

# Your guide to living with diabetes

Diabetes is a disease that causes high blood sugar (glucose) because your body can't use sugar normally. Over time, having too much sugar in your blood can cause other serious health problems.

This guide has topics to help you learn about and manage your diabetes. A member of your healthcare team will review this guide with you and give you other handouts to keep track of your diabetes

# In this guide, you'll learn:

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#### What is diabetes?

Diabetes is a disease where your body can't use blood sugar (glucose) normally. **Blood glucose** is your body's main source of energy and comes mainly from the food you eat. You get high blood sugar because your body doesn't make enough insulin or use insulin well. **Insulin** is a hormone made by your pancreas that helps glucose from food get into your cells for energy.

#### There are different types of diabetes and each has a different cause:



In **type 1 diabetes**, your pancreas makes little or no insulin. It used to be called juvenile diabetes or insulin-dependent diabetes. There is no way to prevent or cure type 1 diabetes.



In **type 2 diabetes**, your body makes insulin but doesn't use insulin the way it should – your cells resist (block) insulin. It used to be called adult-onset diabetes or non-insulin-dependent diabetes. You are more likely to get type 2 diabetes if you are overweight or someone else in your family has it.

If your blood sugar levels are higher than normal but not high enough to be type 2 diabetes, you have **prediabetes**. It is important to manage it to prevent type 2 diabetes.

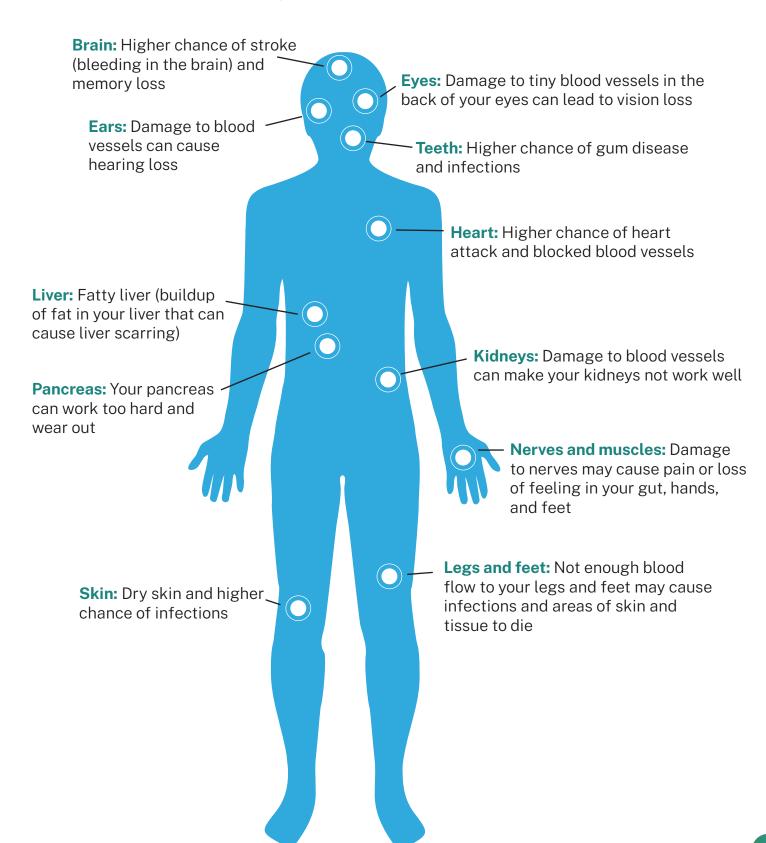


**Gestational diabetes** may happen in a person who is pregnant. During pregnancy, changes in hormone levels cause your cells to not use insulin the way they should. It usually goes away after childbirth. It is important to manage it to have a healthy pregnancy and healthy baby.

Type 1 diabetes  Type 2 diabetes  Gestational diabetes  Notes from or questions for my doctor	Γhe type of diabetes I have is:	My current A1C is:
Gestational diabetes	Type 1 diabetes	
	Type 2 diabetes	
Notes from or questions for my doctor	Gestational diabetes	
	Notes from or questions for my docto	or

# Why is it important to manage diabetes?

Over time, having too much sugar in your blood can damage blood vessels and cause other serious health problems:



# How can I manage my diabetes?

The goal of managing diabetes is to keep your blood sugar within a healthy range. Many things affect your blood sugar levels, such as what you eat, how active you are, and your medicines. The rest of this guide shares ways to manage your diabetes.



# Measure and track your blood sugar levels

There are 2 ways to measure your blood sugar:

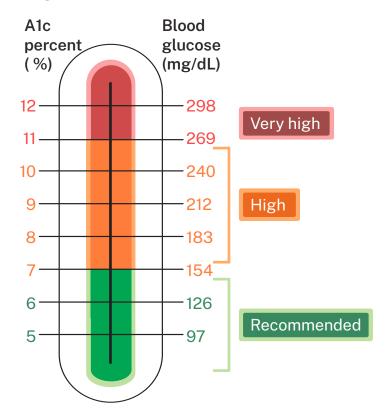


# Hemoglobin A1c or A1C:

Your doctor will do this blood test to measure your average blood sugar levels over the last 2 or 3 months. Usually, your A1C should be less than 7%.

Ask your doctor what your A1C number should be.

My A1C goal

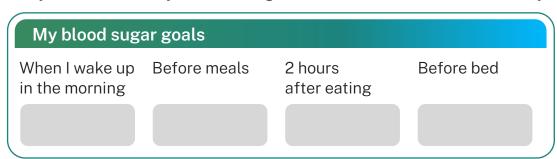




**Tests of your current blood sugar level**: You use a device to check your blood sugar at certain times of the day. Most adults who are not pregnant should aim for these blood sugar levels:

- **Before eating**: Between 80 130 mg/dL
- 2 hours after the first bite of food: Less than 180 mg/dL

Ask your doctor what your blood sugar should be at different times of day.



# How can I check my blood sugar at home?

There are 2 types of devices:



**Blood glucose meter (glucometer)**: This uses a fingerstick device called a lancet and test strips to measure your blood sugar using a small drop of blood. It measures your blood sugar at that point in time. There are many brands to choose from.



**Continuous Glucose Monitor (CGM)**: This uses a device (sensor) that you wear all the time to measure your blood sugar every few minutes. The sensor on your body sends your blood sugar level to a receiver or app on your phone. It can show you patterns in your blood sugar throughout the day. Currently, there are 4 CGMs available:

- Dexcom
- Guardian™ Connect by Medtronic
- FreeStyle Libre
- Eversence by Senseonics



# Tips for checking your blood sugar



If you use a blood glucose meter, wash your hands with soap and water and dry them before checking your level. Dirt, food, or lotion on your skin can cause inaccurate results.



If you use a CGM, follow the instructions carefully.



If you often have blood sugar levels below 70 mg/dL, call your doctor. They may adjust your medicine dose or can help find the reason for low blood sugar.



If you are sick, check your blood sugar levels more often. Ask your doctor for help to create a "Sick Day Plan" (see 20).



Go to pages 18 and 19 for how to treat a high or low blood sugar level.

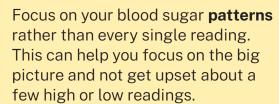
# How can I keep track of my blood sugar levels?

Keep a log of your blood sugar levels, including:

- Paper logs
- An app on your smartphone, such as On Track Diabetes, mySugr, or Glucose Buddy
- A computer program that comes with your device, such as with your CGM

Along with your blood sugar levels, keep track of this information using the paper log or app:

- Type and amount of food you ate
- Amount and type of activity
- Stress levels



For every doctor visit, bring your blood sugar log or download a report from the app or computer program you use to track it. Your doctor will review your log to:

- Look for patterns in your blood sugar levels and find the cause
- · Decide on ways to better control your blood sugar



#### Take your medicine as instructed

You may need to take more than one medicine to:



Keep your blood sugar within a healthy range



Lower your chance of diabetes-related problems, such as to keep your heart, eyes, and kidneys healthy Take all of your medicines as your doctor instructed - at the right time and the right dose (amount).

Talk with your doctor to understand each of your medicines.



#### **Medicines for type 2 diabetes**

If you have type 2 diabetes, you may need more than one diabetes medicine. There are many type 2 diabetes medicines, and each works in a different way some are a pill taken by mouth, and some you inject under your skin.

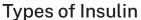
#### Insulin

If you have type 1 diabetes, you must take insulin because your body doesn't make it. If you have type 2 diabetes, you may also take insulin.

The most common way to take insulin is with a needle and syringe with meals and snacks. Other ways to take insulin include:

- Insulin pen: A pen-like syringe preloaded with insulin
- **Insulin pump**: A device worn all the time that gives you insulin continuously under your skin through a plastic tube attached to your body





You may need to take more than one type of insulin, that are different in these ways:

- **Onset**: How long it takes for insulin to get in your bloodstream and start to lower blood sugar
- **Peak time**: How long it takes for insulin to work the best to lower blood sugar
- **Duration**: How long insulin continues to lower blood sugar, because the effect of insulin wears off over time

Some types of insulin cost more than others, so talk about your options with your doctor if you're concerned about cost.

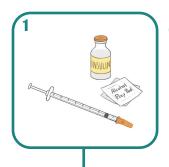
This table shows the most common types of insulin:

Types of insulin	Onset (after injection)	Peak time (after injection)	Duration
Rapid-acting insulin <ul><li>aspart (NovoLog)</li><li>gluslisine (Apidra)</li><li>lispro (Humalog or Admelog)</li></ul>	About 15 minutes	About 1-2 hours	About 5 hours
Short-acting insulin • regular (Humulin R or Novolin R)	30-60 minutes	2-3 hours	5-8 hours
Immediate-acting insulin  NPH (Humulin N or Novolin N)	About 2-4 hours	4-10 hours	12-18 hours
Long-acting insulin	About 2-6 hours	None – it acts the way your body normally makes insulin	20-42 hours



# How to draw insulin into a syringe

Your doctor or diabetes educator will teach you how to give yourself an insulin injection. Use this as a reminder of the steps:

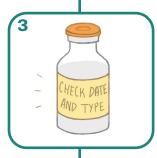


#### Gather your supplies:

- a. Insulin vial
- b. Syringe with needle
- c. 2 alcohol wipes
- d. Container for used needles and syringes

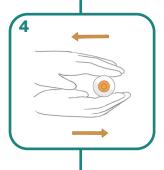


Wash and dry your hands.



#### Check the insulin vial:

- a. Check the label to make sure it is the right insulin and that it has not expired.
- b. Look for floating particles or cloudiness in the insulin. (If your insulin was clear when you bought it, and now it's cloudy or has floating particles, do not use it. If your insulin was cloudy when you bought it, it should look cloudy when you use it.)



If using intermediate-acting insulin (N or NPH), roll the vial between the palms of your hands to mix it. Do not shake the vial. It should look cloudy. If using clear insulin (fast-acting or long-acting), you do not need to mix it.



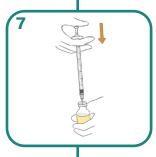
#### Prepare the insulin vial.

If the insulin vial has a plastic cover, take it off. Use an alcohol wipe to clean the rubber top of the insulin vial. Let it dry. Do not blow on it.



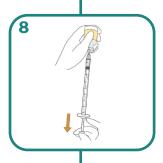
#### Pull air into the syringe.

- a. Take the cap off the needle. Do not to touch the needle to keep it clean.
- b. Pull back the plunger of the syringe to the dose of insulin you will give yourself. This puts as much air in the syringe as your dose of insulin.



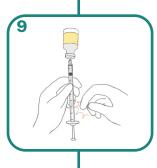
#### Inject air into the vial of insulin.

- a. Hold the syringe like a pencil and insert the needle into the rubber stopper on the top of the insulin vial
- b. Push the plunger down until all of the air is in the bottle this helps keep the right amount of pressure in the vial so you can draw up the insulin more easily



#### Draw up insulin into the syringe.

- a. With the needle still in the vial, turn the vial and syringe upside down (vial above syringe)
- b. Pull back on the plunger to get the right dose of insulin into the syringe



#### Check the syringe for air bubbles.

If you see any large air bubbles, hold both the vial and syringe in one hand, and tap the syringe with your other hand. The bubbles will float to the top. Gently push the plunger just to push the bubbles back into the insulin vial. Then pull the plunger back down to get back to the right dose.



#### Take the needle out of the vial.

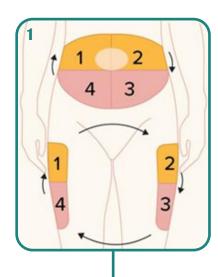
When there are no air bubbles in the syringe, take the needle out of the vial. Do not let the needle touch anything until you are ready to inject.

a. Do not mix 2 types of insulin in one syringe unless you are told to do this.

# arrith.

# How to inject insulin

Your doctor or diabetes educator will teach you how to give yourself an insulin injection. Use this as a reminder of the steps:



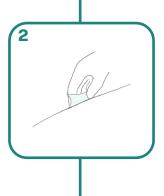
#### Choose a spot to inject insulin.

Choose a spot on your skin that you can see and reach on your:

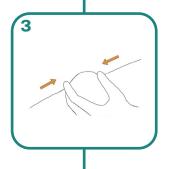
- a. Belly
- b. Thighs
- c. Butt
- d. Back of your arms

#### To choose a spot:

- Keep it 1 inch (2.5 centimeters, cm) away from scars and 2 inches (5 cm) away from your belly button
- Avoid skin that is bruised, swollen, or tender
- · Avoid skin that is lumpy, firm, or numb
- Move the spot that you inject this is called rotating sites. For example, follow a pattern to move the spot you inject, such as your belly, then arm, then thigh.

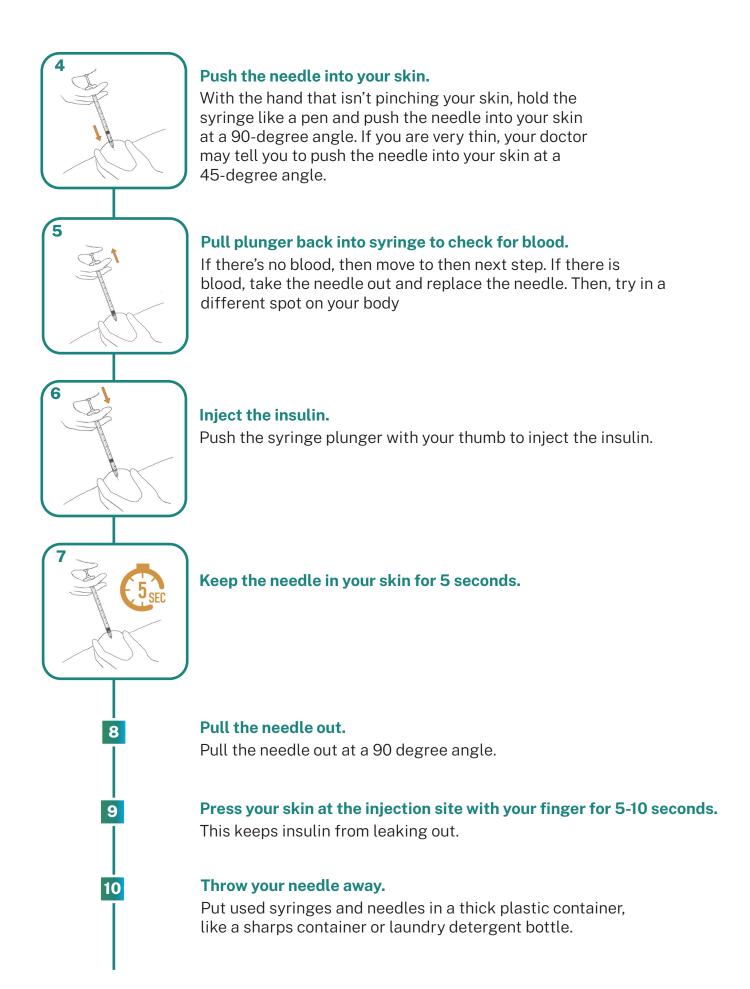


Clean your skin with an alcohol wipe and let it dry.



#### Pinch your skin.

Pinch a 1-2 inch area of skin and fat between your thumb and first finger.



#### How to store insulin

- Store insulin in a refrigerator until the first time you use the vial.
- Take it out of the refrigerator 30 minutes before you will inject it.
- When you take it out for the first time, write the date on it so you know when you need to throw it away –after you start using a vial of insulin, keep it at room temperature for 28 days, then throw away unused insulin.
- Always throw away insulin that has been at room temperature for more than 28 days.





# Tips to take your medicine as instructed



Keep an updated list of your current medicines, including prescriptions, over-the-counter medicines, herbal supplements, and vitamins. For each medicine, include:

- · Name of the medicine
- Dose you take
- Time you take it



Fill your prescription right after your appointment. If you don't understand or forget what the medicine is for, ask your pharmacist when you pick it up. You can also ask your pharmacist about costs and getting refill reminders.



Create a daily routine to take your medicines at the right time, and ask your doctor or pharmacist if certain medicines can be taken together. For example, you could take your medicine everyday after dinner.



Share your medicine beliefs, concerns, and questions with your doctor.

My beliefs, concerns, and questions
Write down things you want to tell or ask your doctor here:



# Follow a healthy eating plan

A healthy eating plan can help keep your blood sugar in a healthy range and keep you at a healthy weight. A healthy eating plan includes:

- 3 diabetes-friendly meals each day, about 4 to 5 hours apart
- Small snacks between meals, if you feel hungry
- A variety of whole foods, such as vegetables, fruits, and plant foods instead of packaged foods
- > Whole grains, such as whole wheat, brown rice, or oats, instead of refined or enriched grains like white rice and white flour
- Portion sizes to avoid overeating, such as by using the Plate Method on page 15
- > Water or a zero-calorie drink, like sparkling water, diet soda, or unsweetened tea



#### Track your carbs

Carbs (or carbohydrates) are your body's main source of energy, and affect blood sugar the most. There are 3 types of carbs:

- Sugars, which include:
  - Natural sugar like in fruit and milk
  - Added sugar in soda and other packaged foods
- Starches. which include:
  - · Grains, such as wheat, rice, and oats
  - Starchy vegetables, such as corn, peas, and potatoes
  - Legumes, such as beans and lentils
- **Fiber**, which is the part of plant foods that isn't digested and helps you stay full

Sugars and starches raise your blood sugar, but fiber doesn't.

Your goal is to eat about the same amount of carbs at each meal, which will help you control your blood sugar levels. Keeping track of how many carbs you eat (counting carbs) can help you eat the right amount.

#### How many carbs should I eat?

There is no easy answer to this—the right amount for you depends on your gender, age, weight, activity level, and other things. Ask your doctor how many carbs you should have at each meal and snack.

#### How do I count carbs?

Carbs are measured in grams. For diabetes meal planning, 1 carb serving is about 15 grams of carbs.

#### **Eat protein with carbs**

Protein helps your body build tissue, bones, and muscles. Eating protein with carbs slows down how quickly your blood sugar rises. Choose lean proteins, such as:

· Chicken · Fish · Eggs · Tofu

Turkey
 Lean meats
 Low-fat cheeses

#### How much protein should I eat at a meal?

Each meal should usually include about 3 ounces of protein—which is about the size of a deck of cards. Everyone is different, so ask your doctor how much protein you should eat.

#### **Healthy diabetes-friendly snacks**

Snacks can be part of your healthy eating plan! Limit your snacks to about 1 to 2 servings of carbs (about 15-30 grams), and pair it with a good source of protein. Examples of carb and protein snacks include:

- 1 slice of whole wheat bread + 1 tablespoon of peanut butter
- ½ cup of canned fruit in water + ¼ cup of low-fat cottage cheese
- Small container of low-fat plain yogurt
- 34 cup unsweetened cereal + 1 cup skim milk

#### Watch the amount of alcohol you drink

Alcohol can make it harder to control your blood sugar. Alcohol can only be part of your meal plan if your blood sugar is in good control.

If your doctor says you can have alcohol once in a while, here are tips to drink safely:

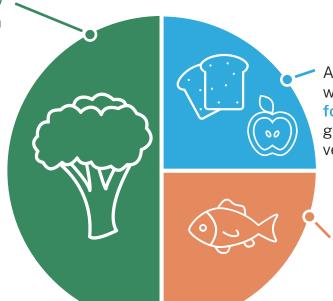
- Always have a meal before you drink alcohol (it can be dangerous to drink on an empty stomach if your blood sugar is already low or you take insulin or certain diabetes medicines).
- Mix hard alcohol with club soda, diet soda, or sugar-free mixers. Avoid mixed drinks made with regular soda, fruit juice, or sugary mixers.
- Limit to 1 drink a day if you were born a woman, and 2 drinks a day if you were born a man. Examples of 1 drink of alcohol:
  - 4 ounces of dry wine (1/2 cup)
  - 12 ounces lite beer (1 can of beer)
  - 1.5 ounces hard liquor (1 shot glass)

#### Make a diabetes-friendly plate at meals

The Plate Method is a good way to plan your meals. Start with a 9-inch plate and fill:

Half your plate with non-starchy vegetables, such as:

- Broccoli
- Cauliflower
- Peppers
- Tomatoes
- Greens like kale or collard
- Okra
- Squash like zucchini
- Onions
- Carrots
- Beets
- · Green beans
- Cabbage





A quarter of your plate with carbohydrate foods, such as whole grains, fruit, starchy veggies, or low-fat dairy

A quarter of your plate with **lean protein**, such as chicken or turkey

#### How to read nutrition labels

For packaged foods, read the Nutrition Facts to know how many carbs you are eating.

- The **serving size** tells you how much of the food the nutrition label is based on. For example, if you eat 2 serving sizes, you need to double the number of carbs on the label.
- Stay under 50-60 grams of total fat per day.
   Limit saturated fat to 13g or less a day, and avoid foods with trans fat.
- Eat less than 2,300 mg of **sodium** (salt) per day. If you have high blood pressure, aim for less than 1,800 mg per day.
- Check the total carbohydrate in 1 serving.
   Choose foods with more than 3 grams of dietary fiber per serving.
- Total sugars includes the amount of sugar added to the food during processing. Limit added sugars to 6 teaspoons or less a day if you're a woman, and 9 teaspoons or less a day if you're a man.

#### **Nutrition Facts** 4 servings per container Serving size 1 cup (180a) **Amount per serving Calories** % Daily Value\* Total Fat 12g 14% 10% Saturated Fat 2g Trans Fat 0g 3% **Cholesterol** 8mg Sodium 210mg 9% **Total Carbohydrate 34g** 12% 25% Dietary Fiber 7g Total Sugars 5g 8% Includes 4g Added Sugars Protein 11g Vitamin D 4mcg 20% Calcium 210mg 16% Iron 4mg 22% Potassium 380mg 8% \*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.



#### Be active

Being active means any movement that uses more energy than sitting—walking, dancing, gardening, and vacuuming count! Talk with your doctor to create a plan to be active, especially if you want to start a new exercise routine. Most people should:



**Be active for about 2.5 hours each week** -this can be 30 minutes per day over 5 days



Do strength training 2-3 times each week, such as:

- Lifting weights
- Using resistance bands
- Stretching
- Pilates or yoga

#### Being active:

- > Improves your body's ability to use insulin
- > Lowers your stress
- Helps lower the chance of diabetes-related problems, such as a heart attack and nerve damage
- > Helps you keep a healthy weight
- > Improves your mood and energy level



#### Tips to be more active



Pick an activity you enjoy-you're more likely to stick to it if you like it!



Think about barriers – what might get in the way of you doing that activity and what are some ways to overcome it?



Make a plan for when you will be active and for how long-for example, plan to take a 10-minute walk after dinner



Create a goal for the week and reward yourself at the end of the week for meeting your goals – for example, choose a nonfood reward, such as clothing, books, or a movie night

My plan to be mor	e active	
Activity	How long I will do it	When I will do it



# Talk with your doctor about your emotions

It's normal to feel upset or depressed from managing diabetes all day, every day, and from the fears of long-term health problems. These feelings can make it harder to manage your diabetes.

Talk with your doctor if you're feeling stressed or going through tough times—they can help. Tell your doctor if you:

- > Feel overwhelmed
- > Have negative thoughts about yourself
- Avoid doctor visits
- > Have little interest or don't find pleasure in your activities
- Sleep most of the day or are not able to sleep
- Feel like you can't take care of yourself
- Have no interest in eating or are overeating



When you are ready to talk with your doctor:

- Tell them what is causing you the most concern about caring for yourself, such as your medicines, emotions, or meal planning
- Describe your thoughts or feelings, such as confused, angry, curious, worried, frustrated, depressed, hopeless, or helpless



Learn more about diabetes and mental health at https://www.diabetes.org/healthy-living/mental-health



# Lower the chance of diabetes-related health problems

Diabetes raises your chance of having other serious health problems. Along with the other steps in this guide, you can lower your chance of other health problems by taking these steps:



Schedule and go to your regular medical checkups.

- Weight at every visit
- A1C test every 3 months
- Blood pressure checks at every visit
- Blood test every year to measure:
  - How well your kidneys are working to filter your blood
  - Cholesterol (blood fats), including: HDL (good cholesterol), LDL (bad cholesterol), and triglycerides (blood fats that come from food and are made by the body)
- Eye checkup every year
- · Dental exam every 6 months
- Foot exam every visit



Get screened for sleep apnea



Don't smoke or vape-if you smoke, ask your doctor for help to quit



Brush and floss your teeth everyday



Get all recommended vaccines, including:

- Flu shot every year
- COVID-19 vaccine and booster
- · Pneumonia vaccine
- Hepatitis B vaccine



Check your feet daily for redness or open sores

Your healthcare team may be experts on diabetes, but you are an expert on you!

You can take an active role in your care by taking the steps in this guide to manage your diabetes and stay healthy in the long run.

# What to do when you...



# Have a high blood sugar level (hyperglycemia)

A high blood sugar level is above 200 mg/dL or higher than the goal your doctor set.

#### How to treat high blood sugar:

- · Get active to lower your blood sugar, such as to go for a walk
- If you are on insulin, take the correction dose of insulin as your doctor instructed. If you don't have a correction dose, ask your doctor.
- If your blood sugar is above 240 mg/dL for more than 2 checks in a row, call your doctor



- Check your urine for ketones by following the instructions on your box of ketones test strips
- If the test strip shows you have ketones, call your doctor. Do not be active. Ketones are chemicals your body makes when it breaks down fat to use for energy. Your body breaks down fat when there isn't enough insulin to get sugar into your cells for energy. Too many ketones can make you feel sick.
- This may be part of your "sick day plan" see page 20

#### Signs of high blood sugar include:



Feeling thirsty



Urinating (peeing) more than usual



Blurry vision



Feeling weak and tired



Headache

#### Causes of high blood sugar include:

- Eating too much food
- Feeling too much stress
- > Not taking enough insulin
- > Higher levels of hormones

Being sick



# Have a low blood sugar level (hypoglycemia)

#### A low blood sugar level is below 70 mg/dL or

lower than the goal your doctor set.

#### How to treat low blood sugar

Follow the 15-15 treatment rule

#### 15-15 treatment rule



Have 15 grams of carbs to raise your blood sugar, such as 4 ounces of juice or regular soda



Check your blood sugar after 15 minutes. If it's still below 70 mg/dL, have another 15 grams of carbs.



Repeat steps 1 and 2 until your blood sugar is at least 70 mg/dL. Check your blood sugar again in about 1 hour. You may need to eat a small meal or snack to make sure your blood sugar doesn't go too low again.

If your blood sugar is **lower than 54 mg/dL**, this could be dangerous and you may pass out. You need to treat this low blood sugar right away using the 15-15 treatment rule.

#### Signs of low blood sugar include:



Changes in vision



Feeling shaky, nervous, or anxious



Sweating, chills, and clamminess



Fast heartbeat



Feeling hungry



Getting irritated or losing patience easily



Feeling lightheaded, dizzy, or sick, to your stomach

#### Causes of low blood sugar include:

- > Eating too little carbohydrates
- (>) Skipping meals
- > Taking too much insulin or other diabetes medicines
- Losing weight and not having your medicine adjusted
- Being active without eating enough



# Create a plan when traveling or sick



# Tips when traveling



Make a list to pack everything you need to manage your diabetes, including:

- All your diabetes medicines, such as insulin and pills
- All your testing supplies, such as glucose meter, test strips, and lancets
- A diabetes medical ID (card, necklace, bracelet) and your doctor's contact information
- Snacks or fast-acting sugar to treat low blood sugar



Pack twice as many supplies as you'd normally need, in case you are gone longer than you plan.



Pack your supplies in your carry-on luggage.



Keep your supplies in the original package with the prescription label. You may need to tell airport security that you have diabetes supplies.

#### Tips to create a sick day plan

When you are sick, your blood sugar may be higher than usual. Ask your doctor to create a "Sick day plan" with you. This may include:



Changes in your dose of medicine to control your blood sugar



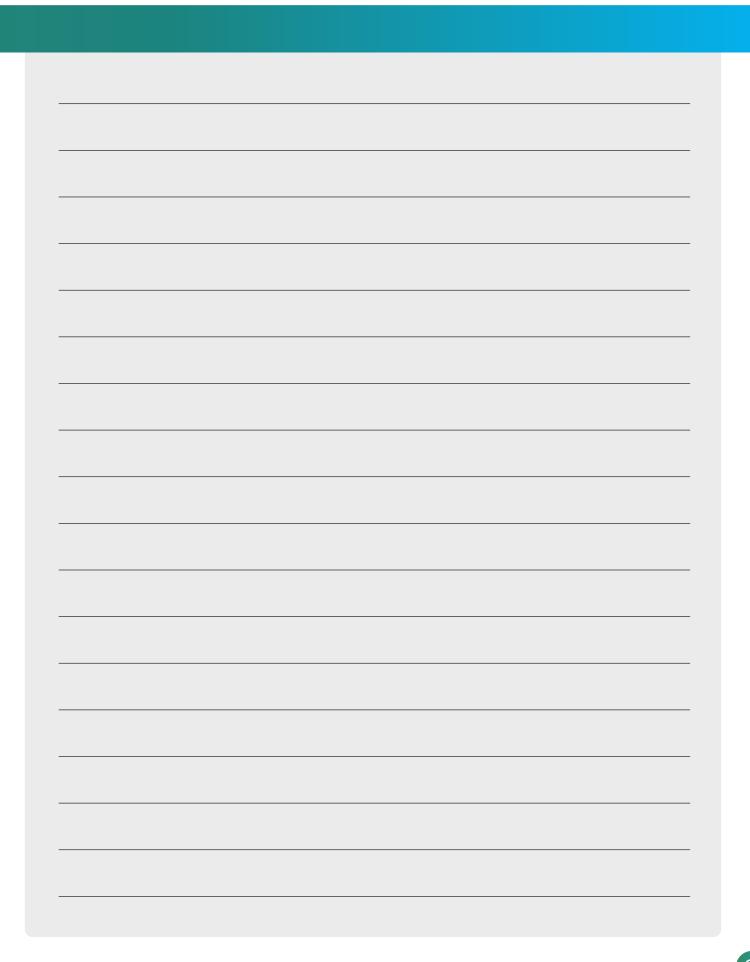
Checking your blood sugar more often



Drinking plenty of sugar-free and caffeine-free fluids, especially water

Sick day plan
Create a sick day plan with your doctor and write it down here:

# Notes



This guide is part of a long-term program by Nashville General Hospital Foundation to help our neighbors get information to make better healthcare decisions. For more topics you might find useful – use the QR codes below or visit the websites:

For general topics: bit.ly/NGHF-FYGH



For diabetes specific topics: bit.ly/NGHF-DG



#### Acknowledgements

The Nashville General Hospital Foundation wishes to acknowledge the insight and efforts of:

- Adriene Sanders, PharmD, CDCES
- Theresa Khan, MSN, APN, FNP-BC
- Emma Liu, MPH, RD, LDN
- Lilia C. Medina, RN BSN
- Shaherazade Khan

- Tonya Craven, RDN
- Khalela Hatchett, MPH
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- Vernon Rose, NGHF Executive Director

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Name	Phone	Who this person is
Name	Phone	Who this person is

Published: February 2022







