

Living with diabetes

step by step



You just found out that you have diabetes. We realize this can be an emotional time for you. We hope the information contained here will help.

This is a beginners' guide to diabetes. It will outline some basic steps to guide you through the healthy lifestyle changes that can help you manage your blood glucose. You can find classes and resources at Kaiser Permanente to help you learn about diabetes.

Diabetes self-care is an ongoing process. A healthy lifestyle will help lower the risk for medical problems over the rest of your life. You can live a long and healthy life with diabetes.



Table of contents

Kaiser Permanente programs / who to call.....	4
What is diabetes?	5
Types of diabetes	5
How do I know I have diabetes?.....	6
Hemoglobin A1c (HbA1c)	6
Measuring diabetes management.....	7
Using a OneTouch meter from Kaiser Permanente	8
Sharps disposal	9
Low blood glucose (hypoglycemia).....	10
High blood glucose (hyperglycemia)	11
Food choices: What should I be eating?.....	12
Physical activity	13
Commonly prescribed diabetes medications.....	14
Managing diabetes when you are ill.....	14
Potential long-term complications.....	15
Heart health	16
Alcohol and diabetes	17
Emotional aspects of diabetes.....	17
Diabetes and pregnancy.....	18
Resources.....	19

Kaiser Permanente programs / who to call

Diabetes programs

Diabetes Care Management

Work one-on-one with your personal doctor's diabetes care manager (pharmacist or nurse) to improve your diabetes control.

Your diabetes care manager can:

- Teach you more about diabetes management
- Review your blood sugars
- Initiate and adjust your medications
- Order and monitor labs
- Connect you with other helpful resources

You need a referral from your doctor to work with a diabetes care manager. Call or email your doctor via **kp.org/messages** to ask for a referral

Nutrition Diabetes Class— webinar

Learn more about how nutrition can impact your type 2 diabetes in this webinar led by a registered dietitian.

You need a referral from your doctor to participate in this class. Call or email your doctor via **kp.org/messages** to ask for a nutrition department referral.

Thinking about a healthier lifestyle?

Wellness Coaching by Phone offers support through one-on-one phone or video calls with a health coach as you discuss:

- Your health goals
- The process of change
- Ideas to help jump-start our motivation
- Tools to help overcome common obstacles
- Options for new resources and next steps

Call 503-286-6816 or 1-866-301-3866, option 2, to learn more and enroll.

Other offerings

Health Engagement and Wellness Services also offers other classes and resources that can help people who are learning to live a healthier life with diabetes.

To learn more, please find our *Healthy Living catalog* online at **kp.org/healthengagement/catalog**.

See the inside back cover of this booklet for related resources.

What is diabetes?

There are different types of diabetes.

The major problem with any type of diabetes is that the glucose (sugar) level in your blood is higher than normal.

This happens when your pancreas does not make as much insulin as your body needs (or stops making insulin entirely), or because your body is not able to use the insulin efficiently.

What is insulin?

Insulin is a hormone made by the pancreas.

Insulin helps move glucose from your bloodstream into your body's cells, where it is used for energy. When you have diabetes, the glucose gets "trapped" in your bloodstream.

Types of diabetes

There are 3 main types of diabetes:

- **Type 1 diabetes, or "insulin-dependent diabetes"**
Requires insulin injections because the pancreas produces little or no insulin.
- **Type 2 diabetes**
The body produces too little insulin or cannot use the insulin it produces. This is called "insulin resistance."
- **Gestational diabetes**
This type affects women in the second or third trimester of pregnancy. Blood glucose usually returns to normal levels after the baby is born. Gestational diabetes increases the risk for developing type 2 diabetes. Regular follow-up to check for diabetes is very important.



How do I know I have diabetes?

There are 3 different tests that are used to diagnose diabetes. Usually these blood tests are repeated to confirm the diagnosis. Here are the American Diabetes Association’s guidelines for these tests.



Fasting plasma blood glucose

After having no food or liquids (except water) for 8-12 hours, blood is drawn to check your glucose level.

Result	Diagnosis
Lower than 100 mg/dl	Nondiabetic
100 to 125 mg/dl	Prediabetes
126 mg/dl or higher	Diabetes, if confirmed with a second fasting test

Hemoglobin A1c (HbA1c)

No fasting is needed.

Result	Diagnosis
Less than 5.7%	Nondiabetic
5.7 to 6.4%	Prediabetes
6.5% or greater	Diabetes, if confirmed with a second HbA1c test

Random plasma blood glucose

No fasting is needed.

Result	Diagnosis
Less than 140	Nondiabetic
140-199	Prediabetes
Greater than 200 or greater	Diabetes

Measuring diabetes management

The HbA1c measures your average blood glucose level over a 3-month period of time.

If your HbA1c is	Your average blood glucose is
6.0-6.9%	120-149
7.0-7.9%	150-179
8.0-8.9%	180-209
9.0-9.9%	210-239
10.0-10.9%	240-269
11.0-11.9%	270-300
12.0-12.9%	301-330
13.0-13.9%	331-360
14.0-14.9%	361-390

The HbA1c does not measure moment-to-moment changes.

How is the HbA1c test different from my home blood glucose tests?

Your blood glucose meter measures your blood glucose level at a moment in time. This level changes constantly based on the food you eat, your activity level, and your emotional well-being.

The HbA1c indicates the average blood glucose over the last 3 months. An HbA1c below 7.0% is recommended for most people. This indicates a lower risk of long-term complications due to diabetes.

Every point you can take off your HbA1c reduces your risk of long-term complications.

Usually the HbA1c is repeated every 3-6 months.

What the results mean

If your HbA1c is	Your risk for long-term complications
Lower than 7.0%	Low
7.0-8.0%	Medium
8.0% or greater	High



Why monitor my blood glucose?

Monitoring your blood glucose helps you manage your diabetes day to day. You can see how the changes you are making are affecting your blood glucose. Ask your doctor if you should be testing your blood glucose, how often you should be testing, and what your blood glucose targets should be.

What do I need to pick up at the pharmacy?

- Blood glucose kit: contains meter, lancing device.
- Test strips (typically 1 bottle of 50 strips per month).
- Control solution.
- Lancets (needles).
- Blood glucose diary.
- Sharps container.

Using a OneTouch meter from Kaiser Permanente

You may already have a meter, or you may want to get a meter from Kaiser Permanente. Your personal doctor needs to order a meter for you if you want one. Kaiser Permanente uses OneTouch glucose meters. You may have a OneTouch Ultra 2 or a OneTouch Verio Flex meter. Kaiser Permanente supports both models. If you need help setting up your meter or using it, you can talk to a pharmacist when you pick up your meter. You also can talk with a diabetes educator at 503-286-6816, option 1, or contact OneTouch directly.

Help with a OneTouch meter

Go to onetouch.com/products. You can also call 1-888-567-3003 for help in English or 1-888-567-3010 for help in Spanish.

Blood glucose target ranges:

Fasting (or before meals)	80-130 mg/dl
2 hours after a meal	less than 180 mg/dl
At bedtime	100-150 mg/dl

Your doctor may give you different target ranges. They can vary based on your age, other medical conditions, etc.

If you write your blood glucose readings in a diary or log, it will help you track your daily patterns. You can use this information to make decisions about food, activity, and medications.

You can use the “comments” section to record events you think might be related to your blood glucose level.

Date	Insulin units taken				Comments (food, activity, illness)
	Type	a.m.	p.m.	Bedtime	
M 10/5					
T 10/6					
W 10/7					Dinner: Hamburger and salad
Th					
F					
Sa					
Su					

Breakfast		Lunch		Dinner		Bedtime
Before	After	Before	After	Before	After	
160				210		
149						204
				199	260	
181						

Sharps disposal

There are laws regarding the safe disposal of sharps (lancets and syringes). It is illegal to throw your sharps into your household trash. Disposal laws differ from state to state.

Most pharmacies, including Kaiser Permanente, sell sharps-disposal containers.

Please do not bring used (full) sharps-disposal containers to Kaiser Permanente pharmacies. Kaiser Permanente does not accept full containers.

For the most current information regarding safe sharps disposal in your area, contact:

- Your residential waste-hauling company
- Metro Transfer Station
(Portland) 503-234-3000
- Central Transfer and Recycling Center
(Vancouver) 360-256-8482
- Waste Control Transfer Station
(Longview) 360-425-4302
- Marion County Department of Solid Waste Management
(Salem) 503-588-5169

Low blood glucose (hypoglycemia)

Low blood glucose is any blood glucose less than 70 mg/dl, whether or not symptoms occur. Symptoms may result when blood glucose drops too quickly.

Early symptoms

- Shaky.
- Hungry.
- Headache.
- Weak.
- Irritable.
- Clammy (cold sweat).
- Light headed.
- Rapid heart rate.

Severe symptoms

- Confused thinking.
- Slurred speech.
- Staggered walking.
- Vision changes.
- Anger.

Low blood glucose can happen suddenly, and needs immediate treatment.

Causes of hypoglycemia

- Eating too little, or too late.
- Skipping meals.
- Using too much diabetes medication or insulin.
- Drinking alcohol without eating.
- Exercising more than usual.

If you believe you are experiencing hypoglycemia, or if your blood glucose is 70 mg/dl or less, treat it in the following manner:

Rule of 15's (15 grams, 15 minutes)

- Check your blood glucose if possible. If you can't test, assume your blood glucose is low.
- Eat or drink a fast-acting carbohydrate (listed below).
- Wait 15 minutes, then recheck your blood glucose.
- If your blood glucose remains 70 mg/dl or less, repeat the above steps
- If your blood glucose is above 70 mg/dl, and it is time for a meal, eat a meal. If not, eat a balanced snack.

If your blood glucose remains 70 mg/dl or less after several attempts to treat, call 911 or seek medical attention immediately.

Fast acting carbohydrates

- Fruit juice4-6 ounces
- Regular soda4-6 ounces
- Sugar packets4 packets
- Glucose tablets..... 4 tablets
- Skim milk.....6-8 ounces

Suggested snacks

- ½ meat sandwich
- 4-6 crackers with 1 ounce cheese
- 1 string cheese with small apple
- 1 tablespoon peanut butter with 4 crackers
- Hard-boiled egg with 1 slice toast

High blood glucose (hyperglycemia)

High blood glucose occurs when your blood glucose is higher than normal for you, or above your target range. It usually begins slowly. It is possible to have high blood glucose without any noticeable symptoms.

Symptoms include:

- Frequent urination.
- Increased hunger.
- Increased thirst.
- Irritability or anger.
- Blurred vision.
- Weakness.
- Tiredness.
- Frequent infections.
- Wounds that won't heal.
- Numbness and tingling in the feet.
- Itchy skin.
- Headaches.

Severe symptoms include:

- Nausea.
- Vomiting.
- Abdominal pain.
- Dizziness when you stand up.
- Rapid weight loss.
- Increased drowsiness and/or confusion.
- Unconsciousness or coma.

Causes include:

- Eating too much food – primarily carbohydrates.
- Infection, fever, illness.
- Emotional stress.
- Taking too little medication.

Treatment

- Drink fluids without sugar or calories.
- Follow your food plan when your blood glucose returns to normal.
- Take medication as directed. Do not take extra doses of your diabetes medication.
- Follow your physical activity plan when your blood glucose returns to normal.

Call your clinician if:

- You have symptoms of high blood glucose.
- Your blood glucose remains more than 240 mg/dl for longer than 24 hours.
- Your blood glucose continues to rise.

Note: Some symptoms of low blood glucose and high blood glucose are the same. If you are having symptoms, and do not know if your blood glucose is low or high (and you are unable to test), treat it like you would low blood glucose.

Food choices: What should I be eating?

All carbohydrates raise your blood glucose. It is easier to stay in your target range if you actively manage your carbohydrate intake.

But don't stop eating carbohydrates! We all need carbohydrates for energy.

Carbohydrates are found in many foods:

- Sugars/sweets (honey, syrups, candy, etc.).
- Fruits (contain fructose = fruit sugar).
- Milk/yogurt (contains lactose = milk sugar).
- Grains (pasta, bread, grains, rice, cereal).
- Starchy vegetables (potatoes, yams, peas, beans, corn, winter squash).

The plate method

The American Diabetes Association recommends:

- 30-60 grams of carbohydrates per meal, 3 meals per day, evenly spaced throughout the day.
and, if needed,
- 15-30 grams of carbohydrates per snack, 2-3 snacks per day.

Meals should also include lean protein choices, heart-healthy fats, and nonstarchy vegetables. Less processed foods are healthier choices, and tend not to "spike" your blood glucose as much.

For meal ideas, cookbooks, and recipes, visit diabetes.org (American Diabetes Association).



Physical activity



Regular physical activity can benefit people with diabetes by:

- Helping your body use its own insulin more efficiently.
- Helping the medications you take work better.
- Burning glucose more quickly, and lowering your blood glucose for hours afterward.
- Improving your blood pressure, cholesterol levels, and heart function.
- Decreasing the risk of stroke or heart attack by 35-55%.

Regular physical activity – combined with healthy food choices and appropriate medication – can really influence your blood glucose levels.

How much exercise is enough?

- Get at least 150 minutes of exercise a week, spread out through the week. Just 30 minutes of exercise, 5 days a week, will improve your blood glucose. It also will help with your muscle strength, endurance, and weight.
- Begin slowly. Increase activity gradually. Choose activities you enjoy.
- Drink extra water before, during, and after exercise.
- If you have experienced low blood glucose, check your blood glucose before you exercise, and carry snacks with you.
- Stop exercising and call your personal doctor if you have chest pain, shortness of breath, or leg pain.
- Keep a record of your exercise so you can track your progress. There are apps listed at the back of this book that can help you track your activity.

Commonly prescribed diabetes medications

Metformin (Glucophage) works in the liver to slow the production and release of glucose into the blood. It is usually taken with meals to decrease the risk of diarrhea and nausea.

Glipizide (Glucotrol) works in the pancreas to stimulate more of your own insulin production and release. It should be taken 15-30 minutes before breakfast and dinner to work most effectively. It can cause blood glucose to drop too low if not followed by a meal.

Insulin is injected in order to supplement the insulin your body is producing. If you have type 1 diabetes, you must use injected insulin. If you have type 2 diabetes, you may use insulin in addition to your oral medications, or you may use insulin alone.



Managing diabetes when you are ill

Illness, injury, or surgery can cause your blood glucose to rise.

If you are using insulin, you may need more than your usual dose when you are sick.

Speak with your health care team for medical advice when you are sick.

Check and record your:

- Blood glucose – at least every 4 hours.
- Temperature – morning and evening.
- Weight – at the same time every day.
- Level of alertness – every 4 hours.
- Urine ketones – if your blood glucose is more than 240 mg/dl and you have type 1 or gestational diabetes.

Drink fluids.

If you can eat your usual meals:

- Follow your food plan.
- Drink calorie- and caffeine-free liquids such as water, herbal tea, or sugar-free soda.
- Drink 1/2 to 3/4 cup of liquid every hour.

If you cannot eat your usual meals:

- Drink fluids with sugar, such as regular 7-Up, ginger ale, JELL-O, fruit juice, or Gatorade.
- Drink 1/2 to 3/4 cup of liquid every hour.

Potential long-term complications

High blood glucose levels over a long time can damage your body. It can lead to complications that include:

- Heart attack.
- Stroke.
- Kidney damage.
- Eye problems or blindness.
- Sexual problems.
- Numbness/pain in feet or hands.
- Dental disease.
- Foot or leg amputation.

- Limit alcohol.
- Inspect your feet daily. Look for cuts, blisters, bruises, redness, and swelling.
- Wear comfortable, well-fitting shoes (avoid going barefoot).
- Keep your immunizations current.
- Get educated about your diabetes and how to manage it effectively.

You can find support and resources at Kaiser Permanente. These include classes, online programs, and health coaching by phone. See the resources list at the back of this book for more details.

How are long-term complications of diabetes detected?

- Regular medical check-ups.
- Foot exam at every medical visit.
- Annual urine test for protein.
- Regular dental exams.
- Annual eye exams.
- HbA1c tests every 3–6 months.

Report any changes in your health to your health care team.

Good control and early intervention can dramatically reduce your risk. To help prevent long-term complications:

- Control your blood glucose levels.
- Control your blood pressure and cholesterol.
- Follow a healthy eating plan.
- Exercise regularly.
- Don't smoke.

Recommended goals for people with diabetes

- HbA1c..... less than 7.0%
- Blood pressureless than 140/90
- LDL ("bad" cholesterol)..less than 100
- HDL ("good" cholesterol)greater than 39 for men and 49 for women
- Triglycerides (blood fats)
Fastingless than 150
Nonfasting.....less than 500

Ask your doctor about your individual treatment goals.

Heart health

Heart attacks and strokes (cardiovascular disease) are among the most common long-term side effects of diabetes.

If you have diabetes, keeping your blood pressure and cholesterol (blood fats) levels within normal ranges is as important as controlling your blood glucose.



Why is my risk higher?

People with type 2 diabetes also have higher rates of:

- High blood pressure (hypertension).
- Being overweight (obesity).
- High blood fats (dyslipidemia).

To lower your risks:

- Eat a diet low in saturated fats, trans fats, and sodium.
- Get regular exercise.
- Maintain a healthy weight.
- If you use tobacco, quit.

If your doctor prescribes medications for your heart health, take them as directed. These can include low-dose aspirin, a cholesterol-lowering drug called a statin, and/or blood pressure medication.

Alcohol and diabetes

It is possible for people with diabetes to continue to enjoy moderate use of alcoholic beverages. It's important, however, to speak with your doctor about diabetes and alcohol use so that you fully understand the possible risks that alcohol could pose for your health.

Alcohol use by pregnant women (with or without diabetes) is not recommended.

Here are some important questions you may want to ask:

- Am I taking any medications that may not mix well with alcohol?
- Should I avoid alcohol because of my diabetes, or for any other health reason?
- Is my diabetes well-managed enough for me to drink alcohol?

If you decide to use alcohol, it's important to follow these guidelines:

- Have alcohol during or right after a meal – as alcohol can cause low blood glucose when taken on an empty stomach.
- Avoid alcohol after vigorous exercise – alcohol and exercise both lower blood glucose levels.
- Drink in moderation (not more than 1 drink per day for women, and 2 drinks per day for men).
- One alcohol serving is equal to 1.5 ounces of liquor, 4 ounces of wine, or 12 ounces of beer.
- Be selective – what you choose to drink can make a difference. Some mixed drinks have carbohydrates that can raise blood glucose and add calories.
- Be safe. Never drink and drive.

Emotional aspects of diabetes

Diabetes can affect the mind as well as the body. Denial, anger, isolation, frustration, and resentment are common reactions to a diagnosis of diabetes. Depression and anxiety are common, too.

You can have diabetes and still have good emotional health. Family members and support groups can help.

If you feel you are having difficulty coping with your diagnosis of diabetes, don't hesitate to mention it to your personal doctor.



Diabetes and pregnancy

If you have diabetes, planning your pregnancy will help to ensure a safer experience for both you and your baby.

High blood glucose during early pregnancy can harm your unborn child. It is important to have your blood glucose well under control for at least 3 months before you become pregnant.

If you are not ready to become pregnant, talk to your doctor about birth control options.

If you are considering getting pregnant, talk with your doctor about:

- The risks of an unplanned pregnancy.
- Other medical risks you may have.

If you decide to become pregnant:

- Have good medical care before, during, and after your pregnancy.
- Work to maintain normal blood glucose levels before, during, and after your pregnancy.

Gestational diabetes

Some people who do not have diabetes develop high blood glucose levels during pregnancy. This is called gestational diabetes.

If not treated, gestational diabetes can cause serious health problems for pregnant people and their babies.

Pregnant people can lower their blood glucose by eating right and exercising. Some may need insulin. If you keep your blood glucose in control, the risks to you and your baby are the same as a normal pregnancy.

People who have gestational diabetes are at higher risk of developing type 2 diabetes later in life. It is important to have yearly follow-up to test for diabetes.



Resources

There are many resources available online. These are only a few suggestions.

Online



Kaiser Permanente

- kp.org/diabetes
- kp.org/healthengagement

Centers for Disease Control

- cdc.gov/diabetes

American Diabetes Association

- diabetes.org

Diabetes Food Hub

- diabetesfoodhub.org

Websites



Beyond Type 2 blog and online support community

- beyondtype2.org

diaTribe diabetes tips, insights, and news

- diatribe.org

One Touch blood sugar meters and education

- onetouch.com

Taking Control of Your Diabetes edutainment

- tcoyd.org

Apps



Calorie King

- Access nutritional information
calorieking.com

Fitness Pal

- Track food and exercise
myfitnesspal.com

Glucose Buddy

- Get reminders and track blood glucose, medications, exercise, food, weight, and blood pressure
glucosebuddy.com

Fooducate

- Scan barcodes, get nutritional information, see grades assigned to foods
fooducate.com

Lose It!

- Track calories and exercise, scan barcodes
loseit.com

OneTouch Reveal

- Manage blood sugars from your OneTouch Verio meter
iTunes Store or Google Play Store

