



Your Journey to Diabetes Wellness

A Diabetes Education Manual

TriHealth.com/diabetes





Dear Patient,

Thank you for choosing TriHealth for your diabetes care. We strive to provide excellence in prevention, identification and management of diabetes across the TriHealth system.

Our team works together to ensure that every patient with diabetes is provided state-of-the-art care every time. Everyone – from our doctors and nurses to our testing centers and doctor offices – works hard to do everything we can to help you return to and maintain good health.

This book is a tool packed with information you need to help manage your diabetes. Your nurses and diabetes educators will work with you to get the most out of this book, and then we encourage you to use it at home as an ongoing reference.

We wish you the best in your journey as we work together to help you live a healthier life.

Sincerely,

The doctors and staff of the TriHealth Diabetes Team

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What is prediabetes?

Prediabetes is a serious health problem that increases the risk of having type 2 diabetes, heart problems and stroke. Prediabetes means that your blood sugar is high but not so high that it is considered to be diabetes. A blood sugar checked first thing in the morning before you have eaten is called a fasting blood sugar. A normal fasting blood sugar is less than 100.

A fasting blood sugar between 100 and 125 is considered prediabetic, or the doctor may say you have impaired fasting glucose.

A lab value called a hemoglobin A1C is considered normal if it is less than 5.7%. An A1C between 5.7% and 6.4% is considered prediabetic. An A1C of 6.5% or higher is considered to be diabetic.

The Centers for Disease Control and Prevention (CDC) estimates that one in every three adults has prediabetes. That is 88 million people!

Most people living with prediabetes do not know they have it.

Without lifestyle changes to improve health, 15% to 30% of people with prediabetes will end up with type 2 diabetes within five years.

Losing 5% to 7% (10 to 20 pounds) of body weight and regular exercise can help prevent or delay type 2 diabetes by up to 58% in people with prediabetes. Getting at least 30 minutes of exercise, such as brisk walking, five days a week is important for overall health.



Risk factors for prediabetes and type 2 diabetes:

- Over 45 years of age
- Overweight
- Have a parent or sibling with diabetes
- Race: African-American, Hispanic/Latino, Indian-American, Asian-American or Pacific Islander
- Polycystic ovary disease, gestational diabetes or gave birth to a baby weighing nine pounds or more
- Physically active fewer than three times a week

It is important to screen early for prediabetes and type 2 diabetes because early treatment can prevent serious problems that diabetes can cause, such as blindness, nerve damage or kidney damage. Talk to your doctor about testing.

What is diabetes?

Diabetes is a disease in which you have too much sugar in your blood (hyperglycemia). It is a lifelong disease that can lead to serious health problems. With proper care of your disease, you can greatly reduce the risk of these health problems, which include damage to your heart, blood vessels, kidneys, nerves and eyes.

Normally, insulin moves sugars from food into the cells, which the cells use for energy. The lack of insulin or the lack of normal response to insulin causes excess sugars to build up in the blood. The cells are unable to use the sugar for energy. You may be able to control your blood sugar with diet and exercise. As diabetes progresses, some people may need to add pills to control their sugar and some people may need to use insulin shots.

Type 1 diabetes is usually diagnosed in kids and young adults and used to be called juvenile diabetes. Only 5% of people with diabetes have this form of the disease. In type 1 diabetes, the body does not produce insulin. The body breaks down the sugars and starches you eat into a simple sugar called glucose, which it uses for energy. Insulin is a hormone produced in the pancreas that the body needs to move glucose from the blood into the cells of the body. With the help of insulin shots and other treatments, even young children can learn to manage their condition and live long, healthy lives.

Type 2 diabetes is often linked to being overweight and inactive. The amount of insulin produced by your pancreas has already decreased by 80% at the time you are diagnosed. Your body still makes some insulin, but your cells have become resistance to insulin (insulin resistance).



What is gestational diabetes?

Pregnant women who did not have diabetes before they became pregnant, but who have high blood sugars during pregnancy, have gestational diabetes. Gestational diabetes is like type 2 diabetes- the pancreas does not make enough insulin and/or the cells are less responsive to the insulin that is made (insulin resistance). As a result, high blood sugar develops. High sugar levels can cause problems for the unborn baby. About 2% to 5% of pregnant women develop gestational diabetes. Testing for gestational diabetes is done between the 24th and 28th weeks of pregnancy. Women with gestational diabetes have a three to seven times higher risk of getting type 2 diabetes within five to 10 years. Your baby also has a greater risk of getting type 2 diabetes.

Risk factors

You have a higher risk of gestational diabetes if you have a family history of diabetes and/or one or more of the following risk factors:

- You are obese (body mass index (BMI) greater than 30)
- You had a prior pregnancy with gestational diabetes
- You are pregnant at an older age
- Previous baby weighed more than 9 lbs.
- History of polycystic ovary syndrome (PCOS)

Current guidelines from the American Diabetes Association recommend that women with gestational diabetes have blood sugar testing done 4 to 12 weeks after the baby is born and every one to three years thereafter depending on risk factors.

All women with a history of gestational diabetes should exercise, eat healthy and work toward a normal body weight to prevent type 2 diabetes.

Go to www.trihealth.com\diabetes for more information on gestational diabetes

Symptoms of high blood sugar (hyperglycemia)

- Increased thirst
- Increased urination
- Increased urination during the night
- Weight loss (may be rapid)
- Frequent infections
- Tiredness
- Weakness
- Vision changes, such as blurred vision
- Fruity smell to your breath
- Stomach pain



Diagnosis

Diabetes is diagnosed when blood sugar levels are too high. Your blood sugar level may be checked by one or more of the following blood tests:

- A fasting blood glucose test: You will not be allowed to eat for at least eight hours before a blood sample is taken.
- A random blood glucose test: Your blood glucose is checked at any time of the day, no matter when you last ate.
- A hemoglobin A1C blood glucose test: Provides information about blood glucose control over the previous three months.
- An oral glucose tolerance test (OGTT): A test commonly used during pregnancy. Your blood glucose is measured at least one to three hours after you have last eaten and then after you drink a glucose containing beverage. Because the hormones that cause insulin resistance are highest at about 24 to 28 weeks of a pregnancy, an OGTT is usually done during that time. If you are at risk for gestational diabetes, your doctor may test you for gestational diabetes earlier than 24 weeks of pregnancy.

Hemoglobin A1C	6	7	8	9	10	11	12	13	14	15
Average Blood Sugar	126	154	183	212	240	269	298	326	355	384

5.7%–6.4% = Prediabetes, Greater than 6.5% = Diabetes

The American Diabetes Association recommends an A1C of less than 7% for most people.

Checking blood sugar

Checking your blood sugar (blood glucose) is important. Changes in blood sugar are common and can vary greatly throughout the day depending on your diet, activity and medications.

- Write your blood sugar results in your diary every day.
- Take the diary with you to your regular doctor's appointments.
- Your care team will review and discuss your results with you.
- Your doctor may adjust your medicine if your blood sugar is too high.
- The diary will also help you see how your meals, activity and medications work together to control your blood sugar.
- Controlling your blood sugar can delay or prevent diabetes complications, such as heart attack, stroke or blindness.

How do I check my blood sugar?

You will use a blood glucose meter to check your blood sugar several times a day. A meter is a small device that tests a tiny drop of blood and then displays your blood sugar level at that moment. A lancet is a device used to prick the skin to get the drop of blood. The results are used to make decisions about food, physical activity and medications.

Experts recommend using the side of the fingertip to get the most accurate result. There are times that other sites should not be used because the result may be less accurate. These times include:

- If your blood sugar is likely to be low
- If you have trouble knowing your blood sugar is low (hypoglycemia unawareness)
- If it's fewer than two hours after starting a meal or if you have been physically active

Some meters may allow alternate site testing - areas other than the finger - such as the fleshy part of the hand, the forearm, the outer thigh, the calf or the stomach. Talk with your doctor or pharmacist to see what meters and supplies are covered by your insurance. If you do not have insurance, storebrand meters and supplies are usually less costly.

What are the blood sugar targets for people with diabetes?

The targets recommended by the American Diabetes Association are listed below.

- When I wake up and before meals: 80 to 130 mg/dl
- Two hours after starting a meal: less than 180 mg/dl

Check with your doctor and your health care team to make sure these goals are correct for you.

When is the best time to check blood sugar and how often?

Most people check after fasting (first thing in the morning before they eat) and before other meals. Your doctor may ask you to test your blood sugar after a meal (postprandial) when your blood sugar may be higher. Usually a postprandial blood sugar is checked two hours after eating.

Other times you may want to test are:

- When you have symptoms of high or low blood sugar
- When you are ill, especially if you are throwing up or dehydrated
- Before, during and after exercise
- Before you go to sleep

Your health care team can help you decide how often you should test.

How do I know if my results are accurate?

- Follow your meter's instructions when doing your check.
- Keep your meter clean.
- Check test strips to make sure they are not past their expiration date.
- Do not leave testing supplies in a hot car or direct sunlight or in the freezer.
- Make sure skin is clean and dry before testing.
- Make sure your blood sample is big enough.
- Check your meter with control solution as recommended by the manufacturer.

All meters have a 1-800 phone number on the back in case you have questions about your meter. Your doctor will write prescriptions for your glucose meter and supplies. Insurance pays part of the cost of meters and supplies. Store brand meters and supplies may be less expensive if you do not have insurance.



Make exercise a permanent part of your life

Exercise helps you lose weight and/or stay at a healthy weight as well as improve your blood sugar. It also helps your heart stay healthy. For the person with diabetes, exercise is as important as diet and medication. You should get at least 30 minutes of physical activity that increases your heart rate five days a week.

It is important to design a lifelong home exercise routine. Walking is one of the easiest and most convenient options, but there may be others you enjoy.

Exercise should be continuous and rhythmical. It should be done at a comfortable pace. "No pain, no gain" does not apply. If you stick with a regular, consistent program, you can expect these rewards:

- Increased insulin sensitivity
- Lower blood sugar levels
- More energy and endurance (stamina) throughout the day
- Improved appearance
 - A slimmer, trimmer body
 - Better posture
- Weight loss (5-7% weight loss is recommended for most people needing to lose weight)
 - Less body fat
 - Increased muscle tone



Healthy diet and exercise are likely as strong as any medication I will ever prescribe for your diabetes and should be continued forever.

Dr. Heile,
Diabetologist

- Decreased appetite following exercise
- Lower heart rate and blood pressure
- A stronger heart muscle and better blood flow: the more you use your heart muscle, the stronger it becomes
- Better sleep at night
- Stronger bones and a lower risk of osteoporosis
- Better resistance to illness
- Improved cholesterol levels
- Lower stress, anxiety, boredom, frustration and depression

[The American Diabetes Association recommends different types of exercise for managing diabetes.](#)

Aerobic

This exercise is done by using your arms and/or legs in a continuous, rhythmic movement in order to increase your heart rate (pulse).

Aerobic activities include:

- Aerobics
- Running
- Dancing
- Skating (ice or roller)
- Biking/stationary biking
- Hiking
- Swimming
- Jogging/walking
- Rowing

Moderate intensity means that you are working hard enough that you can talk, but not sing, during the activity.

Vigorous intensity means you cannot say more than a few words without pausing for a breath during the activity.

These types of exercise can make all the muscles in your body stronger. Pick an aerobic exercise that you enjoy and set realistic goals.

This way, you will be more likely to keep doing it on a regular basis.

Strength training

Strength training (also called resistance training) makes your body more sensitive to insulin and can lower blood sugar. The American Diabetes Association recommends doing strength-training exercises at least two to three times per week in addition to aerobic activity. Some people have higher blood sugars after doing strength training. It is a good idea to check your blood sugar before and after these exercises.

Below are examples of strength-training activities:

- Using weight machines or lifting free weights at the gym
- Using resistance bands
- Lifting light weights or objects, such as canned goods or water bottles, at home
- Exercises that use your own body weight to work your muscles, such as pushups, sit ups, squats, lunges, wall-sits and planks
- Strength-training classes
- Other activities, such as heavy gardening, that build and keep muscle

Flexibility and Balance Training

Flexibility and balance training is recommended 2-3 times per week in older adults. This includes activities like yoga and tai chi to increase flexibility, muscular strength and balance.

Be aware that exercise can lower blood sugar quickly. Blood sugar should be monitored before and after all exercise routines.

Exercise in the presence of uncontrolled blood sugars

High blood sugar

For people with type 1 diabetes who have ketones in the urine and/or blood, exercise can cause blood sugar and ketones to go up further. Ketones are made when body fat is broken down for energy because glucose is not getting into the cells. Vigorous activity should be avoided when your blood sugar is high and there are ketones in your urine. Ketones are checked by dipping a strip in your urine. You can exercise when your blood sugar is high as long as there are no ketones in your urine. (See section on sick-day plans.)



Low blood sugar

For people taking insulin and/or medications such as glipizide or glyburide (insulin secretagogues), exercise can cause low blood sugar if the medication dose or carbohydrate intake is not changed.

For people on these medicines, extra carbohydrates should be eaten if pre-exercise sugar levels are 100 mg/dl or less.

Low blood sugar is less common in diabetic patients who are not treated with insulin or insulin secretagogues, and no preventive measures for low blood sugar is usually needed in these cases.

Hints for a successful exercise program

- You should avoid prolonged sitting- get up and move every 30 minutes.
- Talk with your doctor before starting any exercise program.
- Set short and long term goals for yourself. Reward yourself when you meet them.
- Exercise with music or in front of the television.
- Wait one hour after eating before exercising.
- Pick an exercise you like that fits into your lifestyle.
- Exercise with a friend for both safety and motivation.
- Stop exercising and call 911 immediately if you have any of these symptoms during, or even several hours after, exercise:
 - Lightheadedness or dizziness
 - Rapid heart beat
 - Chest discomfort
 - Jaw, arm or upper back discomfort
 - Nausea
 - Unusual shortness of breath
 - Sudden weakness
 - Severe or unusual fatigue or sleepiness
 - Severe discomfort of any kind



Nutrition and diabetes guidelines

Healthy eating is the first step in taking care of your diabetes. You do not need special foods or diet foods. Food that is good for you is also good for the whole family. The type of food and the amount of food you eat every day will make a big difference in your blood sugar levels.

- Eat three meals each day. At each meal, add high fiber foods such as fruit, vegetables, whole grains and beans. At each meal, also have protein such as chicken, lean beef or pork, cheese, fish, eggs, nuts, peanut butter or soy products.
- Eat about the same amount of food at each meal and at the same time each day. Cut back on your portion sizes and try to resist second helpings.
- Each meal should be eaten four or five hours apart. Do not skip meals. If you have to go more than five hours between meals, eat a small snack.
- Be careful of how much carbohydrate you eat at one time. Carbohydrates include starchy foods (breads, pasta, rice, beans, peas, corn and potatoes), all fruits and juices, milk, snack foods and sweets. Many of these are good foods—**don't stop eating them! Just watch** how much you eat of them at one time.
- Beverages can make a big difference in your blood sugars. Limit fruit juice and regular soda. Drink water, diet beverages or other low sugar drinks instead.
- Sweets and desserts can be worked into your diabetes meal plan. For an individual meal plan, see a registered dietitian.
- Only drink alcohol (beer, wine and liquor) in moderation- one drink or less per day for women and two or less per day for men. A standard alcoholic drink is 12 ounces of beer, 5 ounces of wine or 1.5 ounces of liquor. Drinking alcohol without food may cause hypoglycemia.



- Use low-fat cooking methods such as baking, roasting, broiling, grilling, poaching or lightly stir-frying instead of deep-frying.
- When dining out, choose grilled or baked food. For example, order a baked potato instead of French fries. Take half of your meal home from restaurants to help cut back on portion sizes.

Carbohydrates

When you have diabetes, you must limit the amount of carbohydrates you eat because this is the part of your meal that affects your blood sugar. A serving of carbohydrates is 15 grams.

How much carbohydrates?

Finding the right amount of carbohydrates depends on many things, including how active you are and what, if any, medicines you take. Some people are active and can eat more carbohydrates. Others may need to have less carbohydrates to keep their blood sugar in control. Finding your balance is important so you can feel your best, do the things you enjoy and lower your risk of diabetes complications.

Most meals should contain 45 to 60 grams of carbohydrates. You may need more or less carbohydrates at meals depending on how you manage your diabetes.

You and your health care team can figure out the right amount for you. Once you know how many carbohydrates to eat at a meal, choose your food and the portion size to match.

Types of carbohydrates

Starch

Foods high in starch include:

- Green peas, corn, lima beans and potatoes
- Dried beans, lentils, pinto beans, kidney beans, blackeyed peas and split peas
- Grains such as oats, barley and rice. Grain products such as pasta, bread and crackers.

The grain group can be broken down even further into whole grains or refined grains. Whole grains contain the entire grain and are more nutritious than refined grains.

Sugar

Sugar is another type of carbohydrates. Sugar is sometimes called a simple carbohydrate. There are two main types of sugar:

- Naturally occurring sugars such as those in milk or fruit
- Added sugars such as those added during processing such as fruit canned in heavy syrup or sugar added to make a cake

On the nutrition facts label, the number of sugar grams includes both added and natural sugars. Added sugar adds no nutritional value.

Fiber

Fiber comes from plants. There is no fiber in animal products such as milk, eggs, meat, poultry and fish. Fiber is the indigestible part of plant foods. Most dietary fiber passes through the intestines undigested.

Adults should eat 25 to 30 grams of fiber each day. Fiber contributes to digestive health, helps keep your bowels regular and helps make you feel full after eating.

Good sources of fiber include:

- Beans and legumes: black beans, kidney beans, pintos, chickpeas (garbanzos), white beans and lentils
- Fruits and vegetables, especially those with edible skin such as apples and those with edible seeds such as berries
- Whole grains: whole-wheat pasta, whole-grain cereal with three grams of fiber or more per serving and whole-grain breads
- Nuts: peanuts, walnuts and almonds are all good sources of fiber and healthy fat (watch portion sizes because they are also high in calorie)

Excellent source of fiber = 5 grams or more per serving



Carb Counting

Reading food labels is a great way to know how many carbohydrates are in a food. For foods that do not have a label, you have to estimate how many carbohydrates are in it. Keeping general serving sizes in mind will help you estimate how many carbohydrates you are eating.

One Carbohydrate Choice or Serving

(15 grams of carbohydrates)

1 slice of high fiber bread (whole wheat)
 1 small fresh fruit (size of a tennis ball)
 ½ small whole wheat bagel
 ½ cup cooked unsweetened oatmeal
 ½ cup potatoes or 1/3 cup of pasta
 ½ whole wheat English muffin
 ½ hamburger or hot dog bun
 ¾ cup unsweetened dry high fiber cereal
 1 cup milk or 6 oz. of Lite yogurt

Three (4-inch) graham cracker squares
 ½ cup corn, peas, lima beans
 ½ cup sweet or mashed potatoes or yams
 ½ cup dried beans(cooked)
 ½ cup regular/no added sugar ice-cream
 4-6 whole wheat crackers
 1/3 cup of rice
 15 medium grapes
 3 cups of low fat popcorn

Two Carbohydrate Choices or Servings

(30 grams of carbohydrates)

2 slices of whole wheat bread
 8-12 whole wheat crackers
 2/3 cup of whole wheat pasta
 6 cups of low fat popcorn
 4 inch baked or sweet potato
 1 whole wheat English muffin

1 hamburger or hot dog bun
 Six (4") graham cracker squares
 1 cup corn or peas
 One cup sweet potatoes or yams
 1 cup cooked beans

Three Carbohydrate Choices or Servings

(45 grams of carbohydrates)

1 cup milk, ¾ cup unsweetened dry cereal and 1 small banana
 2/3 cup whole wheat pasta and ½ cup of spaghetti sauce
 2 slices whole wheat bread and 1 cup of vegetable soup

2 slices of whole wheat bread and 1 small fresh fruit
 ½ cup potatoes, ½ cup corn and 1 slice of whole wheat bread
 ½ cup cooked beans, 1/3 cup rice and 1 small corn muffin

Read the nutrition facts label

The nutrition facts label is the best tool for shopping smart to manage your diabetes. Be aware of serving sizes as well as total carbohydrate grams. This information will aid in carbohydrate counting and keeping blood sugars on target. Choose foods with lower amounts of saturated fat, trans fat, cholesterol and sodium to make your diet healthier, lower your cholesterol level and help reduce your risk of heart disease.

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%
* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	

Serving size

Portion of food that gives the amount of carbohydrates, fat and other nutrients listed on the label.

Servings per container

The number of servings in that package of food.

Calories

The amount of energy you get from one serving of that food. If you are trying to lose weight, look for foods with less calories per serving.

Calories from fat

The amount of calories that come from fat in one serving of that food.

Total fat

Total amount of fat grams in the serving size that is listed on the label. This total includes saturated, unsaturated and trans fats.

Saturated fat and trans fat

These are known as "bad" fats because they tend to increase the chance of heart disease. Strive for the least amount of saturated and trans fats you can get from the foods you eat. A healthy starting goal for most people is less than 20 grams of saturated fat per day and less than 2 grams of trans fat per day. Your doctor may give you a more specific goal.

Unsaturated fat

These are known as "good" fats because they tend to be more heart-healthy. These include polyunsaturated and monounsaturated fats.

Cholesterol

Limit the amount of cholesterol in your food to 200 mg per day.

Sodium

Limit the amount of sodium in your food to 2,300 mg or less per day unless your doctor gives you other instructions.

Total carbohydrate

Total amount of carbohydrate grams in the serving size that is listed on the label. This total includes dietary fiber, sugars and other carbohydrates. Focus on total carbohydrate, not on sugars.

Dietary fiber

Look for foods with at least 3 grams of fiber per serving. High-fiber, less-processed foods are better for you and can even help you reach your blood sugar and healthy weight goals.

Sugars

This includes both natural sugars (as in fruits) and added sugars (as in table sugar).

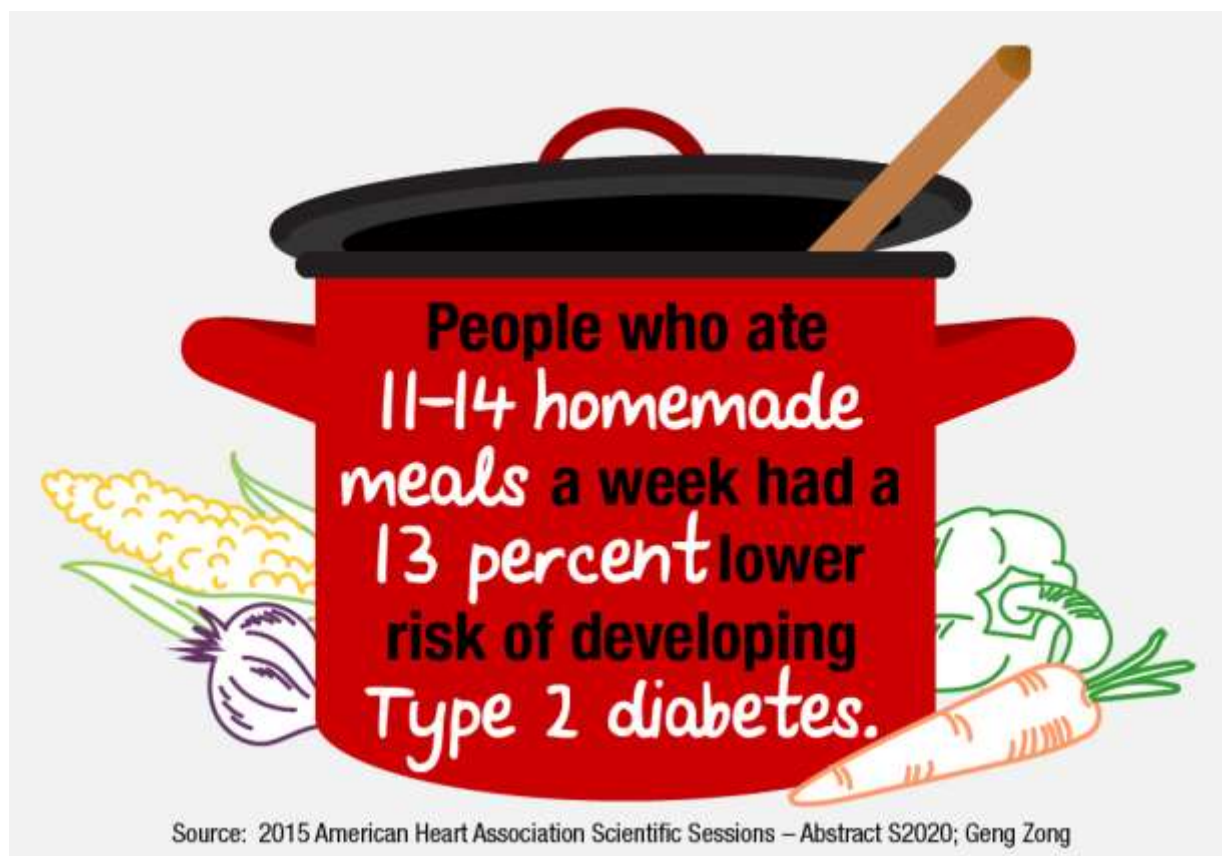
This is only a part of the total carbohydrate; it is more important to focus on total carbohydrate than on sugars.

Protein

Be sure to eat the amount of protein your doctor recommends. Use lean protein sources, such as skinless poultry, fish, low-fat dairy products and beans.

References

1. US Food and Drug Administration. Letter regarding sugar-free claim. <http://www.cfsan.fda.gov/~dms/lclmguid.html>.
2. American Heart Association. Choose Whole Grain, High Fiber Foods. <http://americanheart.org/presenter.jhtml?identifier=3040347>.



Low-calorie sweeteners

When you have diabetes, including sweets in your diet requires careful planning. However, it can be hard to save sweets for special occasions. Foods and drinks that use artificial sweeteners are another option that may help curb your cravings for something sweet. However, they should be used in moderation only*.

Sometimes low-calorie sweeteners are also called artificial sweeteners, sugar substitutes or non-nutritive sweeteners. They can be used to sweeten food and drinks for fewer calories and carbohydrates when they replace sugar.

The sweetening power of most low-calorie sweeteners is at least 100 times more intense than regular sugar, so only a small amount is needed when you use these sugar substitutes.

Also, with the exception of aspartame, all of the sweeteners listed cannot be broken down by the body. They pass through our systems without being digested so they provide no extra calories.

Understanding “sugar-free”

Still, many foods containing low-calorie sweeteners will provide some calories and carbohydrates from other ingredients. That means foods that carry claims such as “sugar-free,” “reduced sugar” or “no sugar added” are not necessarily carbohydrate-free or lower

in carbohydrates than the original version of the food. A food that contains no more than 0.5 grams of sugar per serving may be labeled as “sugar-free.”

Always check the nutrition facts label for total grams of carbohydrates per serving. Sugar-free products may also have sugar alcohols in them, which are used in place of sugar to sweeten foods. Sugar alcohols are carbohydrates, but they are digested more gradually than regular sugar. Foods containing sugar alcohols may cause diarrhea or stomach cramps, especially if eaten in large portions.

The chart below lists the brand names seen in stores for low-calorie sweeteners:

For more information, visit the Food and Drug Administration website at fda.gov.

Sweetener Name	Brand Names Found in Stores
Acesulfame potassium	Sunett Sweet One
Aspartame	Nutrasweet Equal
Neotame	N/A
Saccharin	Sweet’N Low Sweet Twin Sugar Twin
Sucralose	Splenda
Stevia/ rebaudioside	Sweet Leaf Sun Crystals Steviva Truvia PureVia

* Overall, people are encouraged to replace sugar sweetened and artificial beverages with water.

Seven ways to size up your servings

Measure food portions so you know exactly how much food you are eating. When a food scale or measuring cups are not handy, you can still estimate your portion.

①

3 ounces of meat is about the size and thickness of playing cards or an audiotape cassette.



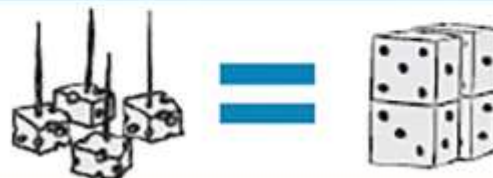
②

A medium apple or peach is about the size of a tennis ball.



③

1 ounce of cheese is about the size of 4 stacked dice.



④

1/2 cup of ice cream is about the size of a racquetball or tennis ball.



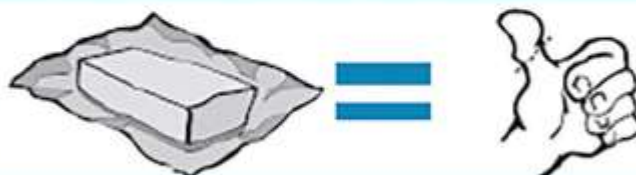
⑤

1 cup of mashed potatoes or broccoli is about the size of your fist.



⑥

1 teaspoon of butter or peanut butter is about the size of the tip of your thumb.



⑦

1 ounce of nuts or small candies equals one handful.





United States Department of Agriculture

**10
tips**
Nutrition
Education Series



**MyPlate
MyWins**

Based on the
Dietary
Guidelines
for Americans

Choose MyPlate

Use MyPlate to build your healthy eating style and maintain it for a lifetime. Choose foods and beverages from each MyPlate food group. Make sure your choices are limited in sodium, saturated fat, and added sugars. Start with small changes to make healthier choices you can enjoy.

1 Find your healthy eating style

Creating a healthy style means regularly eating a variety of foods to get the nutrients and calories you need. MyPlate's tips help you create your own healthy eating solutions—"MyWins."

2 Make half your plate fruits and vegetables

Eating colorful fruits and vegetables is important because they provide vitamins and minerals and most are low in calories.

3 Focus on whole fruits

Choose whole fruits—fresh, frozen, dried, or canned in 100% juice. Enjoy fruit with meals, as snacks, or as a dessert.



4 Vary your veggies

Try adding fresh, frozen, or canned vegetables to salads, sides, and main dishes. Choose a variety of colorful vegetables prepared in healthful ways: steamed, sautéed, roasted, or raw.



5 Make half your grains whole grains

Look for whole grains listed first or second on the ingredients list—try oatmeal, popcorn, whole-grain bread, and brown rice. Limit grain-based desserts and snacks, such as cakes, cookies, and pastries.



6 Move to low-fat or fat-free milk or yogurt

Choose low-fat or fat-free milk, yogurt, and soy beverages (soymilk) to cut back on saturated fat. Replace sour cream, cream, and regular cheese with low-fat yogurt, milk, and cheese.



7 Vary your protein routine

Mix up your protein foods to include seafood, beans and peas, unsalted nuts and seeds, soy products, eggs, and lean meats and poultry. Try main dishes made with beans or seafood like tuna salad or bean chili.



8 Drink and eat beverages and food with less sodium, saturated fat, and added sugars

Use the Nutrition Facts label and ingredients list to limit items high in sodium, saturated fat, and added sugars. Choose vegetable oils instead of butter, and oil-based sauces and dips instead of ones with butter, cream, or cheese.



9 Drink water instead of sugary drinks

Water is calorie-free. Non-diet soda, energy or sports drinks, and other sugar-sweetened drinks contain a lot of calories from added sugars and have few nutrients.

10 Everything you eat and drink matters

The right mix of foods can help you be healthier now and into the future. Turn small changes into your "MyPlate, MyWins."

Center for Nutrition Policy and Promotion
USDA is an equal opportunity provider, employer, and lender.

Go to ChooseMyPlate.gov
for more information.

DG TipSheet No. 1
June 2011
Revised October 2016

Family-friendly recipes to get you started

Breakfast recipes

(less than 35 grams of carbohydrates per serving)

Bran Flake Muffins

Makes 10 servings

Ingredients

Nonstick cooking spray
1 cup bran flakes cereal
3/4 cup 1% milk
1 egg
1/4 cup margarine, melted
1 cup flour
2 1/2 tsp. baking powder
1/2 tsp. salt
1/4 cup sugar

Directions

1. Preheat oven to 400 degrees F. Coat 10 muffin cups with nonstick cooking spray.
2. Combine bran flakes and milk: let sit for 5 minutes until cereal is soft.
3. Stir in egg and margarine. Mix in flour, baking powder, salt and sugar, stirring until combined.
4. Fill 10 muffin cups.
5. Bake for 30 minutes, until toothpick or knife inserted into center of muffin comes out clean.

Nutrition information per serving:

130 calories, 3 g protein, 19 g carbohydrate, 5 g fat, 1 g dietary fiber, 280 mg sodium

Apple-Cherry Cinnamon Oatmeal

Makes 2 servings

Ingredients

1 cup water
1/4 cup apple-cherry juice
2/3 cup old-fashioned oats
1 tsp. ground cinnamon
1 cup 1% low-fat milk

Directions

1. Combine water and apple-cherry juice in a small saucepan.
2. Bring to a boil over high heat; stir in oats and cinnamon.
3. Return to a boil, then reduce heat to low and cook until thick, about 2 minutes.
4. Spoon oatmeal into two bowls. Pour 1/2 cup milk over each serving.

Nutrition information per serving:

190 calories, 9 g protein, 35 g carbohydrate, 3 g fat, 4 g dietary fiber, 60 mg sodium



A diabetic diet is a healthy diet that anyone can benefit from.

—Lindsey Neese and Elissa Pleshinger,
Diabetes Advisory Team

Cinnamon Oatmeal Pancakes

Makes about 10 servings

Ingredients

1 1/4 cups flour
1 tsp. baking powder 1/2
tsp. salt
1 tbsp. cinnamon
1 egg
1 1/2 cups cooked oats 1/2
cup evaporated milk 1/4 cup
water
Nonstick cooking spray

Directions

1. Mix flour, baking powder, salt and cinnamon in a large bowl.
2. In a separate bowl, combine egg, oats, milk and water, and stir well.
3. Stir the oatmeal mixture into the flour mixture, and stir until combined.
4. Heat a large skillet coated with nonstick cooking spray over medium heat.
5. Pour large spoonfuls of batter into the skillet. Cook until bubbles appear on the tops of the pancakes, about 2 to 3 minutes. Flip over and cook an additional 2 minutes, or until golden brown and cooked through.
6. Serve warm by themselves or top with canned or fresh fruit.

Nutrition information per serving:

120 calories, 4 g protein, 20 g carbohydrate, 2 g fat, 1 g dietary fiber, 190 mg sodium

From diabetes.org

Lunch and dinner recipes

(less than 40 grams of carbohydrates per serving)

Chicken and Vegetable Quesadillas

Makes 4 servings

Ingredients

1/4 cup nonfat sour cream
1/4 tsp. chili powder
4 medium whole-wheat tortillas
1/2 cup cooked chicken, cut in small pieces
1/2 cup chopped tomatoes
1/2 cup pinto beans, drained and rinsed
1/2 cup frozen or canned corn
1/2 cup reduced-fat cheddar cheese, shredded
1/4 cup sliced black olives
Salsa, chopped lettuce and extra sour cream (optional)

Directions

1. In a small bowl, combine sour cream and chili powder; set aside.
2. Spread about 1 tablespoon seasoned sour cream on each tortilla. Place desired filling ingredients on half of each tortilla. Top with about 2 tablespoons of cheese.
3. Fold tortilla in half; place in a hot nonstick skillet.
4. Cook until tortilla starts to turn golden brown. Using spatula, carefully flip tortilla; cook until the other side is golden brown and cheese is melted. Return to plate and cut in half to serve.
5. Serve immediately with salsa, chopped lettuce and extra sour cream, if desired.

Nutrition information per serving:

239 calories, 22 g protein, 33 g carbohydrate, 4 g fat, 4 g dietary fiber, 425 mg sodium

Lentil Chili, Cincinnati-Style

Makes 6 servings (1 cup per serving)

Ingredients

1 tbsp. olive oil
 1 1/2 cups chopped onion, fresh or frozen 2 stalks celery, chopped
 1 clove garlic, minced 1/4 tsp. cinnamon
 1/4 tsp. ground cloves 1 tsp. ground cumin
 4 cups reduced sodium vegetable broth 1 cup lentils, washed
 1 cup carrots, chopped
 1/4 tsp. ground black pepper
 1 can (14.5 ounce) diced tomatoes

Directions

1. In a large saucepan, heat oil for 1 to 2 minutes. Add onions and celery; sauté until onions are tender, about 5 minutes.
2. Reduce heat; add garlic, cinnamon, cloves and cumin. Cook for 1 minute.
3. Add broth, lentils, carrots and black pepper; bring to a boil. Reduce heat, cover and simmer for 40 to 50 minutes or until lentils and carrots are soft.
4. Add tomatoes with juice; cook another 10 minutes until soup is hot throughout.
5. Adjust seasonings to taste.

Nutrition information per serving:

204 calories, 12 g protein, 35 g carbohydrate, 3 g fat, 8 g dietary fiber, 0 mg cholesterol, 427 mg sodium

From Nutrition Council

Rainbow Veggie Salad

Makes about 10 servings

Ingredients

1 can (15 ounce) low sodium black beans, drained and rinsed
 1 can (15 ounce) low sodium red kidney beans, drained and rinsed
 3 carrots, scrubbed and sliced
 1 small yellow squash, washed and sliced
 1 small green squash (zucchini), washed and sliced
 1/2 cup light Italian dressing
 1/2 teaspoon black pepper

Directions

1. Mix all the beans and vegetables in a large bowl.
2. Pour dressing over the vegetables.
3. Sprinkle with pepper.
4. Stir gently, coating ingredients.
5. Cover and refrigerate at least 8 hours.

Nutrition information per serving:

100 calories, 7 g protein, 6 g carbohydrate, 5 g fat, 6 g dietary fiber, 190 mg sodium

From diabetes.org



Taking diabetes medications

Medications may be needed to help you reach your blood sugar goals. You and your doctor should discuss your blood sugar goals based on your overall health, lifestyle and personal wishes. All medications should be taken as ordered by the doctor. Call your doctor if you think your diabetes medicine is not working right or if it is having adverse effects.

You must test your blood sugar regularly. Your doctor or diabetes educator will help you decide how often to test your blood sugar. Your doctor will adjust your diabetes medications based on your blood sugar results. Always take your meter or a record of your blood sugar results with you to doctors' appointments.

You may need to take more than one medicine. These can be pills, insulin or both. You may take more than one type of insulin. Bring all the medications you are taking to all doctors' appointments.

It is important to have a plan for sick days. Your insulin dose may need to be changed while you are sick. If you take pills to control your blood sugar, continue to take your medications. (see section on sick-day plans).

Type 1 diabetes

People with type 1 diabetes must take insulin because their pancreas does not make any insulin. They need to inject insulin to live. There are different types of insulin. Your doctor will help you decide which type of insulin will be best for you and your lifestyle. Remember to be flexible because your insulin type and dose may need to be changed at times.

Your insulin dose depends on your blood sugar results, activity level and meals. Your doctor or diabetes educator can help you learn how to adjust your insulin dose.

Type 2 diabetes

In type 2 diabetes, the pancreas is not able to make enough insulin and/or the insulin does not work well to control blood sugar. People with type 2 diabetes need to check their blood sugar. Your doctor or diabetes educator will tell you how often to do so.

Some people with type 2 diabetes are able to control their blood sugar by balancing what they eat with how active they are, but many people need to take pills and/or insulin. Diabetes pills work in different ways. They help your body make more insulin, help your cells use insulin or help your kidneys remove sugar from your body.

You should take your medicine exactly as your doctor tells you. You should know when to take your pills, how many to take and how often you are supposed to take them.

Pills alone may not be enough to lower your blood sugar to meet your goal. Some people with type 2 diabetes need to take insulin to lower their blood sugar even though they have worked hard at eating and exercising right.

If you are struggling to pay for insulin or know someone who is, the ADA has resources to help—visit

[InsulinHelp.org](https://www.insulinhelp.org).



Insulin use

Insulin is injected under the skin, which is called a subcutaneous injection. Insulin cannot be given in pill form because the acid in the stomach destroys insulin. Insulin may be given continuously by an insulin pump (see section on insulin pumps).

Different types of insulin

There are many types of insulin. Insulin is divided into types based on how it is made. There is human insulin and analog insulin. Human insulin is the same as the insulin produced in your pancreas. Analog insulins are slightly different than human insulin, which allows them to work faster or slower than regular human insulin. Human and analog insulins are divided into types based on how fast they begin to lower blood sugar (onset) and how long they continue to work in the body (duration).

Human insulin

Short-acting or regular insulin: This type of insulin takes 30 minutes to start working to lower blood sugar and lasts five to eight hours. It is usually taken 30 minutes before meals.

Intermediate-acting or NPH insulin: This type of insulin takes one to three hours to start lowering blood sugar and lasts 12 to 16 hours. It is usually taken before breakfast and in the evening.

Premixed: This type of human insulin is a combination of regular insulin and NPH insulin. It is taken twice daily, usually 30 minutes before breakfast and 30 minutes before dinner.

Analog insulin

Fast-acting: This type of analog insulin starts to work in 15 minutes. It is usually taken right before a meal is eaten.

Novolog, Humalog, Apidra or Fiasp

Long-acting: This insulin works slowly for 24 hours in your body. It is used to control your blood sugar between meals and while you sleep. It should be taken at the same time every day because it works for 24 hours.

Levemir, Lantus, Basaglar, Toujeo or Tresiba

Premixed: This is a combination of fast and intermediate acting analog insulin. It is taken twice daily, usually 30 minutes before breakfast and 30 minutes before dinner.

Currently available insulins

Insulin Therapy Name	Administration	Onset, Peak	Duration	Considerations
Fast Acting				
Lispro Humalog <i>(U100 & U200)</i> Ademelog Aspart Novolog, Fiasp <i>(ultra fast)</i> Glulisine Apidra	Usually given 2-4 times per day To be given No more than 15 minutes before meal	Onset 5 – 15 minutes (Fiasp is 2.5 minutes) Peaks 30-90 minutes after injection	Less than 5 hours	Usually taken with food Can be used in insulin pumps- Fiasp not approved for pumps
Short Acting				
Regular Humulin R Novolin R	Usually given 2 times per day No more than 30 minutes before meals	Onset 30-60 minutes Peaks 2-3 hour after injection	5-8 hours	When mixing, draw up Regular insulin first Cloudy appearance
Combination Effect				
Mix of NPH & Humalog or Novolog 70/30, 50/50, 75/25 Mix of NPH & Regular 50/50, 70/30 Mix of Degludec & Aspart Ryzodeg Mix 70/30	Usually given 2 times per day Usually given 1-2 times per day	5-15 minute onset Dual Peaks 30-60 minute onset Dual Peaks	10-16 hours 24 hours	Numbers in name give percentage of insulin (70% NPH, etc.) Cloudy appearance Give before meals
Intermediate Acting				
NPH Humulin N Novolin N	Usually given 1-2 times/day	2-4 hour onset 4-10 hour peak	10-16 hours	Cloudy When mixing, draw up Regular then NPH
Long acting insulin				
Glargine Lantus, Basaglar, Toujeo <i>(U300)</i> Detemir Levemir Degludec Tresiba <i>(U100 & U200)</i>	Given 1-2 times/day In general, this long acting insulin is never held.	Onset 2-4 hours No Peak Onset 3-8 Hours No Peak Onset ~1 hour No Peak	20-24 hours 6-24 hours Up to 42 hours	Monitor for low blood sugar at any time DO NOT mix with other insulin
Humulin R Unit-500				
Concentrated insulin	Given 2-3 times per day To be given no more than 30 minutes before meal	Onset 15 minutes Peak 6 hours	13-24 hours	For patients that need more than 200 units of insulin per day

How to inject insulin

Insulin comes in bottles (vials) or in prefilled insulin pens. Insulin syringes are used to give insulin from a bottle. The syringe is a tube that has a needle on one end and a plunger on the other. The needle is pushed through the rubber stopper on the insulin bottle after cleaning the stopper with an alcohol swab. The plunger is pulled back to the right amount of insulin to draw the insulin into the tube part of the syringe.



Insulin pens are prefilled with insulin. They look like writing pens with a cap. A needle, called a pen needle, is placed on the end of the pen before each insulin dose. Be sure to remove BOTH caps from the pen needle. The amount of insulin is chosen by turning a dial. Not all insulin types come in pens. Pens may be more expensive than insulin in vials. There are other medicines for diabetes that are also injected under the skin, which also come in pens.

You and your doctor will decide whether an insulin pen or bottle and syringe are best for you. Always read the label on the insulin bottle or insulin pen to be sure you have the right type of insulin.

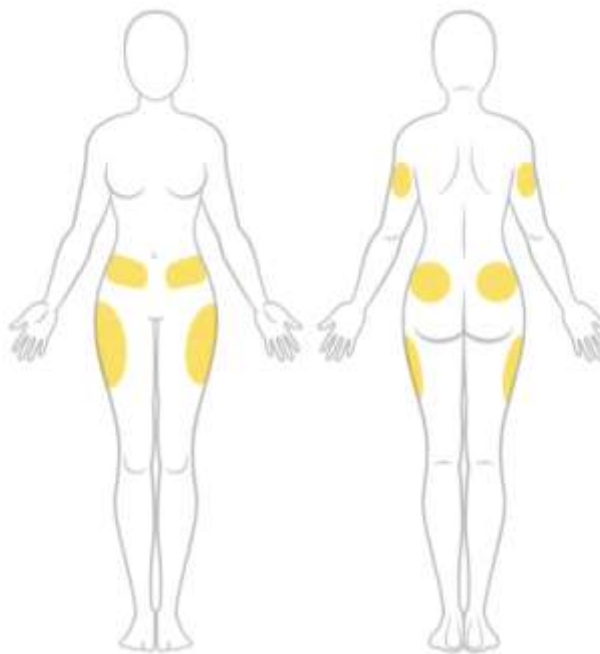
Where to inject insulin

Insulin can be injected into your:

1. Abdomen (belly) except for a 2 inch circle around your belly button.
2. Thighs (top and outer parts)
3. Backs of upper arms

You may inject insulin into the same area of the body each day but not in the exact same spot. Injecting insulin in the same spot every time can cause scars or hard lumps to form under the skin.

Where you inject insulin can make a difference in how quickly the insulin is absorbed from under the skin into the blood. For example, injecting insulin into your thigh when you have been exercising your legs may cause the insulin to be absorbed more quickly.



Side effects of insulin

Hypoglycemia (low blood sugar) is a side effect of insulin. Hypoglycemia is a blood sugar less than 70 mg/dl.

Hypoglycemia can occur when you missed a meal or ate too few carbohydrates, increased activity, or took too much insulin or too much of certain diabetes pills.

Signs and symptoms of hypoglycemia are shakiness, sweating, dizziness, unusual hunger, confusion or changes in behavior, feeling weak or tired, headaches, or feeling nervous or upset. You may have several of these signs and symptoms. If the low blood sugar is not treated, you may pass out (see section on hypoglycemia for how to treat low blood sugar).



Storing insulin and other diabetes tips

Injectables

- Follow the instructions that come with the insulin or injectable product.
- Keep new, unopened boxes in the refrigerator but not where they might freeze.
- Do not freeze insulin or other diabetes injectables. If accidentally frozen, throw the insulin or other injectable out because it is no longer good.
- Most insulin and other diabetes injectables may be stored at room temperature after they have been used for the first time. Check the instructions to be sure.
- Keep insulin out of bright light or sunlight.
- Do not store insulin or other diabetes injectables in the car or other places that get hot.

- Do not use insulin or other diabetes injectables after the expiration date on the label.
- Once insulin and other diabetes injectables have been opened, it is good for a shorter length of time than the expiration date. See chart below and read label to confirm.
- Do not use insulin that has changed colors or has flakes or clumps floating in it.
- Do not use your insulin if it is normally clear but has become cloudy.

How to dispose of needles, syringes and lancets

Needles, syringes with needles and lancets are called sharps. Loose sharps should not be thrown away in the trash. In Ohio and sharps should be placed in a hard, leak proof container that is hard to poke a hole in and

Insulin Vials	Storage
Apidra, Ademelog, Humalog, Humalog 75/25, Humalog 50/50, Humulin R, Humulin N, Humulin 70/30, Lantus, Novolog, Novolog 70/30	28 days
Regular (concentrated) U500	40 days
Levemir, Novolin R, Novolin N, Novolin 70/30,	42 days
Insulin Pens	
Humulin 70/30, Humalog 75/25, Humalog 50/50	10 days
Humulin N, Novolin N, Novolog 70/30	14 days
Apidra, Ademelog, Basaglar, Fiasp, Humalog, Lantus, Novolin R, Novolog, Fiasp, Regular U500, Ryzodeg	28 days
Levemir, Toujeo	42 days
Tresiba u-100 and u-200	56 days
Other Injectables	
Trulicity	14 days
Bydureon, Byetta, Symlin, Victoza, Ozempic	30 days

Note: All UNOPENED products should be stored in refrigerator and are good until expiration date on label. Guidelines above are for products at room temperature or in refrigerator OR unopened at room temperature.



has a tight lid. Detergent bottles, bleach bottles, two-liter bottles, plastic juice containers and coffee cans with the lid taped to the can work as containers for sharps. Write the word "SHARPS" on all sides of the container in big letters. You can also buy containers that are made to hold sharps. Safe sharps containers can be placed in the trash.

For more information about disposal of sharps, contact your local health department.

Oral medications (pills) for type 2 diabetes

There are many options for oral diabetes medications. These pills work in different ways to lower blood sugar.

Biguanides

Work by reducing production of sugar in the liver

Metformin (Glucophage, Glucophage XR, Glumetza, Fortamet): This medicine given to lower blood sugar in type 2 diabetics.

Metformin may help with weight problems because it helps the body use insulin better.

It can cause nausea or diarrhea in some people, but the nausea and diarrhea usually go away soon.

Taking metformin with food helps, so take it with meals. It is usually given two or three times daily.

Some people cannot take metformin because their kidneys or heart do not work well.

Metformin may be stopped if you are in heart failure because it can cause a serious medical problem called lactic acidosis. Lactic acidosis is when lactic acid builds up in the blood faster than it can be removed. Lactic acid is produced when oxygen levels in the body are low.

Insulin secretagogues

Work by stimulating insulin release

Meglitinides: Take these medications one to 30 minutes before meals to control your blood sugar. [Repaglinide \(Prandin\)](#), [Nateglinide \(Starlix\)](#)

Sulfonylureas: They are taken once or twice daily, 30 minutes before meals. If you are allergic to sulfa, you usually cannot take a sulfonylurea. [Glipizide \(Glucotrol, Glucotrol XL\)](#), [Glyburide \(Diabeta, Micronase\)](#), [Glyburide micronized \(Glynase\)](#), [Glimepiride \(Amaryl\)](#)

Both meglitinides and sulfonylureas can cause low blood sugar if not balanced with carbohydrate intake and exercise. They may also cause weight gain.

Put used sharps in a strong, plastic container.

When the container is 3/4 full, put the lid on, seal it with duct tape and label DO NOT RECYCLE.



Put the plastic container in the household trash—**don't recycle!**



Containers of used sharps cannot be placed in the household trash in California, Massachusetts, and Seattle, Washington. Visit [SafeNeedleDisposal.org](https://www.safeneedledisposal.org) for more information on safe sharps disposal in your area.

Thiazolidinediones (glitazones)

Work by helping your body respond better to insulin

Periodic liver blood tests are needed. They may cause or worsen heart failure—notify your doctor if you gain weight or notice swelling in your legs, ankles, feet, arms, hands or belly. They can be taken with or without food.

They may increase the risk of bladder cancer and bone fracture. [Rosglitazone \(Avandia\)](#), [Pioglitazone \(Actos\)](#)

Alpha-glucosidase inhibitors

Work in your stomach and bowels to slow down the absorption of sugars and carbohydrates

They can cause abdominal pain, gas and diarrhea. Take with the first bite of food at each meal.

[Acarbose \(Precose\)](#),
[Miglitol \(Glyset\)](#)

SGLT-2 inhibitors

Work by increasing the amount of sugar leaving the body in the urine

Take once daily. These medicines may lower your blood pressure. These medicines act as water pills (diuretics). If you are on a water pill already, the dose of your water pill may need to be reduced. Have your kidney function tested before starting this medication. These medicines may cause modest weight loss and lower blood pressure. They may also cause urinary tract infections or yeast infections. The medications have caused diabetic ketoacidosis even though blood sugar is 250mg/dL or less.

[Canagliflozin \(Invokana\)](#), [Dapagliflozin \(Farxiga\)](#), [Empagliflozin \(Jardiance\)](#),
[Ertugliflozin \(Steglatro\)](#)

DPP-4 inhibitors

Work by increasing the release of insulin and decreasing the release of sugar from the liver Take once daily. Tell your doctor if you have abdominal pain (pain in your belly), nausea and vomiting. [Sitagliptin \(Januvia\)](#), [Saxagliptin \(Onglyza\)](#),
[Linagliptin \(Tradjenta\)](#), [Alogliptin \(Nesina\)](#)

Combinations

Sometimes two diabetic medications are combined in a single pill.

These combination medicines work like both medicines in the pill and reduce the number of pills needed. They can be costly and may not be covered by insurance. If you are prescribed a combination pill, discuss how it works with your doctor or pharmacist.

Non-insulin medications that are given as injections

Synthetic amylin

Work by slowing the rate of movement of food from the stomach to the intestine and tells the liver to decrease glucose output

Take right before a big meal. It is used with insulin for the treatment of type 1 and type 2 diabetes. [Pramlintide \(Symlin\)](#)

Incretin mimetics

Works by causing your pancreas to release insulin when blood sugar is rising

Incretin is a natural hormone made in your digestive tract. Incretin mimetics act like (mimic) the incretins in your body that lower blood sugar after eating. They may cause nausea and vomiting, which usually resolves soon after the medication is started. Tell your doctor if you have abdominal pain (pain in your belly), nausea and vomiting. They can cause some modest weight loss. These medicines are approved for treatment of type 2 diabetes. They should be avoided if you have a personal or family history of pancreatitis or medullary thyroid cancer— notify your doctor if you have hoarseness or a throat lump.

[Exenatide \(Byetta\)](#): twice daily with meal

[Liraglutide \(Victoza\)](#): once daily

[Exenatide XR \(Bydureon\)](#), [Dulaglutide \(Trulicity\)](#), [Semaglutide \(Ozempic\)](#): once weekly

[Semaglutide \(Rybelsus\)](#): once daily ORAL

Insulin pumps

Insulin pumps are small electronic devices that deliver insulin in two ways:

- In a steady, measured and continuous dose (the “basal” insulin)
- As a surge (“bolus”) dose, at your direction, around mealtime

Doses are delivered through a flexible plastic tube called a catheter. With the aid of a small needle, the catheter is inserted through the skin into the fatty tissue and is taped in place. The needle is removed, leaving the catheter in place.

Insulin pumps can help some people achieve better control, and many people prefer this continuous system of insulin delivery over injections.

Ask your primary care provider if you are interested in an insulin pump. You may need to be seen by an endocrinologist—someone who specializes in diabetes. Check with your insurance carrier to see if insulin pumps are covered under your policy.

All insulin pumps have a toll-free number on the back in case you have questions or problems with your pump.

Intensive Insulin Pump Support Group

The Family Medical Group

6331 Glenway Avenue

Join others to share ideas and get support focused on living a healthy lifestyle with diabetes. Groups are free, and all are welcome.

Contact Betty Hollstegge, CDE, at betty_hollstegge@TriHealth.com or 513 389 1400 for more information.



Note: It is a good idea to carry extra insulin pump supplies with you, especially if you will be in the hospital.

Medication used to correct a low blood sugar

Glucagon

This medicine is available in a kit for a low blood sugar emergency. Symptoms of a low blood sugar emergency are unconsciousness (cannot wake the patient), patient is awake but unable to eat, the patient is having a seizure, or the patient's blood sugar is still less than 70 even after eating or drinking food containing sugar. It is important to act quickly when someone with diabetes becomes unconscious or will not wake up.

Most often, glucagon is injected into the muscle. This type of glucagon is a powder in a bottle to which sterile water is added from a prefilled syringe. The same syringe is then used to give the injection. Do not mix the glucagon with water unless you are going to inject the glucagon.



Some glucagon can be given as a puff through the nose. Talk to your healthcare provider about which type may be best for you and your family. A family member or friend should know where you keep your glucagon kit and how to administer the medication. Read the directions that come with the kit with your friend or family member. That way you will be prepared if a low blood sugar emergency happens.



If a diabetic person is unable to be woken up, turn them on their side. They may vomit when they wake up so turning them on their side will stop them from choking on it. Administer the glucagon. Feed the patient as soon as they wake up.

Try small sips of fruit juice or regular soft drink. If tolerated, follow with a snack of a carbohydrate and a fat, such as peanut butter crackers. Call 911 even if the patient wakes up.

Glucagon will not revive someone who is unconscious because of high blood sugar.

Check the expiration date on your glucagon kit and ask your doctor for a new prescription if your kit has expired.

Medications that can affect your blood sugar

Some medicines that are used for other conditions, such as high blood pressure, COPD or depression, can affect your blood sugar. Some over-the-counter medicines can affect your blood sugar. Alcohol, caffeine and nicotine all affect your blood sugar.

Following are lists of some of the medicines that might cause your blood sugar to increase or decrease. Do not stop taking prescription medicines or change the dose without talking to your doctor. Always let your doctor know what over-the-counter medicines, vitamins and supplements you take.



Medicines that increase blood sugar

- Alcohol (acute use—social drinking)
- Antibiotics (Dapsone, Rifampin)
- Antidepressants (Zyprexa, Risperdal, Clozaril, Seroquel, Abilify, Geodon, Lithium)
- Beta-2 stimulators (Proventil, Alupent, Serevent, Foradil, Brethine, Theo-Dur)
- Caffeine
- Corticosteroids (Prednisone, Decadron, DepoMedrol)
- Dilantin (phenytoin)
- Nicotine (smoking and patches)
- Estrogens (Premarin, hormone replacement therapy)
- Heart and blood pressure medications (amiodarone, beta blockers, calcium channel blockers, catapres, diuretics)
- Oral contraceptives (birth control pills)
- Niacin or nicotinic acid
- Protease inhibitors (ritonavir, etc.—AIDS drugs)
- Thyroid hormones (Synthroid, Levothroid)

Medicines that decrease blood sugar

- Alcohol (acute excess amounts)
- Antibiotics (Bactrim/Septra)
- Aspirin and other salicylates in larger doses
- Heart and blood pressure medications (ACE inhibitors, beta blockers, Norpace, Quinidine)
- Quinine
- Tylenol (acetaminophen—especially in larger doses)

What to expect when you are having a medical procedure

If your procedure or surgery is elective or scheduled ahead of time, there are some things you can do to help manage your diabetes before, during and after the surgery.

- Take good care of yourself during the time before surgery. Eat healthy, exercise if permitted, stop smoking and drinking alcohol or reduce the amount you smoke and drink. Take all medications as prescribed.
- Be sure the surgeon or doctor performing the surgery or procedure knows what type of diabetes you have and knows what medicine and/or insulins you take for diabetes.
- Be sure to bring an updated list of your medications including your diabetes medications and insulin to the appointment. Doses are important. If you use a sliding scale to determine your insulin dose, bring the written scale with you.
- Follow the instructions provided by your surgeon or the doctor prior to your procedure, especially when to stop eating and drinking.

Follow the instructions provided by your surgeon or the doctor about which diabetic medications to take the night before surgery and the morning of surgery.

- Often pills for diabetes are not taken the morning of a surgery or procedure because they can cause low blood sugar if you do not eat. Insulin doses may be reduced depending on what time of day the procedure is scheduled and how long you are not allowed to eat.
- If the surgeon or doctor has not given you instructions about which diabetic medications to take, call the doctor who prescribes your diabetic medications for guidance. Do not wait until the day before surgery to call the doctor.
- People with type 1 diabetes should always take their basal insulin or keep their pump on.

- If you use an insulin pump, call your endocrinologist or the doctor who adjusts the pump. He/she will develop a plan for adjusting the insulin doses in your pump in preparation for your procedure.
- Even if you are told to not take your diabetic medications or insulin, continue to check your blood sugar as prescribed and monitor for symptoms of low or high blood sugar.
- If you are going home the same day after the procedure or surgery, bring your diabetic medications and/or insulin with you to take afterwards.
- Metformin or Glucophage should not be taken for 48 hours after IV contrast is given. IV contrast is used during CT scans, MRIs and angiograms.

If you will be admitted to the hospital after the procedure or surgery:

- Your nurses will check your blood sugar frequently and your doctors will adjust your insulin based on your blood sugar.
- If you use an insulin pump, keep it on. If you are staying overnight in the hospital bring extra infusion sets, insulin and batteries for the pump. If your pump needs to be stopped for any reason, make sure you are given insulin injections.
- If you are staying in the hospital, your diabetes will likely be treated with insulin while in the hospital even if you use pills at home. Using insulin allows for better control of your blood sugar.
- Many diabetes pills can cause low blood sugars if you are not eating like usual.
- If you use insulin at home, you may need more or less insulin after surgery for a short time due to stress on the body and changes in diet.

Treatment of diabetes in the hospital

While you are in the hospital, your doctor will likely order insulin injections to keep your blood sugar in a normal range. It is important to have your blood sugar between 110 and 180. If your blood sugar is too high, you will not heal as well.

To make sure your blood sugar is in control, your blood sugar will be tested before every meal and at bedtime.

Diabetes pills are usually stopped while you are in the hospital due to changes in your appetite and/or mealtimes due to tests and procedures.

Instead, insulin is often used to manage blood sugar. Most patients need long-acting insulin once a day and short-acting insulin with each meal.

Meals

Please do not eat your meal until after your blood sugar is checked by the nursing staff.

Please do not let your family or friends eat food from your meal tray. Also, please let us know if you have eaten food that was brought to you by your family or friends. The nursing staff will need to know the amount of food you've eaten for your insulin dose.

Low blood sugar

Let the nurse know if you feel shaky, dizzy or sweaty. This can be a sign of low blood sugar. The nurse will check your blood sugar and give you juice or milk if it is less than 70. If you are not allowed to eat, you may be given dextrose (sugar solution) through your IV.

When you go home

Unless your medications needs adjusted, most patients return home on their usual diabetes medications. If changes are needed, the nurse will explain the new regimen and make sure you have the right supplies before you leave.



High blood sugar—hyperglycemia

High blood sugar may occur within hours or it may develop over several days. You may have one or all of the following symptoms:

- High blood sugar levels (greater than 200)
- Extreme thirst
- Using the bathroom a lot
- Very hungry
- Fatigue/sleepiness
- Blurry vision
- Infections or slow to heal wounds
- Pain in stomach with or without nausea and vomiting

Causes of high blood sugar

- Too much food or eating the wrong foods
- Not enough diabetes pills or insulin
- Illness or infection
- Not enough exercise (do not exercise if your sugar is greater than 240)
- Stress

What to do to prevent hyperglycemia

- Always take your diabetes medicine unless your doctor tells you not to.
- Test your blood sugar every four to six hours.
- If you usually take insulin, test your urine for ketones. Call your doctor if moderate to large amounts of ketones are present.
- If your blood sugar is greater than 240, drink 8 ounces of sugar-free liquid every one to two hours.
- Call your doctor if you are vomiting and unable to eat or drink liquids. Remember to call your doctor if your blood sugar stays above the goals you've been given for 24 hours.

Signs and Symptoms of High Blood Sugar



Low blood sugar—hypoglycemia

Low blood sugar (usually less than 70 mg/dl) usually occurs quickly and may require that someone help you get treatment.

Symptoms include:

- Shaking
- Sweating
- Dizzy
- Irritability/confusion
- Hunger
- Weak or tired
- Headache
- Nervous or upset

Causes of low blood sugar

- Too much insulin or too many diabetes pills
- Not enough food or missing a meal
- Too much exercise or extra physical activity

What to do to prevent hypoglycemia

Try to test your blood sugar. If you are too shaky, eat or drink a fast-acting carbohydrate such as:

- 4 ounces of juice (orange, apple, cranberry or grape)
- 6 ounces (1/2 can) of a regular soft drink
- 8 ounces of skim milk
- glucose tablets
- 8 SweeTarts® candies
- 1/4 cup of raisins

Test blood sugar every 15 to 30 minutes until it is greater than 100. Eat a second fast-acting carbohydrate if needed. If your next regular meal is more than two hours away, eat a snack such as half a sandwich or three peanut butter or cheese crackers. If you are unconscious, someone should call 911 immediately. You should not be given anything by mouth if you are unconscious. Be sure to tell your doctor about this episode in case your medication needs to be adjusted.

Signs and Symptoms of Low Blood Sugar



Shaky



Sweaty



Dizzy



Confusion
and difficulty
speaking



Hungry



Weak or tired



Headache



Nervous or upset

Sick-day plan

Illness or injury can make managing your diabetes more difficult. When you are sick, your body is in a state of stress and produces stress hormones.

These hormones help your body fight the illness or injury, but they also cause your blood sugar to increase. Your blood sugar can increase when you are sick even if you are unable to eat or drink.

Untreated high blood sugar can lead to diabetic ketoacidosis (DKA) or hyperosmolar hyper-glycemic syndrome (HHS). DKA and HHS are health emergencies and require treatment in the hospital.

These problems can be avoided by having a sick day plan, which you should develop with your doctor.



What type of illness can make controlling my blood sugar harder?

Just about any type of illness can make controlling your blood sugar more difficult, including:

- Colds
- Stomach bugs that cause vomiting and diarrhea
- Infections of the ear, sinuses, throat, teeth or bladder
- Pneumonia
- Infected sores including those on the feet

Sick-day tips

- Always take your long-acting insulin.
- Generally, you will need more insulin when you are sick. Your doctor will decide how much insulin you will need to take while sick or if you should continue your diabetes pills.
- If you are taking a type of diabetic pill called an insulin secretagogue such as glyburide, glipizide, glimepiride, repaglinide or nateglinide and are unable to keep food down, call your doctor to decide if you should take it.
- Check your blood sugar every two to four hours.
- Urine should be checked for ketones if your blood sugar is greater than 240 or if you have been vomiting or having diarrhea.
- Discuss with your doctor any other instructions that are specific to your condition.

When should I call the doctor?

- You have been sick for 24 hours or more
- Your temperature is greater than 101.5 degrees
- You have been throwing up or had diarrhea for more than six hours
- There are moderate to large amounts of ketones in your urine
- Your blood sugar is greater than 240 or less than 70 for two checks in a row
- You have symptoms of infection such as pain with urination or wounds with drainage
- You are dehydrated
- You have chest pain or abdominal pain
- You have difficulty breathing
- You have any questions or are unsure what you should do



MEDICATION

- Continue to take insulin and oral glycemic medications as scheduled
- Over-the-counter medications taken during sick days should consult with diabetes care team



GLUCOMETER

- Check blood sugar every 2-4 hours
- Record in a diabetes diary log
- Consult with diabetes care team if greater than 240 mg/dl for >6 hours



CARBOHYDRATES

- Take 15 grams of carbs every hour until able to replace with normal food
- Consider 50 grams of carbs every 3-4 hours including: crackers, gelatin dessert, yogurt, soup



KETONES

- Blood sugar over 240mg/dl or during sick days, check your urine for ketones
- Check ketones every 4 hours until readings are negative
- If ketones are present, consult with diabetes care team



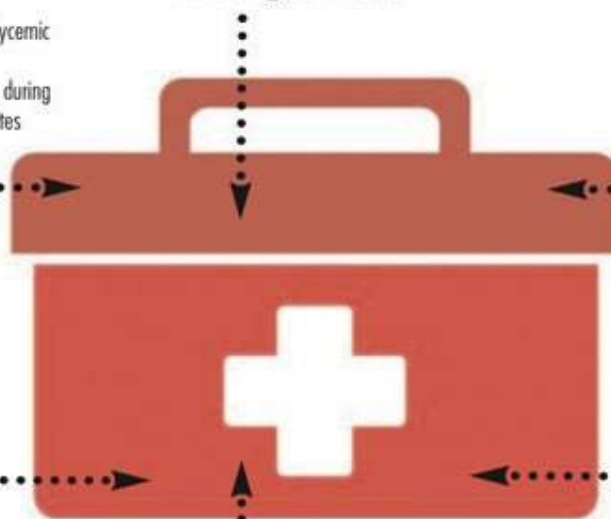
HYDRATE

- Drink at least one glass of fluid every hour
- Avoid caffeine and high sugar drinks



PHONE

- Consult diabetes care team:
 - Fever >101.5
 - Illness lasts more than 24 hours
 - Unable to hold fluids and food
 - Additional concerns regarding care





What should I eat and drink while I am sick?

When you are ill, you may not be able to eat as you normally do because you are sick to your stomach and vomiting or because you don't feel like eating. You might not have the energy to go shopping or to prepare food. You will probably be less active than you are when you feel good.

- Drink at least 8 ounces of caffeine-free fluid every hour. Caffeine increases urination and can lead to further dehydration when you are already vomiting or have diarrhea.
- Eat 50 grams of carbohydrates (3 carbohydrate servings) every three to four hours. Even if your blood sugar is high, it is important to continue to take in carbohydrates.
- If you are vomiting, eat foods that are easy on the stomach such as toast, crackers, broth and soups. Include fluids that have calories such as fruit juice, regular caffeine free-soda, gelatin and popsicles.

What things do I need to have on hand to be prepared for a sick day?

- Foods that are easy on the stomach such as applesauce, crackers and soup
- Liquids that provide calories such as juices, regular caffeine-free soft drinks, reduced-sugar sports drinks, regular gelatin and popsicles
- Liquids that are calorie-free such as water, diet sodas, sugar-free gelatin and herbal teas
- Thermometer
- Diabetic medications and/or insulin
- Glucose meter, glucose strips and supplies for checking your blood sugar
- Ketone sticks (especially for type 1 diabetics)
- List of emergency telephone numbers. If you live alone, it is important that you let a friend know that you are sick.
- Over-the-counter medicines such as Tylenol (acetaminophen) for fever and pain, Lomotil (loperamide) for diarrhea, and sugar-free cough drops and syrups for cough and sore throat.
- You should discuss the use of over-the-counter medicines with your doctor before using them as some medications can increase your blood sugar.

Should I exercise when I am sick?

You should not exercise when you are sick. Exercise during illness can increase your blood sugar and ketones.

Diabetes action plan

GREEN ZONE: All Clear

If you have any of the following:

- Most fasting blood sugars are less than 130
- Average blood sugars two hours after meals are less than 180
- No low blood sugars are less than 70
- HbA1C is less than 7%

Then:

- Your blood sugars are under control
- Continue taking your diabetes medications and doing home blood sugar testing
- Follow healthy eating habits and activity goals
- See your doctor/diabetes educator every three to six months unless directed to be seen more often

YELLOW ZONE: Caution

If you have any of the following:

- Most fasting blood sugars are between 130 and 180
- Average blood sugars two hours after meals are between 180 and 240
- Low blood sugars one to two times a week are less than 70
- HbA1c is above 7%

Then:

- Improve your eating habits
- Increase your activity level
- You may need a medication change
- If your blood sugars are not better in one week, call your doctor, diabetes educator or home health nurse

RED ZONE: Medical Alert

If you have any of the following:

- Most fasting blood sugars are greater than 180
- Average blood sugars two hours after meals are greater than 240
- Frequent low blood sugar
- Moderate to large ketones (type 1 only)
- Use of glucagon kit
- HbA1c is above 8%

Then:

- You need to be seen by your health care provider.
- Call your doctor.

Note: You may need to be seen by your doctor monthly for follow-up to get your blood sugar under control.

Contact information for home care, family doctor or endocrinologist

Name:_____

Name:_____

Phone:_____

Phone:_____

Problem-solving

Controlling your blood sugar is hard work. Eating a healthy diet, exercising regularly, taking medication and monitoring your blood sugar all take time and effort. Having a routine and being prepared for unexpected roadblocks can make controlling your blood sugar easier.

The key to meeting the challenge of controlling your blood sugar is to plan ahead, act and learn from your mistakes. Keep a diary of your blood sugar values, your diet and your activity. Looking at a record of these three things can help you see what is working and what is not working. Forgive yourself for mistakes. Join a support group to learn from others who have faced the same problems.

Problem: There are so many things I need to control my blood sugar.

Solution:

- Keep your blood sugar meter and supplies, insulin and syringes, or insulin pens and needles in a safe place together.
- Store unopened insulin in the refrigerator.
- Buy or make a pouch or case to keep the needed supplies together when away from home.
- Keep all medications and needles away from children.

Problem: Eating right is hard, especially when time is tight.

Solution:

- Plan meals and snacks ahead of time. Consider creating a menu for several days into the future.
- Write a grocery list with all the needed ingredients on it.
- Prepare several meals at a time and freeze to eat later.
- Pack leftovers for lunches at work to avoid missing a meal or grabbing whatever is available. Bring a snack to work in case your blood sugar gets low.

Problem: Eating right when I am away from home is even harder.

Solution:

- Carry food with you so that you have healthy food choices, even if you are delayed on the road.
- Download an app on your phone to help you keep track of carbs when eating at popular restaurants.

Problem: What about eating on holidays and special occasions?

Solution:

- Decide ahead of time what one holiday treat you cannot skip, and have a small portion.
- Bring a dish to the party that you can enjoy and share.
- Experiment with holiday recipes to reduce sugar and fat.
- If well-meaning family urges you to eat too much, politely explain that you are eating for your health.

Problem: What about emergencies?

Solution:

- When the weather forecast is bad, make a trip to the store so that you have healthy food at home.
- Have some foods on hand that do not need to be in the refrigerator in case there is a power outage.
- Keep some hard candy in your purse or pocket, in your glove compartment and next to your bed so if your blood sugar is low, a source of carbohydrates is handy.

Problem: Finding time to exercise is hard.

Solution:

- Pick activities that you enjoy so that you will make time.
- Have both outdoor and indoor choices so that bad weather doesn't prevent you from exercising.
- Find an exercise buddy. You can encourage each other on the days one of you does not feel like exercising.
- Exercise while watching a favorite show. Take a 10-minute walk on your lunch break.
- When traveling, use the motel pool or gym, or take walks.
- Exercise can be broken down into smaller time periods. Being active is better than sitting still.

Problem: No matter what I do, my blood sugars are too high or too low or both.

Solution:

- Keeping a diary of your blood sugars, exercise and food will help you and your doctor figure out what may be the cause of high or low blood sugars.
- Ask for expert help. Take your diary to appointments with your doctor and with your diabetic educator. They may be able to spot the reason your blood sugar has been out of control.

Coping

People with diabetes are more likely to have depression than people without diabetes. This may be due to:

- The strain of managing diabetes on a daily basis
- Feeling alone and "different" from family and friends
- Feeling out of control if you are having trouble keeping your blood sugar in your target range

Depression can make it hard to follow your diabetes care plan. If you are depressed, you may not have the energy to:

- Prepare and eat healthy meals
- Get regular exercise
- Take diabetes medicines
- Check your blood sugar

Tell your health care team if you:

- Don't have interest or find pleasure in your activities
- Avoid talking about your diabetes with family and friends
- Sleep most of the day or can't sleep at night
- Struggle with finding motivation or making a plan to manage your diabetes
- Don't see the use in taking care of yourself
- Feel like diabetes is controlling you
- Feel like you can't take care of yourself

Diabetes is also linked to stress. Stress can increase your blood sugar and make you more likely to overeat. Conversely, increased blood sugar levels can cause stress.

Consider healthy ways to cope with depression and stress from living with diabetes:

- Physical activity
- Breathing exercises/relaxation
- Make small, reachable goals and celebrate when you achieve them
- Replace negative, defeating thoughts with positive, more realistic ones
- Ensure healthy sleep patterns
- Get help from your diabetes care team
- Go outside
- Help others/volunteer/make social contact
- Consider joining a support group

Diabetes care checklist

Vaccination recommendations

Vaccines are very important for people with type 1 or type 2 diabetes. People with diabetes are more likely to get the flu and other infections than people without diabetes. Diabetes can make the immune system less able to fight infections while the infection makes blood sugar control more difficult.

When people with diabetes get sick, they are at risk for pneumonia, bronchitis, sinus infections and ear infections. The good news is the immune system of a diabetic person responds to vaccinations as well as a nondiabetic person's.

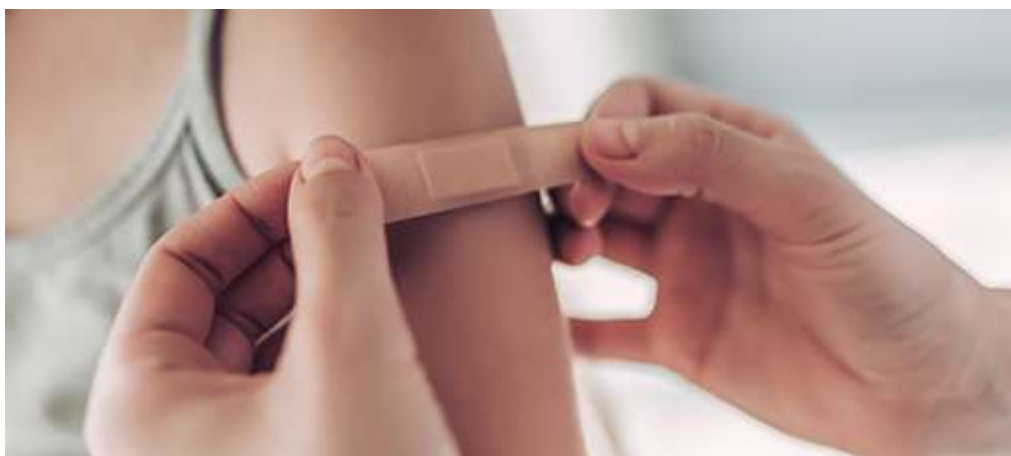
People with diabetes should take everyday precautions including avoiding sick contacts. Those with flu-like symptoms should stay home for 24 hours after the fever is gone (without the use of fever-reducing drugs).

Covering nose and mouth when sneezing and coughing with a tissue; not touching eyes, nose and mouth; washing hands often; and cleaning surfaces such as keyboards and phones between users are all recommended as everyday preventive actions.

Diabetics should have a sick-day plan and supplies to implement the plan on hand. (See section on sick-day plans.)

CDC vaccine recommendations for diabetics

- ☐ Flu vaccine every year
- ☐ Tdap vaccine to protect against tetanus, diphtheria and whooping cough
- ☐ Pneumococcal polysaccharide vaccine to protect against pneumonia and other similar diseases. People over age 65 may need a second dose.
- ☐ Hepatitis B vaccine series to protect against hepatitis B
- ☐ Zoster vaccine to protect against shingles if you are 60 years and older
- ☐ HPV vaccine to protect against human papillomavirus if you are a man or woman under age 45
- ☐ MMR vaccine to protect against measles, mumps and rubella if you were born in 1957 or after and have not gotten this vaccine or do not have immunity to these diseases.
Your doctor may do a blood test to see if you have immunity.
- ☐ Varicella vaccine to protect against chickenpox if you were born in 1980 or after and have not gotten two doses of this vaccine or do not have immunity to this disease. Your doctor may do a blood test to see if you have immunity.



Know your numbers

Diabetes affects many aspects of your health. Long term uncontrolled high blood sugar can lead to health problems for people with type 1 and type 2 diabetes. These problems include:

- Damage to nerves (neuropathy), which can cause numbness or discomfort in hands or feet or may affect organs such as your stomach
- Damage to blood vessels in the eyes (retinopathy), which may lead to blindness
- Damage to blood vessels in the kidneys, which may lead to kidney failure
- Blockages in blood vessels, which can cause heart disease or stroke
- Blockages in the blood vessels in the legs, which can lead to slow healing sores on the legs and feet and even to amputation

In addition to controlling your blood sugar, regular follow-up with your doctor is important in maintaining overall wellness. Regular monitoring of the items below will help keep you on track.

- ☐ **Quit smoking (including e-cigarettes):** decide on a quit date and reward yourself for small victories. For free help, call 1 800 QUIT NOW or visit smokefree.gov.
My quit date: _____
- ☐ **A1C:** at least two to four times per year
Goal A1C: 6% to 8% for most people
My A1C: _____
- ☐ **Kidney exam:** every year. Have your urine and blood tested to monitor kidneys
Date of next kidney exam: _____
- ☐ **Blood pressure:** check at every doctor visit
Goal blood pressure: 130/80-140/90 mmHg
My blood pressure: _____

- ☐ **Cholesterol check:** at least once every year
 - Goal HDL (good) cholesterol: men greater than 40 mg/dl, women greater than 50 mg/dl
 - Goal LDL (bad) cholesterol: based on your risk for heart disease—discuss with your doctor
 - Goal triglycerides: less than 150 mg/dl

My HDL: _____

My LDL: _____

My triglycerides: _____

- ☐ **Dilated and complete eye exam:** every year. Call your eye care specialist with any changes in vision.

Date of next eye complete exam: _____

- ☐ **Complete foot exam:** every year. Let your doctor know if you have problems such as loss of feeling or tingling, changes in shape, or sores on your feet. Take your socks and shoes off during every office visit.

At home, check your feet every day. Inspect for cuts, blisters, cracks, swelling and dry skin. Wear shoes and socks that fit well. Do not go barefoot or wear sandals.

Date of next complete foot exam: _____

- ☐ **Dental exam:** at least yearly. Let your dentist know if you have bad breath or bad taste; red, sore, swollen, tender or bleeding gums; receding gums; loose teeth or teeth that have moved; pain while chewing or sensitive teeth; longer appearing teeth, change in bite; change in fit of partial dentures; or history of mouth or gum abscesses.

Brush teeth twice daily with a soft bristled toothbrush and fluoride toothpaste. Floss daily.

Date of next dental exam: _____

It is recommended that you wear a medical ID bracelet and/or carry an ID card indicating that you have diabetes.

Free smartphone apps for diabetes management

Bant – Log blood sugar readings and provide trend data for up to 90 days (iPhone)

Blood Sugar Tracker – Log blood sugar levels, set target blood sugar ranges, and view history and simple graphs to identify numbers that are out of range (iPhone)

Diabetes Companion – Complete nutrition facts for common foods, tons of recipes, videos, Q&A for common diabetes related issues and blood sugar tracking tools (iPhone)

Diabetes Log – Track sugar readings, carbohydrate intake and insulin dosage by date (iPhone)

Glucose Buddy Diabetes Tracer – Track blood sugar medication, A1C, and carb intake, log weight, blood pressure (iPhone and Android)

Carb Master Free – Track carbohydrate intake plus calories, fat, sugar, protein and fiber for the day (iPhone)

Diabetes Buddy Lite – Track factors that influence blood sugar levels such as daily carb intake, glucose measures, medication, and food and water intake (iPhone)

My Sugr - Log sugars, carbohydrates, and medications. Features statistics and graphs including estimated hemoglobin A1C that updates as sugars are recorded

Free general nutrition information/ healthy living apps

CalorieKing – Calorie, fat and carb counts for 70,000+ foods with an up-to-date list that includes 260 fast-food chains and restaurants (iPhone and Android)

GoMeals – Large list of restaurant foods and grocery store items; has customized settings for counting daily calories, carbs, fats and other nutrients (iPhone and Android)

MyFitnessPal – Allows user to set a daily calorie goal and record daily food intake and exercise. Has a very large food database. Calculates calories burned by exercise (iPhone and Android)

Lose It! – Can be used as a weight-loss tool; helps with keeping track of food intake and exercise (iPhone and Android)

ShopWell – Can help you build a healthy grocery list, create a profile with health, nutrition and weight goals, as well as scan item barcodes of more than 60,000 foods (iPhone and Android)

Cook'n – Allows you to create, edit and view recipes. Helps organize, search and email your favorite recipes and allows you to make a cookbook and do grocery list and menus (iPhone and Android)

Baritastic - Work toward goals by setting reminders and timers to take vitamins and track water intake. Keep a photo time line to stay motivated. (iPhone and Google Play)

Websites and resources

American Diabetes Association
www.diabetes.org

Local Office:
4555 Lake Forest Drive, Suite 396
Cincinnati, OH 45242
513 759 9330

Centers for Disease Control and Prevention
www.cdc.gov/diabetes

Children With Diabetes
www.childrenwithdiabetes.com

Choose My Plate
www.choosemyplate.gov

Cincinnati Children's Diabetes Center
www.cincinnatichildrens.org/service/d/diabetes/team

Food and Nutrition Information Center
www.fnict.nal.usda.gov

JDRF—Type 1 Diabetes
www.jdrf.org

Joslin Diabetes Center
www.joslin.org

National Institute of Diabetes and Digestive
and Kidney Diseases
www.niddk.nih.gov

TriHealth Diabetes
www.TriHealth.com/Diabetes

TriHealth Fitness Pavilion
www.TriHealth.com/hospitals-and-practices/trihealth-fitness-and-health-pavilion

TriHealth Seniority Group
www.TriHealth.com/institutes-and-services/senior-services/seniority

TriHealth Weight Management
www.TriHealth.com/hospitals-and-practices/trihealth-weight-management

Health coach programs

Novo Nordisk Cornerstones4Care®
www.cornerstones4care.com

AstraZeneca Fit2Me
www.fit2me.com

TriHealth Employees
www.TriHealthLifestyles.com

Prediabetes

Do I Have Prediabetes?
doihaveprediabetes.org

YMCA Diabetes Prevention Program
ymca.net/diabetes-prevention

cincinnatiymca.org/health-fitness/healthy-living

National Diabetes Prevention Program
cdc.gov/diabetes/prevention/index.html

Financial Assistance Programs

Eli Lilly
1-800-545-6962 <http://www.lillycares.com/>

Sanofi Aventis
1-800-981-2491
<http://www.sanofipatientconnection.com/>

Novo Nordisk
1-866-310-7549
<https://www.novocare.com/psp/PAP.html>

AstraZeneca and Me
1-800-292-6363 <http://www.azandmeapp.com/>

Wal-Mart

Low cost diabetes medications & supplies- Relion Brand
Kroger

Discount plan with \$36 annual fee, many prescriptions for less than \$6
<https://www.krogersc.com/static/files/KrogerRx-Program-Drugs.pdf>

If you are struggling to pay for insulin or know someone who is, the ADA has resources to help—visit InsulinHelp.org.

Outpatient Diabetes Education

Talk with your primary care doctor to enroll in any of the classes below.

One-on-One Diabetes Education Session

These sessions are ideal for:

- Patients living with Type 1 Diabetes, Type 2 Diabetes or Prediabetes
- Patients who would not learn well in a group environment or prefer/need individualized training or instruction
- Patients who have attended the group classes, and now want more individualized follow-up

May include one or both of the following separate sessions:

- Comprehensive Diabetes Self-Management Training/Education (1:1 with RN, CDE)
- Medical Nutrition Therapy (1:1 with RD, CDE)

Your insurance company may cover the cost of your visits- this varies so it is highly recommended you confirm what your plan covers. You can also make self-payment arrangements if needed. Currently, Medicare allows 10 hours of education the first year after you are diagnosed and then pays for two hours each year after for an update of current information.

Must be referred by doctor to attend class.

Free Group Diabetes Education Sessions

These classes are ideal for:

- Patients living with prediabetes or Type 2 Diabetes
- Patients who learn well in a group environment
- Patients who do not have insurance coverage for 1:1 education referrals
- Patients who can arrange to attend the 2.5 hour class
- Please bring your glucose meter and testing supplies, if available.

Registration is required, so please call 513 569 6200 or register online at www.trihealth.com/diabetes

If leaving a message, please give location you plan to attend

Please Note: no cost to patients to attend, but registration is required

Bethesda North Hospital
10496 Montgomery Road
Suite 206
Cincinnati, OH 45242
Fax: 513 569 6617
Contact: 513 865 1126

Good Samaritan Hospital
375 Dixmyth Avenue
Cincinnati, OH 45220
Fax: 513 569 6617
Contact: 513 865 1126

McCullough-Hyde
Memorial Hospital | TriHealth
110 North Poplar Street
Oxford, OH 45056
Fax: 513 524 5409
Scheduling: 513 524 5555
Contact: 513 524 5692
or 513 524 5691

YOUR BLOOD SUGAR LOG – WEEK OF / / **to** / / **mg/dL BEFORE meals**
My target blood sugar ranges: mg/dL **to** mg/dL **mg/dL 2 HOURS AFTER meals**

	BLOOD SUGAR AT BREAKFAST		FOOD/CARB	MEDICATION/ DOSE		BLOOD SUGAR AT LUNCH		FOOD/CARB	MEDICATION/ DOSE		BLOOD SUGAR AT DINNER		FOOD/CARB	MEDICATION/ DOSE		BLOOD SUGAR BEFORE BEDTIME	
	Pre-meal	Post-meal		Pre-meal	Post-meal	Pre-meal	Post-meal		Pre-meal	Post-meal	Pre-meal	Post-meal		Pre-meal	Post-meal		
M																	
	COMMENTS																
T																	
	COMMENTS																
W																	
	COMMENTS																
TH																	
	COMMENTS																
F																	
	COMMENTS																
SA																	
	COMMENTS																
SU																	
	COMMENTS																

mg/dL BEFORE meals

mg/dL 2 HOURS AFTER meals

	BLOOD SUGAR AT BREAKFAST		FOOD/CARB	MEDICATION/ DOSE	BLOOD SUGAR AT LUNCH		FOOD/CARB	MEDICATION/ DOSE	BLOOD SUGAR AT DINNER		FOOD/CARB	MEDICATION/ DOSE	BLOOD SUGAR BEFORE BEDTIME	
	Pre-med	Post-med			Pre-med	Post-med			Pre-med	Post-med				
M														
	COMMENTS													
T														
	COMMENTS													
W														
	COMMENTS													
TH														
	COMMENTS													
F														
	COMMENTS													
SA														
	COMMENTS													
SU														
	COMMENTS													

Glossary

Blood glucose or blood sugar – The amount of a sugar called glucose in the blood. Normal blood sugar is between 70 and 180 mg/dl.

Carbohydrates – Food group consisting of starchy and sugary foods, both naturally sweet foods, such as fruit, and foods to which sugar has been added. Carbohydrates are changed to glucose in the digestive tract. 15 grams of carbohydrates equals one carbohydrate serving.

Cholesterol – A waxy, fat-like substance used by the body to build cell walls. If too much is present, it can build up and block arteries.

Diabetes – A group of diseases that results from too much sugar in the blood.

Diabetic ketoacidosis (DKA) – A health emergency in which the body does not have enough insulin and cannot break down sugar. Without enough insulin, your body begins to break down fat as fuel. This process produces a buildup of acids in the bloodstream called ketones.

Diabetologist – A doctor that specializes in diabetes care.

Endocrinologist – A doctor who specializes in diabetes and how hormones work in the body.

Fasting blood sugar – A blood sugar that is checked after you have not eaten for at least eight hours.

Glucagon – A hormone that quickly raises blood glucose levels.

Glucose – A simple sugar needed by the body for energy. Carbohydrates are digested to glucose.

Glucose meter – A machine that shows the amount of sugar in the blood using a small drop of blood.

Hemoglobin A1C – A blood test that shows the average blood sugar level for the past two to three months.

Hormone – A chemical produced in the body that acts as a signal for another part of the body to produce a particular response.

Hyperglycemia – A condition in which there is too much glucose in the blood. Usually defined as a blood sugar level greater than 180 mg/dl.

Hyperosmolar Hyperglycemic Syndrome (HHS) A health emergency most often seen in older persons in which high blood sugar levels result from lack of insulin. HHS is usually brought on by something else, such as an illness or infection. If HHS continues, the loss of too much body fluid through frequent urinating, sweating, diarrhea or vomiting may lead to seizures or coma.

Hypoglycemia – Blood sugar that is lower than the normal range. Usually defined as a blood sugar less than 70 mg/dl.

Hypoglycemia unawareness – When a diabetic does not have symptoms of low blood sugar even though his blood sugar is less than 70 mg/dl.

Impaired fasting glucose – The condition in which a blood sugar obtained at least eight hours after the last time you ate is high (100 to 126 mg/dl) but lower than the blood sugar level used to diagnose diabetes.

Impaired glucose tolerance – The condition in which a blood sugar obtained two hours after drinking a sweet liquid during an oral glucose tolerance test is high (140 to 199 mg/dl) but lower than the blood sugar level used to diagnose diabetes.

Insulin – A hormone produced by the pancreas that helps your body's cells use glucose.

Insulin resistance – Insulin does not work effectively in the body to reduce blood sugar, resulting in high blood sugar. It is one of the causes of high blood sugar in type 2 diabetes and gestational diabetes.

Ketones – They are produced when the body burns fat for energy or fuel and when there is not enough insulin to help your body use sugar for energy. Without enough insulin, glucose builds up in the blood. Because the body is unable to use glucose for energy, it breaks down fat instead.

Lactic acidosis – A condition in which acid builds up in the blood stream because the tissues are not getting enough oxygen.

Lancet – A device that uses a tiny needle to prick the skin for a drop of blood.

Oral glucose tolerance test – A series of blood sugar checks taken before and after drinking a glucose containing liquid. This test is most often used to diagnose gestational diabetes.

Pancreas – An organ located behind the stomach that produces insulin and other hormones and digestive enzymes.

Postprandial blood sugar – A blood sugar measured after you eat.

Preprandial blood sugar – A blood sugar measured before you eat.

Protein – Food group consisting of meats, poultry, fish, eggs and nuts.

Random blood sugar – A blood sugar that is checked regardless of when you last ate.

Triglycerides – Building blocks of fats.



Bethesda North and Good Samaritan Hospitals
have been awarded the Joint Commission Gold
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