunes' App Store, in the App Store on your iPhone, or in the Android Market on your Android phone. For starters, here are five free apps to check out.

dLife
The diabetes website dLife makes a diabetes application that you can use to log glucose levels, find recipes and nutrition information, watch dLife videos, and connect with the dLife community and experts to get answers to your diabetes-related questions. Aside from logging your glucose, you can graph daily, weekly, or monthly levels and track trends—all of which you can e-mail to yourself or your health care provider.
Devices: *iPhone, iPod Touch, iPad*

Glucose Buddy
It's easy to record blood glucose levels, insulin injections, food eaten, and exercise completed with Glucose Buddy. The diabetes app for the iPhone comes with push notifications to remind you to check your blood glucose. The app connects users to Glucose Buddy forums and allows for syncing of the phone to an online account on the Glucose Buddy website, where you can manage your blood glucose data and review trends.
Devices: *iPhone, iPod Touch, iPad*

Fooducate
This app could be your shopping companion on the next trip to the grocery store. You can scan barcodes, search for products, and browse categories to find foods you're shopping for. By selecting a food, you'll get a list of health pros (100 percent whole grain!) and cons (loaded with high-fructose corn syrup!) and can compare it to similar products. Keep track of products you eat regularly by "liking" a food. Then, next time you hit the store, you can pull up a "my likes" list of foods you might want to buy again.
Devices: *iPhone, iPod Touch, iPad*

Calorie Counter by MyNetDiary
You can record meals, water intake, exercise, and weight loss with this comprehensive app, which works with **MyNetDiary online**. It includes a library of more than 400,000 foods (including restaurant picks) and a bar code scanner for easy identification and logging of packaged foods. Searches with Calorie Counter are fast, thanks to the app's ability to search as you type.
Devices: *iPhone, iPod Touch, BlackBerry; available on the iPad and Android phones for a fee*

Workout Trainer
This free app features workouts led by personal trainers. The exercises, which don't require you to use any equipment, include step-by-step photos, videos, and audio. If you don't need audio instructions, you can play your own music while you exercise. You can track your progress on your phone or online.
Devices: *iPhone, iPod Touch, iPad, Android*

My Fitness Pal myfitnesspal.com
This is a popular free website and mobile app for tracking food and physical activity. Your profile remembers what you have entered in the past, so the more you enter, the easier it gets. There is a large searchable database for foods, and you can also enter your own recipes. Devices: iPhone, Android

Go Meals gomeals.com
Go Meals is a free website and mobile app designed for diabetes management. In addition to tracking food intake and activity, blood sugars can be recorded. The food database is powered by Calorie King and includes restaurant items. Devices: iPhone, iPad, Android

This app is a tool to help you set, track and achieve your diabetes goals while learning more about managing your diabetes. This app incorporates the AADE7 self-care behaviors and lets you share your progress with others. Devices: iPhone and Android

The easy-to-use NuVal Nutritional Scoring System is now available for smartphones as an app exclusively for people with access to our personalized health website, MyActiveHealthSM. Now you can take your smartphone to the grocery store and scan the barcodes of your favorite foods to help fill your shopping cart with the best, healthiest choices. And because we've integrated the app with MyActiveHealth, all the information you store with the app is also available to access and track in the website. Devices: iphone

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