

Living with diabetes step by step



CENTER FOR
HEALTHY LIVING

 KAISER PERMANENTE®

You may have just found out that you have diabetes. We recognize that this may be an emotional time for you. At Kaiser Permanente, we're here to help.

This is a guide to managing your diabetes. Diabetes self-care is an ongoing process. With a healthy lifestyle, you can live a long and enjoyable life with diabetes.



Table of contents

Kaiser Permanente workshops/Who to call.....	2
What is diabetes?.....	3
Checking blood sugar.....	6
Low blood sugar (hypoglycemia).....	11
High blood sugar (hyperglycemia).....	13
Food choices: What should I eat?.....	15
Alcohol and diabetes.....	21
Physical activity.....	22
Emotions and diabetes.....	23
Heart health.....	24
Managing diabetes when you are sick.....	25
Common diabetes medications.....	25
Insulin basics.....	26
Long-term complications.....	33
Diabetes and pregnancy.....	38
Resources.....	39

Kaiser Permanente workshops/ Who to call

Diabetes workshops

Managing diabetes is a journey. Learn to navigate through the changes and challenges.

Join others in a group discussion on:

- Checking blood sugar
- Eating healthy
- Getting active
- Managing stress
- Taking care of yourself with medication

Discover how insulin can prevent complications from high blood sugar. Attend as often as you want to get the support you need!

Other offerings

Healthy Balance: A Weight Management Program

Developed by professionals, Healthy Balance is based on three basic ideas for success:

- Daily habits
- Healthy eating
- Getting active

Call Lifestyle Medicine at **808-432-2260** to learn more.

Video classes for diabetes, heart health, healthy eating, and healthy kids and teens

Call **808-432-2260** or log on to **kp.org** to schedule a video class.

Virtual visits (phone, video, or email)

Changing habits can be hard, but working with a wellness coach can help you:

- Reach a healthy weight
- Get more active
- Reduce stress
- Eat healthier
- Quit tobacco

Call Lifestyle Medicine at **808-432-2260** or schedule online through **kp.org**.

Contact us

Patient Support Service (PSS): **808-643-3784**

Lifestyle Medicine (dietary and health coach):
808-432-2260

Behavioral Health: **808-432-7600** (Oahu),
1-800-945-7600 (neighbor islands)

24/7 Advice:

Oahu: **808-432-2000**

Maui/Molokai/Lanai: **808-243-6000**

Hawaii Island: **808-334-4400**

Kauai: **808-246-5600**

TTY: **711**

What is diabetes?

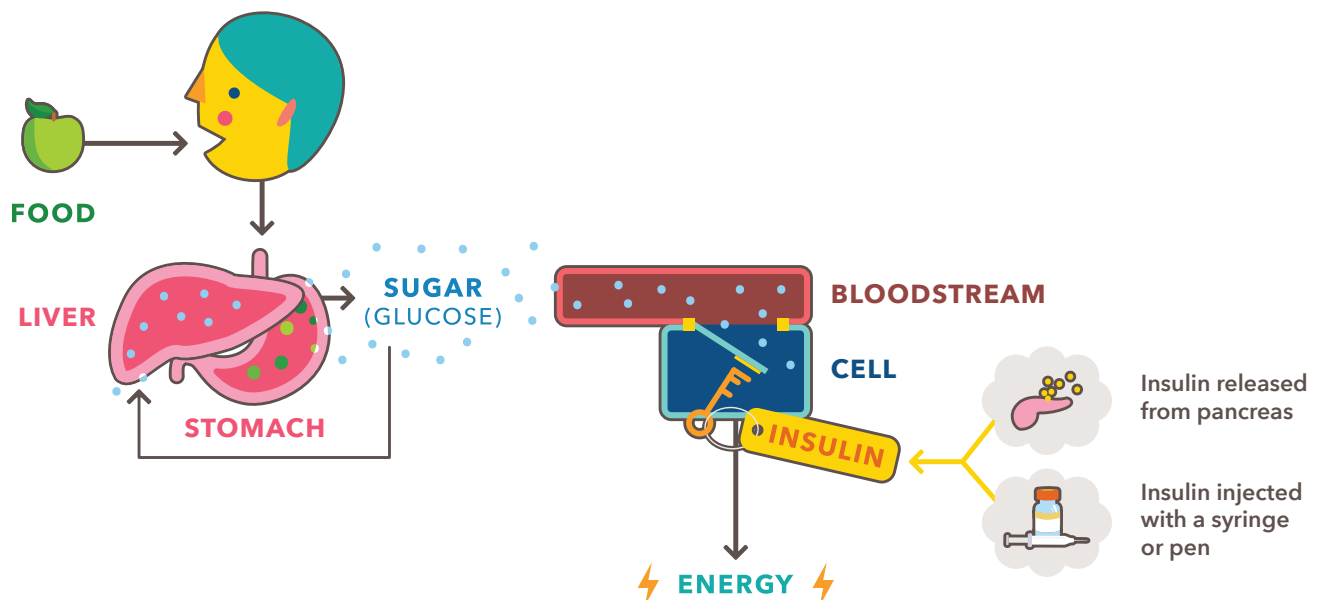
When you have diabetes, the glucose (sugar) level in your blood is higher than normal.

This happens when:

- Your body is not able to use insulin well
- Your pancreas does not make as much insulin as your body needs
- Your pancreas stops making insulin

What is insulin?

After you eat, your food is broken down into sugar. Your liver stores some of it for later when your body needs it, but most of it goes into your blood. Insulin is a hormone made in your pancreas. It moves the sugar from your blood into your cells to be used for energy. When you have diabetes, the sugar gets “trapped” in your blood because your body doesn’t make enough insulin or use the insulin it makes well.



Types of diabetes

There are three main types of diabetes:

- **Type 1 diabetes**
This type is an autoimmune reaction (your body attacks itself by mistake) that stops your body from making insulin. You’ll need to take insulin every day.
- **Type 2 diabetes**
Your body produces too little insulin or cannot use the insulin it produces. This is called **insulin resistance**.
- **Gestational diabetes**
This type occurs during pregnancy. Blood sugar usually returns to normal levels after the baby is born. Gestational diabetes increases the risk for developing type 2 diabetes. Having a follow-up 3 months after your pregnancy to check your blood sugar for diabetes is very important.

How do I know I have diabetes?

Three different blood tests are used to diagnose diabetes. These tests are usually repeated to confirm the diagnosis. Here are the American Diabetes Association’s guidelines.

Hemoglobin A1C (HbA1C) – No fasting is needed.

Result (%)	Diagnosis
Less than 5.7	Normal
5.7 to 6.4	Prediabetes
6.5 or higher	Diabetes, if confirmed with a second HbA1C test

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

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

Random plasma blood sugar – No fasting is needed.

Result (mg/dl)	Diagnosis
Higher than 200 with symptoms of high blood sugar (hyperglycemia)	Diabetes

Measuring diabetes management

A1C measures your average blood sugar level over a 3-month period.

If your A1C is:	Your average blood sugar is:
6.0 to 6.9	126 to 153
7.0 to 7.9	154 to 182
8.0 to 8.9	183 to 211
9.0 to 9.9	212 to 239
10.0 to 10.9	240 to 268
11.0 to 11.9	269 to 297
12.0 to 12.9	298 to 324
13.0 to 13.9	325 to 353
14.0 to 14.9	354 to 382

A1C does not measure moment-to-moment changes.

How is the A1C test different from testing your blood sugar with a meter?

Your blood sugar meter measures your blood sugar level at a moment in time. This level changes based on the food you eat, your activity level, your stress level, and the medications you may be taking.

The A1C test shows average blood sugar over the last 3 months. An A1C less than 7.0% is recommended for most people. This means a lower risk of long-term complications.

Every point you can take off your A1C lowers your risk of long-term complications.

The A1C test is repeated as recommended by your doctor and care team.

What the results mean

If your A1C is:	Your risk for long-term complications is:
Less than 7.0	Low
7.0 to 8.0	Medium
Higher than 8.0	High

Your goals may be different. Talk to your doctor about your target A1C.

Current A1C level:

Date:



Checking blood sugar

Why should I check my blood sugar?

Checking your blood sugar helps you manage your diabetes day to day. You can see how the changes you make affect your blood sugar. Ask your doctor and care team whether you should be checking your blood sugar, how often you should be checking, and what your targets should be.

What do I need to pick up at the pharmacy?



Blood glucose kit (contains meter, lancing device)



Test strips



Control solution



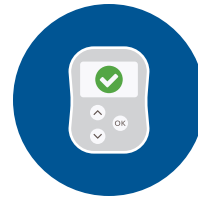
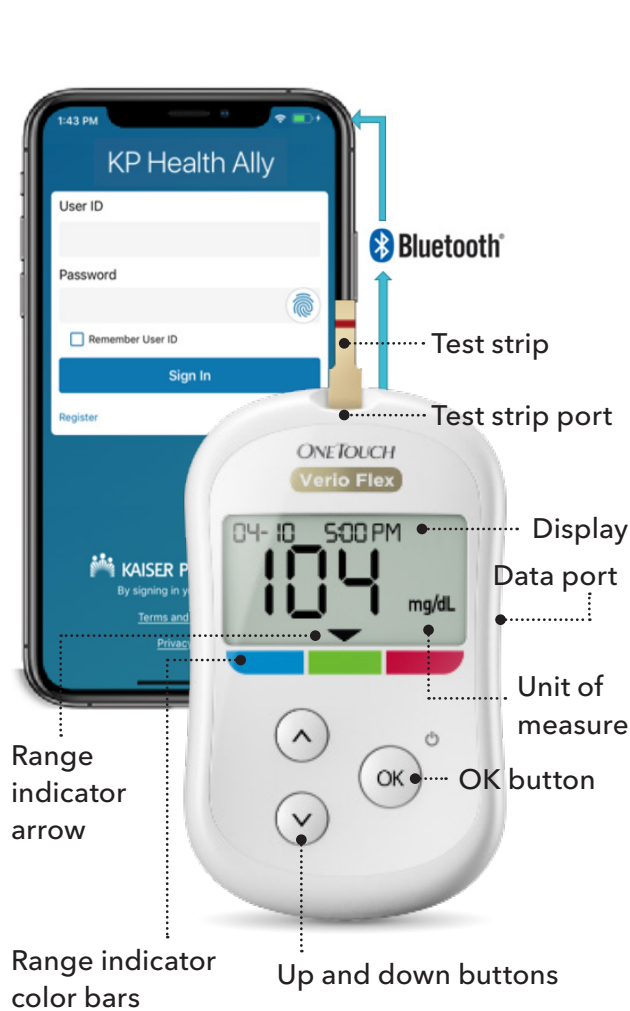
Lancets (needles)



Sharps container

Items need to be ordered by your doctor and care team. Supplies will vary based on how often your doctor wants you to check your blood sugar.

When you get your supplies, you will have to set up your meter. Check the back of the meter for the customer service number or go to [onetouch.com/products](https://www.onetouch.com/products) for more help. Or, see the following instructions.



Setting up your meter

1. Press and hold the "OK" button to turn the meter on.
2. Select "meter set up" by using the up and down arrows. Press "OK."
3. Follow the prompts, pressing "OK" after each choice.
4. The last screen will show all your choices.

If you want to change a choice, use the up or down arrows to highlight that choice. Press "OK," make the change, and press "OK" again. When the choices listed are exactly what you want, press "OK." You're done! You don't need to do this again. The meter will save these settings. It will record a time and date each time you check your blood sugar.

Remote Blood Glucose Monitoring

Together, the OneTouch Verio Flex meter and the KP Health Ally app can help you manage your blood sugar. Seeing levels in real time can help you make decisions about how to balance your food, exercise, and medicines. Work with your care team to see if this is best for you.



Using the lancing device to check your blood sugar

1. Wash and dry your hands before testing.
2. Twist and remove the cap with the small hole in it, exposing the needle holder.
3. Grasp an unused lancet needle by the round end. Push the end into the needle holder until you hear a click. Twist the round end and gently pull to expose the needle.
4. Replace the cap by gently twisting it back on.
5. Start with a lancet setting of 2 to 3 for a more comfortable finger stick. Increase if you need to.
6. Insert a test strip into the meter so that the silver prongs are at the bottom of the strip and the gold side is facing you.
7. The meter will automatically turn on.
8. A drop icon will appear at the top of the next screen.
9. Press the hole in the lancing device cap firmly against the side (not the tip!) of your finger. Push the button to “trigger.”
10. If necessary, gently massage your fingertip until a small drop of blood appears.
11. If you are having trouble getting a blood sample, rub your hands together or run them under warm water.
12. Test on a different finger every day.
13. When you have a drop of blood on your finger, place the edge of the test strip into the drop. The blood will fill a small horizontal channel.
14. Wait 5 seconds, and your blood sugar number will appear on the screen.
15. Remove the lancet after checking and discard both the lancet and used test strip into your sharps container.

Blood sugar target ranges

YOUR TARGET	A1C target	Before meals	2 hours after meals	Bedtime
□	Less than 6.5 (specific to pregnancy)	95 or less	Less than 120 (2 hours after) Less than 140 (1 hour after)	Less than 120
□	Less than 7	70-130	Less than 180	110-150 110-180 if on insulin
□	Less than 8	85-145	Less than 200	125-165 if on oral medication 125-195 if on insulin
□	Less than 9	100-160	Less than 215	140-180 if on oral medication 140-210 if on insulin

Your doctor and care team may give you different target ranges. They can vary based on your age or other factors. You, your doctor, and your care team will make a plan to decide how often to check your blood sugar.

Adding notes in your KP Health Ally app or writing down your blood sugar readings will help you track your daily patterns. You can use this information to make decisions about food, activity, and medications.

Sharps disposal

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

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

When your sharps-disposal container is $\frac{3}{4}$ full, seal it tightly and bring the full container to your local Kaiser Permanente Hawaii pharmacy for a replacement container.

Safe driving tips

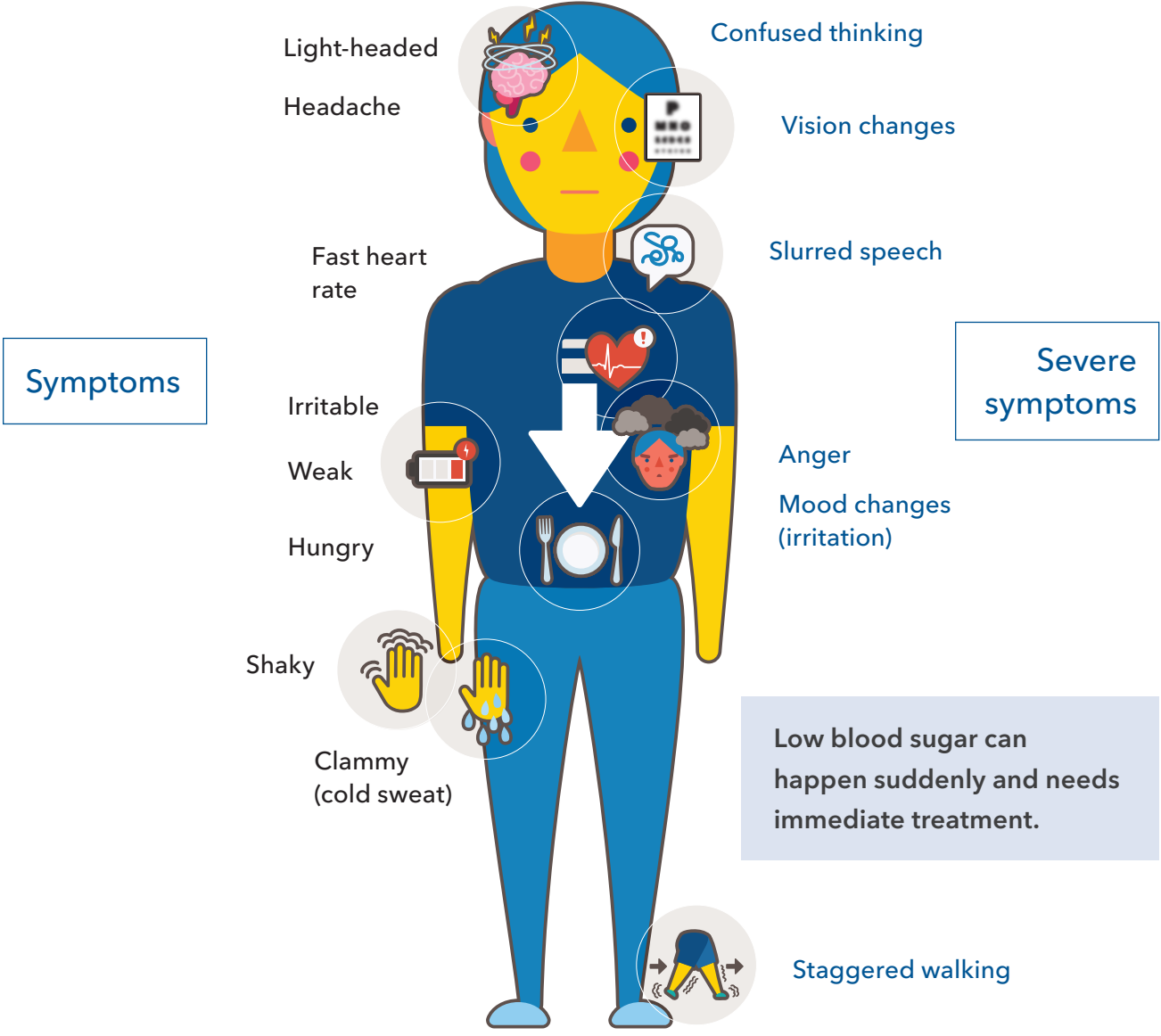
- Check your blood sugar before driving, especially if you take medication or haven't eaten in 1 to 2 hours.
- Don't drive if your blood sugar is 100 mg/dl or lower.
- Keep a fast-acting sugar (fruit juice, hard candies, glucose tablets) in your car to treat low blood sugar.
- Carry a snack with you, like trail mix with fruit, to keep your blood sugar normal if you won't eat again for a while.

Low blood sugar (hypoglycemia)

Low blood sugar is less than 70 mg/dl, whether or not you have symptoms. Symptoms may result when blood sugar drops too quickly.

Causes

- Eating too few carbs
- Eating too little or too late
- Using too much diabetes medication or insulin
- Skipping meals
- Drinking alcohol without eating
- Exercising more than usual
- Any major change in diet or lifestyle



If you are experiencing symptoms, or if your blood sugar is 70 mg/dl or less, treat it in the following way:

Rule of 15s (15 grams, 15 minutes)



Check your blood sugar, if possible. If you can't test, assume your blood sugar is low.



Eat or drink a fast-acting carbohydrate (see the box).



Wait 15 minutes, and then recheck your blood sugar.

- If your blood sugar is still 70 mg/dl or less, repeat the steps listed.
- If your blood sugar is **below 70 mg/dl more than 2 times during a 7-day period** after treating your low blood sugar, **call your doctor and care team.**
- If your blood sugar is above 70 mg/dl and it's time for a meal, eat a meal. If not, eat a balanced snack (see the box).

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



Fast-acting carbohydrates (15 grams) to treat low blood sugar

- Fruit juice, regular soda 4 ounces
- Milk (cow) 8 ounces
- Glucose tablets 4 tablets

Suggested snacks (with protein) after treating low blood sugar

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

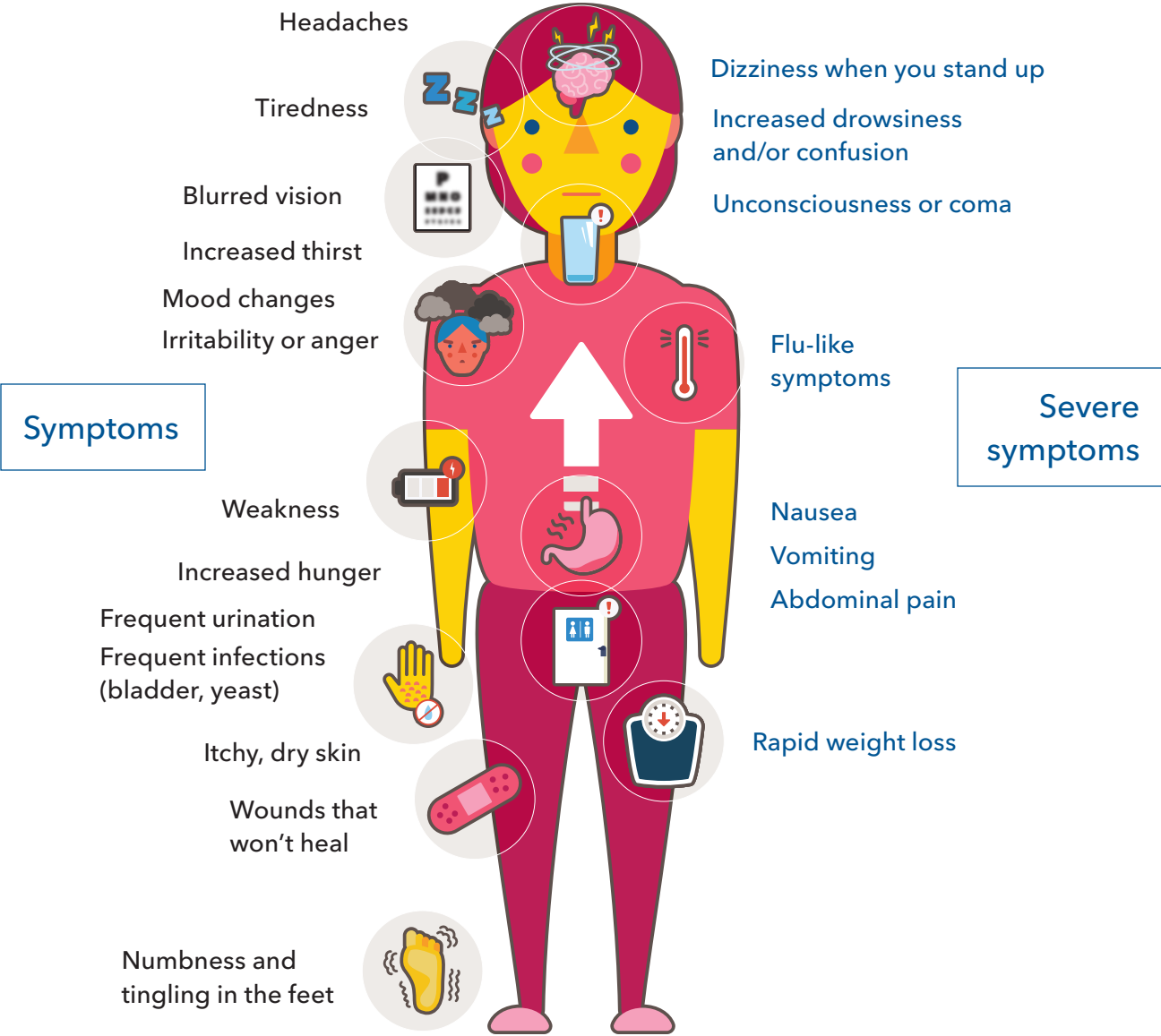


High blood sugar (hyperglycemia)

High blood sugar usually begins slowly. It's possible to have high blood sugar without any symptoms.

Causes

- Eating too much food, unhealthy fats, or processed low-fiber carbohydrates
- Taking too little or forgetting to take your diabetes medication or insulin (never stop taking your medication unless you have talked to your doctor)
- Infection, fever, illness
- Emotional stress
- Decrease in normal activity/exercise
- Having drinks high in sugar and/or carbs (juice, soda, smoothies, sugar-sweetened coffee)



Treatment



Drink 8 to 16 ounces of fluids without sugar, calories, or caffeine.



Follow your food plan when your blood sugar returns to normal.



Take medication as directed. Do not take extra doses.



Follow your physical activity plan when your blood sugar returns to normal.

Contact your doctor or care team if:

- Your blood sugar is higher than 400 mg/dl 2 times in a 7-day period.
- Your blood sugar continues to rise.

Contact your doctor and care team through your [kp.org](https://www.kp.org) account or by phone.

For 24/7 advice after hours:

Oahu: 808-432-2000

Maui/Molokai/Lanai: 808-243-6000

Hawaii Island: 808-334-4400

Kauai: 808-246-5600

TTY: 711

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





Food choices: What should I eat?

All carbohydrates (carbs) raise your blood sugar, especially sugars/sweets (soda, juices, desserts) and foods with no fiber (white rice, white bread, white pasta). Control your blood sugar by choosing high-fiber and whole plant foods, which can slow down sugar absorption.

Carbs are found in many foods:

- Fruits (contain fructose = fruit sugar)
- Milk/yogurt (contain lactose = milk sugar)
- Whole grains and starches (pasta, bread, rice, cereal, quinoa)
- Starchy vegetables (potatoes, yams, peas, beans, corn, winter squash, poi, breadfruit/ulu)

The healthy plate method

American Diabetes Association recommendations:

- 30 to 60 grams of carbs per meal, 2 or more meals a day, evenly spaced throughout the day. See page 39 for apps that can help you count carbs.
- You may need a snack if your meals are 4 to 5 hours apart. It may be helpful to limit your eating so it's not too close to bedtime.
- 15 to 30 grams of carbs (paired with a lean protein or healthy fat) per snack, 1 to 2 snacks a day. Talk with your doctor or registered dietitian about whether a healthy snack before bedtime is right for you.

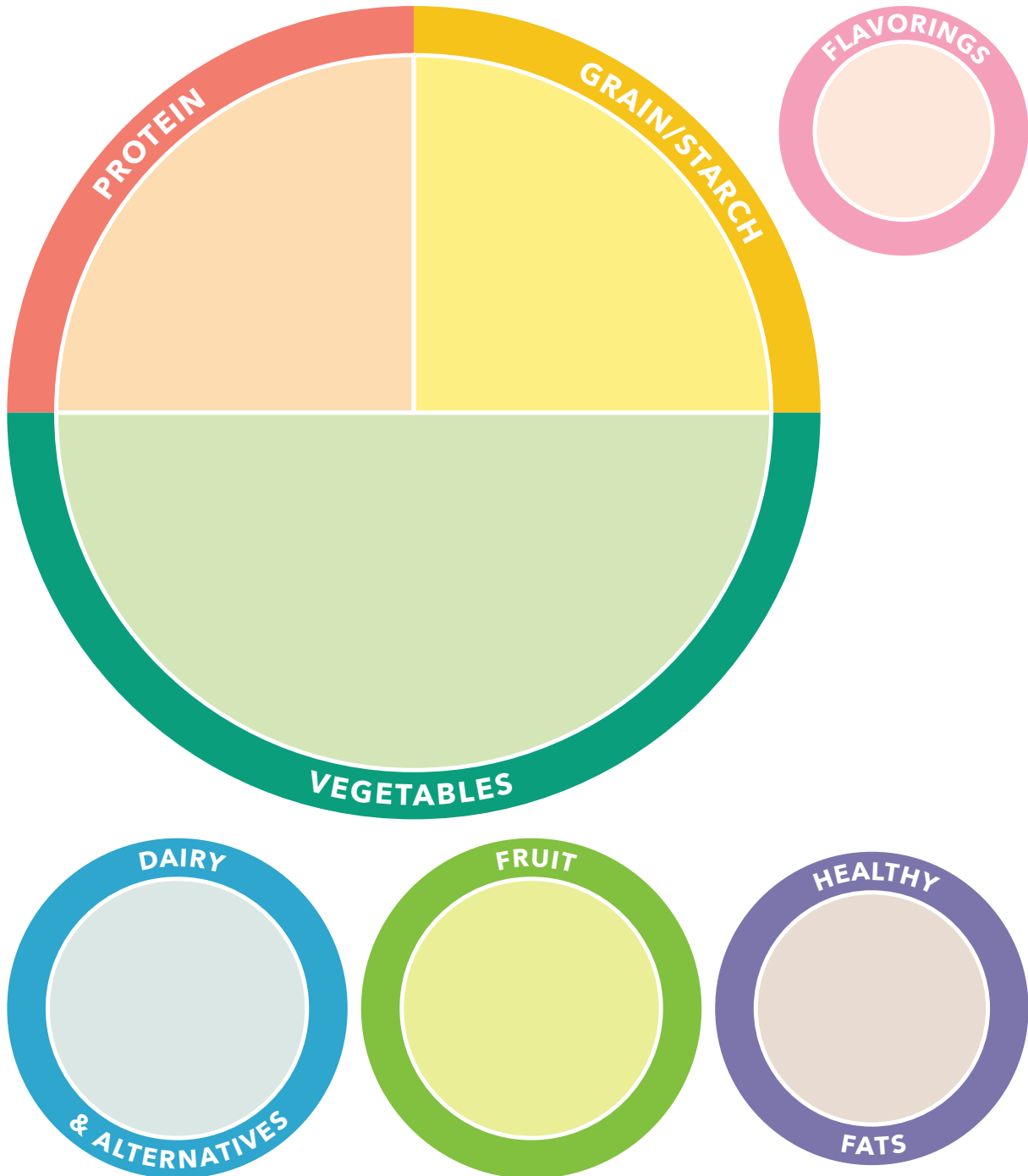
Meals should also include lean protein, healthy fats, and nonstarchy vegetables. Eat a variety of whole, unprocessed foods (these usually have just a few ingredients).

For meal ideas, cookbooks, and recipes, visit:

- diabetesfoodhub.org (American Diabetes Association)
- kp.org/foodforhealth (Kaiser Permanente Food for Health)

Write down all your favorite foods that fit in the healthy plate below for breakfast, lunch, dinner, and a snack. Then add them to your shopping list!

- Choose foods that are high in fiber. Fiber helps you control your blood sugar levels, feel fuller, and decrease inflammation (damage to cells).
- Include lean protein (tofu, beans, lean meats, skinless poultry, seafood). Unhealthy (saturated) fats can block the work that insulin does.



Tofu with brown rice and avocado salad



Sinigang



Turkey meatballs with pasta and mixed vegetables



Fish with rice and greens



Turkey sandwich with an apple



Thai chicken and vegetable curry with brown rice



Consistent carbohydrates to manage your blood sugar

Eat the right amounts

1 carb serving = 15 grams of carbohydrates

- Have about the same amount of carbs at each meal.
- A carb-controlled meal could have 2 to 4 carb servings.
- A carb-controlled snack could have 1 to 2 carb servings.
- Keep a blood sugar and food log so you can see how the amount and type of carbs affect your blood sugar levels.
- Medications and your activity level can change how many carbs you should have.

Milk

1 carb serving

- Unsweetened soy, skim, or 1% milk (1 cup)
- Greek yogurt (1¾ cups)

Protein

1 carb serving

- Beans (kidney, white, mung, adzuki), cooked (½ cup)
- Lentils, cooked (½ cup)

Whole grains/starches

1 carb serving

- Whole-wheat bread (1 slice or 1 ounce)
- Oatmeal (½ cup)
- Quinoa (⅓ cup)
- Unsweetened cereal (¾ cup)
- Whole-wheat pasta (⅓ cup)

- Buckwheat soba (⅓ cup)
- Brown rice (⅓ cup)
- Corn tortilla (1 small)

Starchy vegetables

1 carb serving

- Corn (½ cup)
- Peas (½ cup)
- Baked potato/sweet potato (½ cup)
- Mashed potato (½ cup)
- Plain popcorn (3 cups)
- Breadfruit (ulu) (¼ cup)
- Pumpkin/squash (¾ cup to 1 cup)
- Pa'i'ai (¼ cup)
- Poi (½ cup)
- Taro (⅓ cup)

Fruit

1 carb serving

- Banana (small, apple banana)
- Berries (¾ cup)
- Pear/apple (small, tennis ball size)
- Grapes (15 medium or 3 ounces)
- Orange (½ cup or 1 small)
- Papaya (½ medium)
- Mango (½ cup)
- Pineapple (¾ cup)
- Canned fruit with no sugar added (½ cup)
- Raisins/dried fruit (2 tablespoons)
- Lychee (7 pieces)
- Melon (1 cup)

Foods low in carbs

Protein

- Skinless chicken/turkey (1 piece the size of your palm per meal)
- Fish/seafood (1 piece the size of your palm per meal)
- Tuna/sardines (3 ounces)
- Tofu (1 to 1½ cups)
- Low-fat cheese (1 ounce)
- Egg (1 small)
- Unsweetened nut butter (1 tablespoon)

Healthy fats

- Avocado (¼ cup)
- Nuts (⅓ cup)
- Vegetable oil (1 teaspoon)
- Light mayonnaise or buttery spread (1 tablespoon)

Nonstarchy vegetables

Aim for at least 3 to 5 servings a day.

1 serving is 1 cup mixed raw/cooked vegetables or ½ cup cooked or 2 cups raw

- Flowers (broccoli, cauliflower, choy sum)
- Roots (carrots, daikon, turnip, beets)
- Bulbs (garlic, onion, shallots)
- Leafy greens, seaweed
- Fungi (white, enoki, portobello mushrooms)
- Stems (asparagus, celery)
- Fruit (cucumber, tomato, eggplant)
- Leaves (cabbage, brussels sprouts, bok choy)

Foods to limit

Choose foods from this group less often. These foods are low in nutrition and fiber, high in calories, and high in saturated fats.

Sweets, desserts, other

1 carb serving

- Brownie/cake, unfrosted (2 inches)
- Cookie, unfrosted (2 inches)
- Jam/honey (1 tablespoon)
- Ice cream (½ cup)
- Chocolate bar (1 ounce)
- Mochi (1x1x3 inch piece)
- Malasada (1 piece)
- Arare/mochi crunch (¼ cup)
- Chocolate milk/smoothie (5 ounces)
- Juice (½ cup)
- Pancake (4-inch diameter)
- Macaroni salad (½ cup)
- Potato chips (1 cup)
- Crackers (5 pieces)
- White noodles (saimin, pasta) (⅓ cup)
- White rice (⅓ cup)

Examples of carbohydrate choices in a meal



2 carb choices
(1 English muffin)



3 carb choices
(1 cup beans and 1/2 cup fruit)



4 carb choices
(1 cup rice and 1/2 cup fruit)

Combination foods

Carb counts vary depending on portion size and preparation.

- 1 cup Portuguese bean soup = 1 carb
- 1 cup beef stew = 1 carb
- 1 slice medium thin crust pizza = 2 carbs
- 1 cup oyako donburi = 2 carbs
- 1 cup chili with beans = 2 carbs
- 1 cup spaghetti with meat sauce = 3 carbs
- 1 pork manapua = 3 carbs
- 1 cup lasagna = 3 carbs

Nutrition label targets

- **Check serving size**
- **Saturated Fat:** Choose foods with less than 2 grams per serving
- **Total Carbohydrate:** 15 grams = 1 carb serving
- **Dietary Fiber:** Choose foods with 3 grams or more per serving
- **Added Sugar:** Choose foods with less than 5 grams per serving
- **No hydrogenated oils in ingredients list**

Nutrition Facts	
23 servings per container	
Serving size	1 slice (41g)
Amount per serving	
Calories	109
% Daily Value*	
Total Fat 1g	2%
Saturated Fat 0g	0%
<i>Trans Fat</i> 0g	
Cholesterol 0mg	0%
Sodium 156mg	6%
Total Carbohydrate 15g	5%
Dietary Fiber 3g	12%
Total Sugars 2g	
Includes 0g Added Sugars	0%
Protein 5g	
Vitamin D 0mcg	0%
Calcium 52mg	4%
Iron 0.9mg	5%
Potassium 69mg	2%
*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.	

INGREDIENTS: ORGANIC SPROUTED WHEAT, FILTERED WATER, ORGANIC SPROUTED BARLEY, ORGANIC SPROUTED MILLET, ORGANIC MALTED BARLEY, ORGANIC SPROUTED LENTILS, ORGANIC SPROUTED SOYBEANS, ORGANIC SPROUTED SPELT, FRESH YEAST, ORGANIC WHEAT GLUTEN, SEA SALT.

Alcohol and diabetes

You can still drink some alcohol with diabetes, but it's important to talk to your doctor first.

You should not drink alcohol if you are pregnant.

Questions to ask:

- Am I taking any medications, like metformin, glipizide, or glyburide, that may not mix well with alcohol?
- Should I avoid alcohol for any health reason?
- Is my diabetes managed well enough to drink alcohol?

If you decide to drink, here's what you should know

- Have alcohol during or right after a meal. It can cause low blood sugar when taken on an empty stomach.
- Avoid alcohol after vigorous exercise. Alcohol and exercise both lower blood sugar.

- Don't drink alcohol before bedtime. Alcohol can cause you to wake up more often during the night.
- Drink in moderation (not more than 1 drink a day for women, and 2 drinks a day for men). Avoid binge drinking (such as 6 beers on a Saturday).
- One serving is 1.5 ounces of hard liquor, 5 ounces of wine, 8 to 9 ounces of malt liquor, or 12 ounces of beer.
- Choose carefully. Some mixed drinks have carbs that can raise blood sugar and add calories.
- Alcohol makes it more difficult to lose weight because alcohol can cause you to eat more, and it increases fat storage from foods.
- Be safe. Never drink and drive.

1 drink =



Regular beer
12 ounces



Malt liquor
8 to 9 ounces



Wine
5 ounces



Hard liquor
1.5 ounces

Physical activity



Gives you energy



Reduces stress



Helps your body release and use insulin better



Lowers blood sugar, cholesterol, and blood pressure



Improves sleep



Builds and tones muscles



Makes your heart and bones strong



Helps you lose weight or maintain a healthy weight

Did you know that you can lower your blood sugar 1 point for every minute of mild to moderate exercise, up to 40 minutes?

Check out kp.org/healthybalance or positivechoice.org for exercise videos you can do at home!

How much exercise is enough?

Get **at least 150 minutes** of moderate physical activity spread throughout the week (like 5 days of walking for 30 minutes). Begin slowly. Get your heart rate up. Choose activities you enjoy and can do anywhere, like walking, tai chi, or basketball. **Talk to your doctor before starting an exercise program** to make sure it's right for you.

Drink extra water before, during, and after exercise.

Check your blood sugar before you exercise. It should be 100 mg/dl or higher. Eat a healthy snack, such as a small piece of sweet potato ('uala), a small piece of fruit with nuts, or avocado toast.

Keep a record of your exercise so you can **track your progress**. Add notes to your KP Health Ally app or use an app that can help you track your activity. See the end of this booklet for some choices.

Stop exercising and call your doctor if you have chest pain, shortness of breath, or leg pain.

Visit kp.org/exercise for a variety of reduced rates on studios, gyms, fitness gear, and online classes available for Kaiser Permanente members. ClassPass is now included to make it easier to work out from anywhere!

Emotions and diabetes

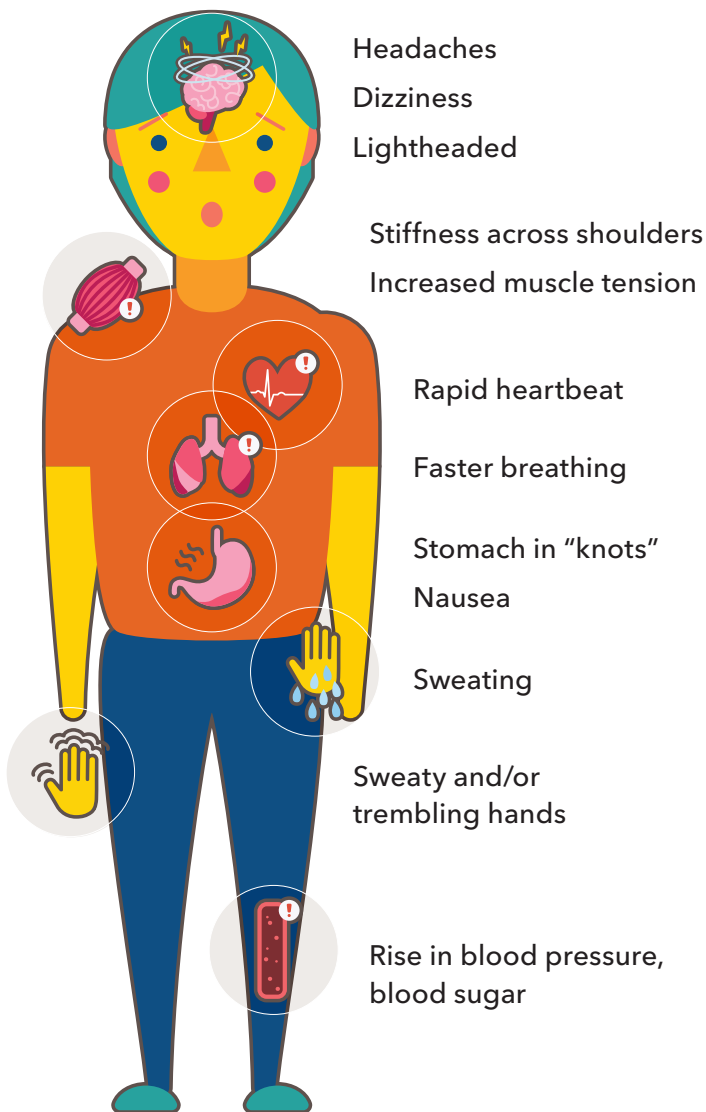
Diabetes can affect your mind and body, making it hard to take care of yourself by eating healthy or being active. Denial, anger, and resentment are common reactions to finding out you have diabetes. Depression and anxiety are common, too.

You can have diabetes (controlled or uncontrolled) and still have good emotional health. Family and support groups can help. If you are having trouble coping, talk to your






doctor or join a support community online at community.diabetes.org. You can also visit findyourwords.org or call for an appointment at **808-432-7600** (Oahu) or **1-888-945-7600** (neighbor islands), Monday through Friday, 8 a.m. to 5 p.m. For after-hours care, call the Crisis Line of Hawaii at **808-832-3100** (Oahu) or **1-800-753-6879** (neighbor islands).

See the end of this booklet for more resources, like the Calm app.






Symptoms of stress in the body:



Symptoms of stress in the mind:

-  Anxiety or getting angry easily
-  Sadness or feelings of helplessness
-  Thinking about the same things again and again
-  Moods that change quickly
-  Poor concentration

Symptoms of stress in behavior:

-  Reduced activity, no energy
-  Overactivity and inability to rest (restlessness)
-  Using drugs, tobacco, or alcohol to relieve tension
-  Difficulty concentrating on one task
-  Sleep problems (trouble falling asleep, staying asleep, or sleeping too much)



Recommended goals for people with diabetes

- A1Cless than 7.0
- Blood pressure less than 140/90
- LDL ("bad" cholesterol) less than 100
- HDL ("good" cholesterol)..... 40 or more for men and 50 or more for women

Ask your doctor about your goals. You may be able to lower your risk of heart attack or stroke with cholesterol-lowering medication even if your cholesterol level is normal.

Heart health

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

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

Why is my risk higher?

People with type 2 diabetes also have higher rates of:

- High blood pressure
- Being overweight
- High blood fats

To lower your risk



Eat more high-fiber, plant-based foods (vegetables, whole grains, fresh fruit). Eat less salt and saturated and trans fats found in red meats (beef, pork, lamb), cheese, and fatty dairy products.



Get regular exercise.



Stay at or work toward a healthy weight.



If you use tobacco, quit.

If your doctor or care team 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.

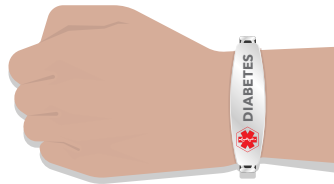
Managing diabetes when you are sick

Illness, injury, or surgery can change your blood sugar levels.

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

Speak with your doctor to see if you need to make any changes to your diabetes medication.

Wear medical identification, such as an alert bracelet, at all times. You can find these at a drugstore or online.



Check and record your:

- **Blood sugar** at least every 4 hours.
- **Temperature** morning and evening. If it's above 101.5°F, seek medical advice.
- **Weight** at the same time every day.

- **Level of alertness** every 4 hours.
- **Urine ketones** if your blood sugar is higher than 240 mg/dl. Ketone strips (used to measure ketosis) are available over the counter without a prescription.

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 ½ to ¾ cup of liquid every hour.

If you *cannot* eat your usual meals:

- Drink ½ to ¾ cup of caffeine-free fluids with sugar, such as regular 7Up, ginger ale, fruit juice, or Gatorade.

Common diabetes medications

Metformin (Glucophage) works in your liver to slow the production and release of glucose into your blood. Take it with meals to lower the risk of diarrhea and nausea.

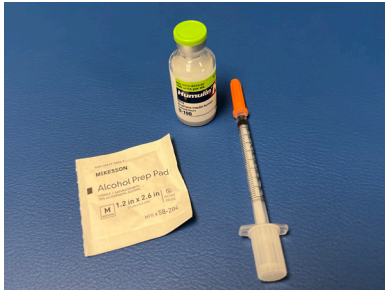
Glipizide (Glucotrol) works to help your pancreas make and release insulin. **Take it 15 to 30 minutes before breakfast and dinner to work best.** It can cause blood sugar to drop too low if not followed by a meal.

Insulin helps your body get the sugar it needs from food to give you energy. When you have diabetes, your body doesn't make insulin or use the insulin it makes well. You may use insulin with your medications, or you may use insulin alone. Insulin will help you stay healthy by controlling your blood sugar and giving you energy.

Talk to your doctor and care team about which medications are best for you.

Insulin basics

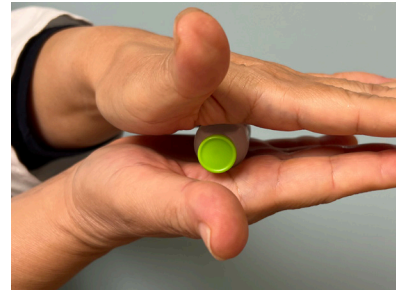
How to inject insulin



1. Get your insulin, insulin syringe, and alcohol swab.



2. Wash your hands with soap and water.



3. Turn the bottle on its side and gently roll 24 times between your hands until insulin is cloudy.



4. Clean the top of the bottle with an alcohol swab.



5. Draw air into the syringe—the same amount as the insulin you are going to take.



6. Put the needle through the rubber top. Push the plunger down to inject air into the bottle.



7. Turn the bottle upside down and pull the plunger down to fill the syringe. Line up the top of the plunger with your dosage number.



8. Check for large air bubbles in the syringe. If present, forcefully push all the insulin back into the bottle. Withdraw the exact dosage again.



9. Choose your injection site. Clean skin with an alcohol swab and allow to dry. Pick up the syringe. Gently pinch up a large mound of skin.



10. Hold the syringe firmly like a dart. Quickly insert the entire needle straight into the skin using a 90-degree angle. Push the plunger down slowly and steadily to inject the insulin.



11. Take out the needle and cover the injection site with the alcohol swab. Press gently for a few seconds.



12. Throw away the needle and syringe in a Kaiser Permanente needle container. Never reuse a syringe.

Notes:

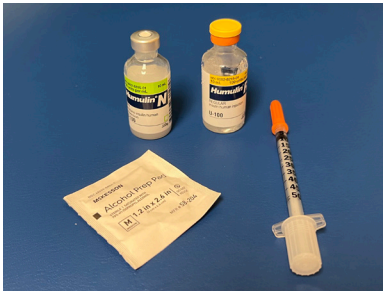
Name of insulin(s):

Current dosage:

Peak action and duration:

Store all insulin in the refrigerator. It's good for only 30 days once opened.

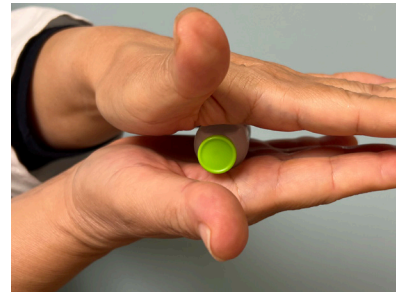
How to mix two insulins in a syringe



1. Get your insulin, insulin syringe, and alcohol swab.



2. Wash your hands with soap and water.



3. Turn the bottle on its side and gently roll 24 times between your hands until insulin is cloudy.



4. Clean the tops of both bottles of insulin with an alcohol swab.



5. Put ____ units of air into the bottle of N (cloudy) insulin and **take the needle out**.



6. Put ____ units of air into the bottle of ____ (clear) insulin. Withdraw ____ units into the syringe and **take the needle out**.

Important

- **Never push the plunger up** as this will push the clear insulin into the bottle of cloudy insulin.
- If you go past your dose by 1 or 2 units, take the needle out of the bottle and carefully waste the 1 or 2 extra units into the sink.



7. Now, put the needle back into the N (cloudy) insulin. Turn the bottle upside down and pull the plunger down slowly. Stop when you reach a total of ____ units. **Take the needle out** and cover it with the cap.



8. Choose your injection site. Clean skin with an alcohol swab and allow to dry. Pick up the syringe and take the cap off the needle. Gently pinch up a large mound of skin.



9. Hold the syringe firmly like a dart. Quickly insert the entire needle straight into the skin using a 90-degree angle. Push the plunger down slowly and steadily to inject the insulin.



10. Take out the needle and cover the injection site with the alcohol swab. Press gently for a few seconds.



11. Throw away the needle and syringe in a Kaiser Permanente needle container. Never reuse a syringe.

Notes:

Name of insulin(s):

Current dosage:

Peak action and duration:

Store all insulin in the refrigerator. It's good for only 30 days once opened.

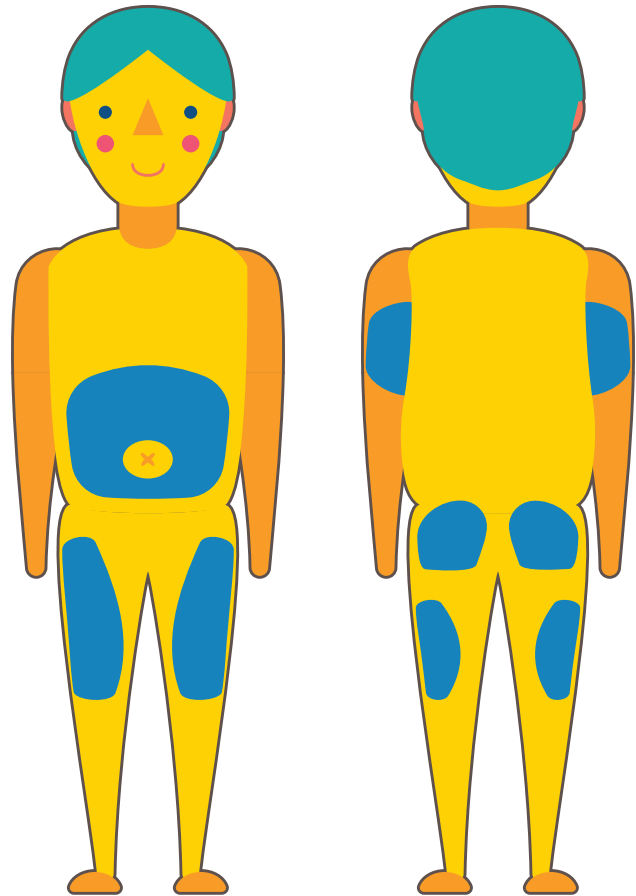
	Units:	a.m.	p.m.
Clear insulin (NovoLog or R)			
Cloudy insulin (N)			
Total units in syringe			

Tips for better insulin injections

Your abdomen is the best place to inject insulin (stay 2 inches away from your belly button). You can also use your upper outer arms, thighs, or buttocks. Talk with your doctor about the best injection area for you.

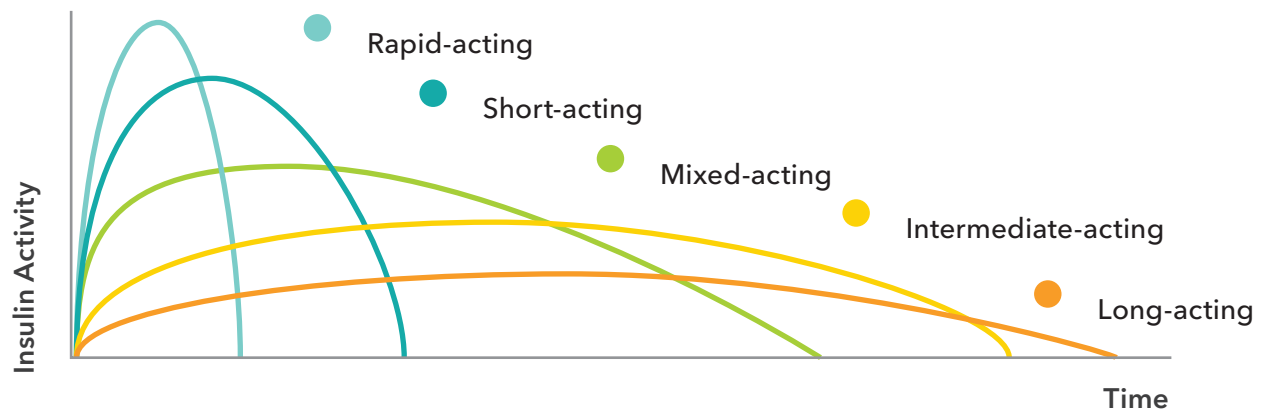
1. Clean the injection area with soap and water or an alcohol swab. Let it dry.
2. Gather up your skin to form a 1- to 2-inch fold.
3. Hold the syringe like a pencil and quickly push the needle all the way into the pinched-up area. Use a 90-degree angle.
4. Push the plunger in to inject the insulin. Wait 10 seconds.
5. Pull out the syringe and needle. If you bleed, apply light pressure over the area for a few seconds. Do not rub the area.
6. Throw away your syringe in a sturdy, non-see-through plastic container, like a disposal container from a pharmacy.

Remember to change where you inject insulin. If you use the same place over and over, your skin will get tough or lumpy and your insulin will not be absorbed properly.



How it works

Your body uses insulin in different ways. Sometimes you need insulin to work quickly to lower blood sugar. Your body also needs insulin on a regular basis to keep your blood sugar in a target range.



- Rapid-acting and short-acting insulins are usually given before mealtimes. They lower blood sugar levels quickly, and then wear off.
- Intermediate- or long-acting insulins are used to help control blood sugar throughout the day.
- Mixed insulin (a combination of rapid- or short-acting and intermediate- or long-acting insulin) is commonly used to keep blood sugar levels normal throughout the day.

A guide to insulin types

Type	Generic Name	Brand Name Examples	Onset (length of time before insulin reaches bloodstream)	Peak (time period when insulin is most effective)	Duration (how long insulin works)
● Rapid-Acting	Lispro	Humalog	15-30 minutes	30 minutes-2 hours	3-5 hours
● Short-Acting	Regular	Humulin R	30-60 minutes	2-4 hours	5-8 hours
● Intermediate-Acting	NPH	Humulin N	1-2 hours	6-10 hours	12-20 hours
● Long-Acting	Glargine	Lantus	1-2 hours	Minimal peak	Up to 24 hours
● Mixed	70/30	Humulin 70/30	30-60 minutes	2-10 hours	10-16 hours



Insulin myths

“If I take insulin, it’s proof I can’t control myself.”

FACT: Insulin production declines in every person with diabetes. It’s not a sign that you have failed. Needing more insulin over time is normal.

“I hear you can have a seizure or die from low blood sugar.”

FACT: You often feel sweaty, shaky, and hungry when your blood sugar is low, but death or a seizure is very rare in your type of diabetes. Check your blood sugar if you are feeling sweaty, shaky, and hungry to see if your blood sugar is low.

“I hear I will get really fat.”

FACT: You may gain weight, but it’s not inevitable. If you are able to take metformin, it cuts your potential weight gain in half.

“I can’t stand injections. They hurt!”

FACT: Shots used to hurt more. Now the needle is so tiny that it’s not very painful.

“If I take insulin, I will go blind, lose a foot, or my kidneys will shut down.”

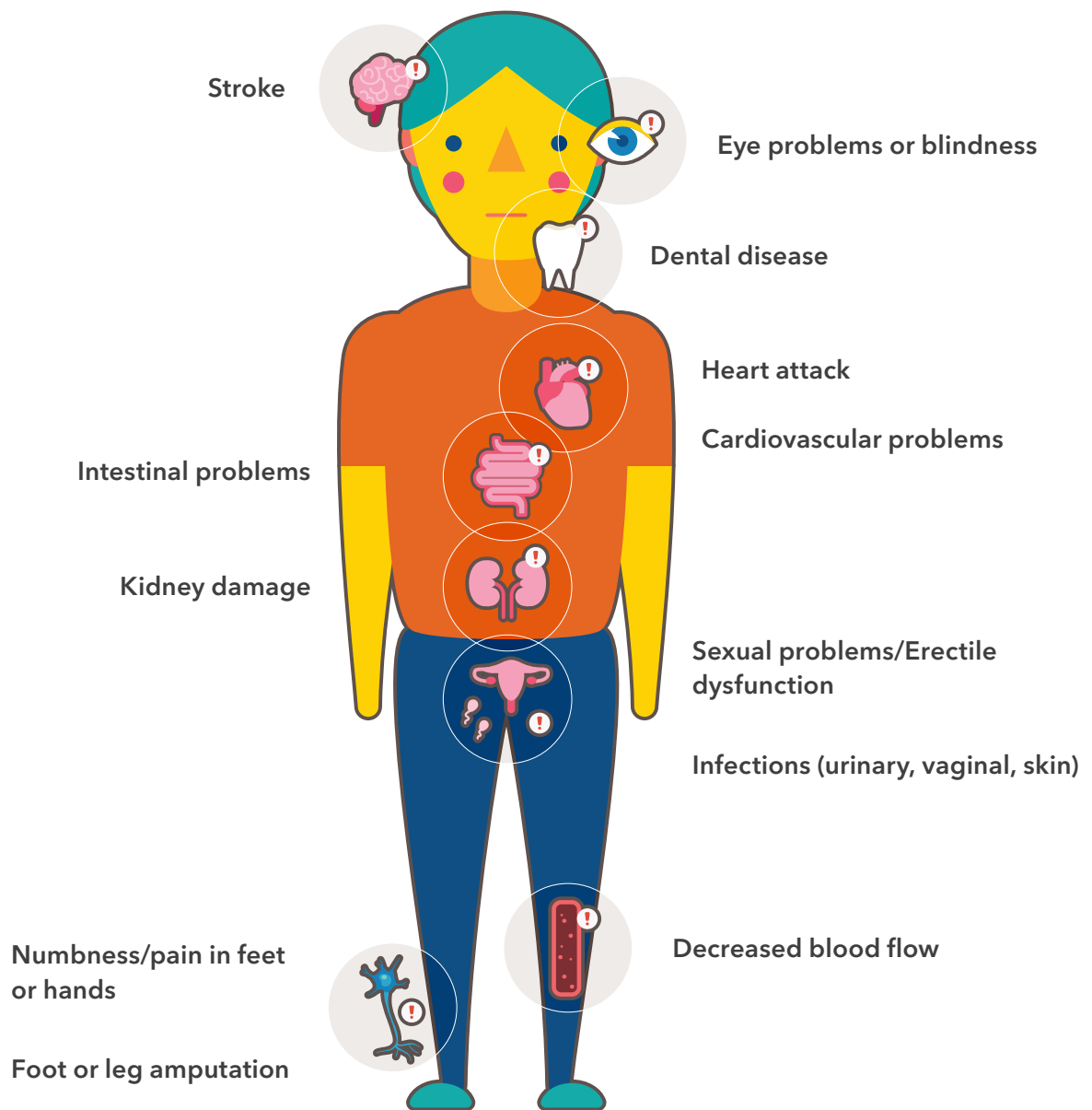
FACT: Early insulin use actually prevents these things! Some people believe this myth because insulin was used too late, after the eye, foot, or kidney problems had already started.

“Once I start using insulin, I never can stop.”

FACT: You may be able to stop. With lifestyle changes like losing weight and regular exercise, some people with type 2 diabetes may need much less insulin (and in rare cases may be able to stop using insulin altogether).

Long-term complications

High blood sugar levels over a long time can damage your body. It can lead to:



How are complications found?

- Regular medical check-ups
- Foot exam at every medical visit
- Yearly urine test for protein
- Regular dental exams
- Eye exams every 1 to 2 years
- A1C tests at intervals recommended by your doctor and care team

Report any changes in your health to your doctor.

Lowering A1C by 1 point can reduce your risk of complications by 40%.

To help prevent long-term complications:



Control your blood sugar.



Control your blood pressure and cholesterol.



Eat healthy.



Exercise regularly.



Don't smoke.



Limit alcohol.



Get good quality sleep.



Check your feet daily. Look for cuts, blisters, bruises, redness, and swelling. If you notice any of these, seek medical help.



Wear shoes that fit well (don't go barefoot). Try on and buy shoes at the end of the day for the best fit.



Keep your immunizations current.



Learn about your diabetes and how to manage it well.

You can find support and resources at Kaiser Permanente. These include workshops, online programs, and Wellness Coaching by Phone. See the resources at the end of this booklet.

Get checked out

Seeing your doctor at least twice a year is a great way to treat problems early. Use the chart on page 37 to write down the date and results of each test, exam, or shot. Take it with you to every appointment so you can address any questions or concerns you have.

ABCs of diabetes care

What	Why	How Often
A1C	<p>Keep A1C at □ < 7.0 □ 7.5-8.0 □ 8.0-9.0</p> <p>A1C is average blood sugar over 3 months.</p> <p>High A1C increases risk of complications from diabetes (vision loss, kidney failure, nerve pain).</p>	<p>2 times a year if your diabetes is under control</p> <p>4 times a year if your diabetes is not under control</p>
Blood pressure	<p>Keep BP at □ < 140/90 (general target) □ < 130/90 (your target may be different; check with your doctor)</p> <p>High blood pressure increases risk of strokes, heart attacks, and heart failure.</p>	Once every year or daily if you have a blood pressure monitor at home
Cholesterol	<p>Check cholesterol and take a statin.</p> <p>Statins decrease risk for heart attacks and strokes caused by clogged arteries.</p>	Once every year
Diabetes kidney test	<p>Check urine for microalbumin.</p> <p>Treating kidney damage early can decrease risk for kidney failure and dialysis (goal = less than 30 mg/gm).</p>	Once every year
Eye exam	<p>Check your eyes.</p> <p>Diabetes can damage blood vessels in the eyes and cause problems seeing.</p>	<p>Once every year (if last exam was abnormal)</p> <p>Once every 2 years (if last exam was normal)</p>
Foot exam	<p>Check your feet.</p> <p>Diabetes can damage the nerves in the feet. This can increase risk for foot ulcers, infections, and gangrene.</p>	Once every year

<u>Glucose testing</u>	<p>Learn how to self-monitor blood sugar (glucose). Testing your glucose before meals and bedtime can help you learn how to balance your food, exercise, and medications, especially when you are stressed or sick.</p>	<p>1 to 4 times a day, depending on whether you use pills or insulin</p> <p>Bring your meter to your Kaiser Permanente diabetes appointments.</p>
<u>Heart meds</u>	<p>Take heart medications as recommended by your doctor based on a history of heart disease or your risk for heart disease. 1. Aspirin: 81 mg daily 2. Statin: ____ mg daily 3. Lisinopril: ____ mg daily</p>	<p>Every day</p>
<u>Immunization/vaccine</u>	<p>Prevent illness. Get vaccines as recommended by your doctor and care team.</p>	<p>Flu vaccine every year Pneumonia vaccine once before age 65 and again at 65 or older</p>
<u>Just ask</u>	<p>Remember, Kaiser Permanente has a health care team to help you!</p> <ul style="list-style-type: none"> • Diabetes class • Dietitian • Smoking cessation • Weight management • Foot care for foot problems • Physical therapy for walking problems • Silver&Fit Program gym membership for members 65 and older 	<p>Anytime—just ask!</p>
<u>Kids?</u>	<p>Take folic acid (0.1 mg) once daily if you are thinking about pregnancy. Controlled diabetes lowers risk for birth defects and delivery problems.</p>	<p>Once daily</p>
<u>Libido and sexuality</u>	<p>Keep A1C less than 7. Uncontrolled diabetes can cause erectile dysfunction in men and frequent vaginal and urinary tract infections in women.</p>	<p>Check A1C : 2 times a year if your diabetes is under control 4 times a year if your diabetes is not under control</p>

My Diabetes Care Record

Each Visit	Blood sugar	Date				Result				
	Review personal action plan. Create a small lifestyle change.									
	Weight check									
	Blood pressure									
	Review medicines									
At least twice a year	Dental exam									
Once a Year	Flu shot and COVID-19 vaccination as recommended	Date				Result				
	Complete foot exam/foot check									
	Cholesterol									
	Kidney check (microalbumin)									
	Height									
As recommended by your care team	A1C									
	Dilated eye exam or retinal screening photo									
At Least Once	Pneumonia shot (two types given)	Date								
	Hepatitis B shot (3 injections over time)									



Diabetes and pregnancy

If you have diabetes, planning your pregnancy will help you and your baby be safe.

High blood sugar during early pregnancy can harm your unborn baby. It's important to have your blood sugar under control for at least 3 months before you get pregnant.

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

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

- Delaying pregnancy until your A1C is less than 6.5.
- The risks of an unplanned pregnancy.
- Other medical risks.

If you decide to get pregnant:

- Have good medical care before, during, and after your pregnancy.
- Keep your blood sugar normal before, during, and after your pregnancy.

Gestational diabetes

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

If not treated, it can cause serious health problems for you and your baby.

If you are pregnant, you can lower your blood sugar by eating right and exercising. It's important to check your blood sugar regularly so you know what affects you. Some people may need insulin. If you keep your blood sugar in control, the risks are the same as a regular pregnancy.

If you have gestational diabetes, you are at higher risk of developing type 2 diabetes later in life. It's important to have a yearly follow-up to test for diabetes.

Contact the Kupu Ola Diabetes in Pregnancy Program at 808-432-7404.

Resources

You can find many resources online. These are only a few suggestions.



Online

Kaiser Permanente

- kp.org/diabetes
- kp.org/centerforhealthyliving

CDC (Centers for Disease Control and Prevention)

- cdc.gov/diabetes



Organizations

American Diabetes Association

- 1-800-DIABETES (1-800-342-2383)
- diabetes.org

American Heart Association

- 1-800-242-8721
- americanheart.org



Apps

Calorie King

Access nutrition information

- calorieking.com

Cronometer

Track calories, exercise, biometrics, and health data

- cronometer.com

Daily Dozen

Checklist for nutrient-dense food

- nutritionfacts.org/daily-dozen-challenge

My Fitness Pal

Track food and exercise

- myfitnesspal.com

Glucose Buddy

Get reminders and track blood sugar, medications, exercise, food, weight, and blood pressure

- glucosebuddy.com

Fooducate

Scan barcodes, get nutrition information, see grades assigned to foods

- fooducate.com

Lose It!

Track calories and exercise, scan barcodes

- loseit.com

Calm

Learn how to meditate and get more restful sleep

- kp.org/selfcareapps (log in to your account to get this app at no cost)

MyStrength

Improve your awareness and adapt to life

- kp.org/selfcareapps (log in to your account to get this app at no cost)



Magazines

Diabetes Self-Management

- 1-855-367-4813
- diabetesselfmanagement.com

Diabetes Health

- PO Box 1199, Woodacre, CA 94973-1199
- diabeteshealth.com

Diabetes Forecast

- diabetesforecast.org

Diabetic Living

- diabeticlivingonline.com



Fitness resources

Active&Fit Direct

Access to more than 11,000 gyms with one membership or access exercise videos at home

- kp.org/exercise

ClassPass

Unlimited on-demand video workouts at no cost and reduced rates on in-person fitness classes

- kp.org/exercise


Some resources listed are offered by organizations outside of Kaiser Permanente. Kaiser Permanente is not responsible for any fees or costs associated with them.

Notes


Notes

A large, empty rectangular box with a thin black border, intended for taking notes. It occupies most of the page below the 'Notes' header.

Notes



Notes

A large, empty rectangular box with a thin black border, intended for taking notes. It occupies most of the page below the 'Notes' header.

Adapted with permission from Health Engagement and Wellness Services,
Kaiser Permanente Northwest, and Center for Healthy Living,
Southern California Permanente Medical Group.

©2022 Kaiser Permanente. All rights reserved.
CHL089e (3/22)
kp.org