Sutter Health

Diabetes self-care guide

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Table of contents

Introduction 1

What is diabetes? 2

Diagnosis of diabetes 3

Healthy eating 4

Being active 5

Why is it important to check my blood sugar? 6

Continuous Glucose Monitoring (CGM) 7

What is the A1C lab test? 8

Why is it important to take my medications? 9

Managing my blood sugar at home 10

Driving and low blood sugar 11

Managing your blood sugar when sick 11

APPENDIX

A. What do I need to know about insulin? 12

B. How do I use an insulin pen? 13

C. How do I inject using a vial (bottle) and syringe? 14

D. Selecting an injection site 15

E. What do I need to know about concentrated and inhaled insulin? 16

F. What do I need to know about my diabetes pills 17

G. What do I need to know about my non-insulin injectables? 19

H. Using the plate method for a healthy meal 20

I. Carbohydrate choices 21

J. Non-starchy vegetables 24

K. Proteins and fats 25

L. How do I read a food label? 27

M. Home insulin plan 28

N. Diabetes resources 29

Welcome!

This booklet will help you take care of your diabetes, prediabetes or high blood sugar (glucose). As you learn, you will be better equipped to adjust your lifestyle for better health. Emotions like sadness, confusion, denial, fear, anxiety or even depression about diabetes are common. Remember, you are not alone. You have the support of your healthcare team.

The good news is that you are in charge! Although diabetes is a lifelong condition, with the right tools and resources, it can be managed so you can live a healthy life.

You can manage your diabetes by keeping your blood sugar within your target range to reduce risks of developing complications, such as:

- Heart disease
- Kidney disease
- Eye disease
- Nerve damage
- Infections
- Strokes

Allow yourself some time to practice and learn how to manage your diabetes. As you work with your healthcare team, you will receive information on:

- Healthy eating
- Exercise
- How to check your blood sugar and understand the results
- Medications
- Problem-solving
- Lowering risks of diabetes complications
- Healthy coping and stress management

Diabetes education is important. You can manage your diabetes by:

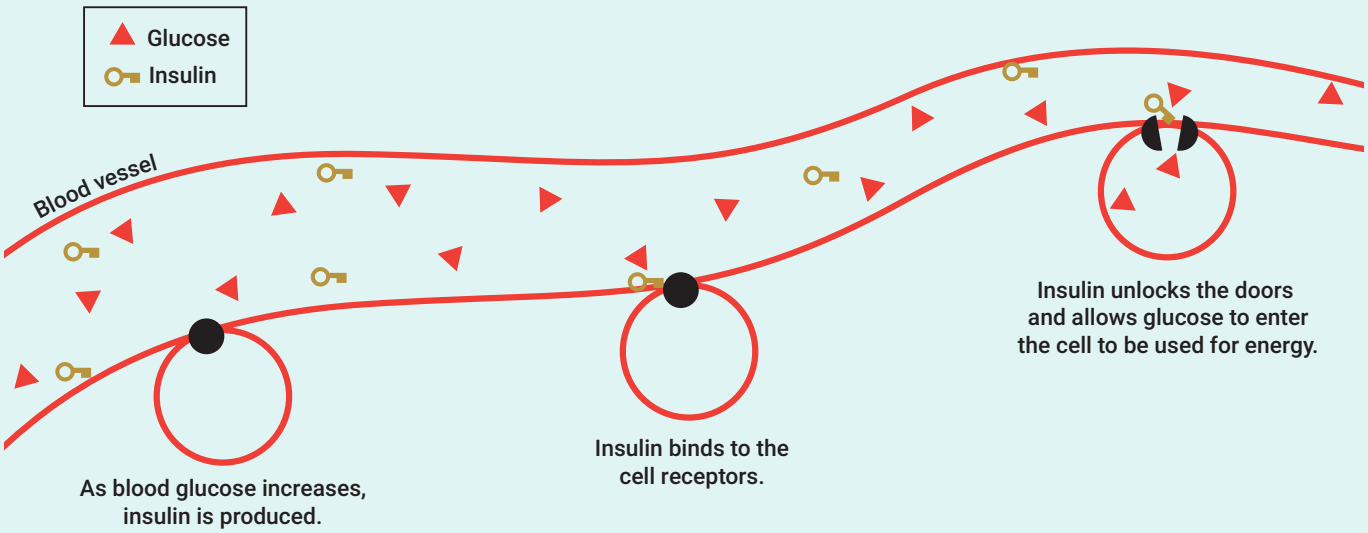
- Attending Diabetes Self-Management Education (DSME) classes
- Getting nutrition counseling with a dietitian
- Logging in to trusted websites (see pg 29)
- Communicating concerns and/or questions to your healthcare team.

What is diabetes?

Diabetes occurs when:

- The body does not make enough insulin
- The body cannot use insulin well (called insulin resistance)
- The body does not make insulin (called insulin deficiency)

All the cells in the body need sugar (glucose) for energy. Insulin acts like a "key" that attaches to the cell and opens the "door" to the cell. Once the cell doors are open, sugar leaves the bloodstream and goes into the cell to be used for energy. Without insulin, the cell doors stay locked and sugar cannot pass through, which leads to high blood sugars.



Types of diabetes

Type 1 diabetes: The immune system mistakenly attacks the pancreas, damaging it so that it can no longer make insulin. Without insulin, blood sugar levels in the body become high. People with Type 1 diabetes need to take insulin in order to live.

Type 2 diabetes: The body's cells don't respond properly to insulin, a condition known as insulin resistance. As a result, sugar builds up in the blood instead of moving into the cells for energy. In response, the pancreas produces more insulin, but over time it may not be able to keep up, leading to high blood sugar levels.

Prediabetes: Occurs when blood sugar levels are higher than normal, but not high enough to be diagnosed with diabetes. Prediabetes increases the risk of developing Type 2 diabetes. Research has shown that healthy eating, weight loss and lifestyle changes can help delay or prevent Type 2 diabetes in people with prediabetes.

Other types of diabetes: Secondary diabetes happens when the blood sugar level increases due to other conditions, such as taking steroids or certain psychiatric medications. Other conditions may also include severe illness and medical conditions such as cystic fibrosis.

Diagnosis of diabetes

	Normal blood glucose	Prediabetes	Diabetes
Fasting blood glucose (mg/dL)	Less than 100	100–125	126 or higher
Blood glucose two hours after a 75-gram glucose tolerance test (mg/dL)	Less than 140	140–199	200 or higher
Random blood glucose (mg/dL)			200 or higher (in a person having symptoms)
A1C (%)	Less than 5.7	5.7–6.4	6.5 or higher

Risk factors for Type 2 diabetes

- Smoking
- Unhealthy eating
- Prediabetes
- Older age
- Overweight or obese
- Physical inactivity
- Family history of diabetes
- Ethnic populations that are at higher risk: African American, Latino, Native American, Asian American, Pacific Islander
- Gestational diabetes or if you had a baby that weighed more than 9 pounds
- History of heart disease
- High blood pressure
- High-density lipoprotein (HDL) cholesterol less than or equal to 35 mg/dL
- Triglyceride level greater than or equal to 250 mg/dL
- Polycystic ovarian syndrome

Healthy eating

How you eat is important for managing your diabetes and overall health. Healthy eating is recommended for you and your entire family. Work with your healthcare providers and dietitian to learn what to eat, how much to eat, and when to eat. Healthy eating will help you manage your blood sugar levels and weight. It also lowers your risk of heart disease and other diabetes complications.

Which foods turn into sugar?

Carbohydrates are nutrients that turn into sugar. They fuel the body and brain and have the biggest impact on blood sugar. Carbohydrates are important nutrients and should be included in small amounts at each meal in order to control your blood sugar.

Which foods have carbohydrates?

- Starchy foods like bread, rice, pasta, beans and tortillas
- Starchy vegetables like corn, peas and potatoes
- Fruit
- Milk and yogurt
- Sweets and desserts

Do I have to avoid sweets and desserts?

Most desserts, cookies, cakes, sugar, honey, juice and regular soda are high in carbohydrates and can be hard to include in your carbohydrate plan. These items should be avoided but you can eat them from time to time in small amounts.

How many carbohydrates do I need?

Work with your healthcare provider or dietitian to help you figure out how many carbohydrates you need at each meal and snack. You may need different amounts of carbohydrates when your activity level changes, when you are sick or when you are trying to lose weight.

General ranges below are based on one carbohydrate choice equal to 15 grams of carbohydrate:

- 2–4 carbohydrate choices per meal (30–60 grams)
- 1–2 carbohydrate choices per snack (15–30 grams)

What is healthy eating?

Eat well-balanced meals with a variety of foods. Here are some healthy choices:

- High-fiber carbohydrates, such as whole grains, fresh or frozen fruits, and beans.
- Low-fat animal protein such as fish, seafood, fat-free and low-fat milk, yogurt, and poultry without the skin.
- Heart-healthy fats such as olive, canola, grapeseed or peanut oil, avocado, nuts and seeds.
- Avoid saturated fat found in animal products and tropical oils like palm or coconut oil.
- Eat up to 8 ounces of fish in a week. Select fish that is a good source of omega-3 healthy fats (salmon, albacore tuna, mackerel, herring, lake trout and sardines).
- Choose a variety of fresh or frozen vegetables.

** Find more healthy eating tips in appendices H–L on pages 20–27.*

Being active

Being physically active helps to keep your blood sugar in a healthy range. Exercise is as important as taking your medication, checking your blood sugar and eating healthy.

Exercise is important because it:

- Lowers blood sugar and improves the way insulin works
- Lowers blood pressure
- Lowers cholesterol and triglyceride (blood fat) levels
- Lowers your risk of heart disease and stroke
- Relieves stress and can improve your mood
- Burns calories, helping you manage your weight
- Improves energy and ability to concentrate
- Helps you sleep better at night
- Reduces your risk of falls and supports bone health

How often should I exercise?

A general goal is to exercise at least 30 minutes a day, five days a week. You can break up your 30 minute session into three 10-minute sessions. Include weight resistance exercises two to three times per week on non consecutive days. You can work with your healthcare team to come up with an individualized plan.

How can I exercise safely?

- Check your blood sugar before and after exercising.
- Keep your meter and supplies with you.
- Bring a fast-acting carbohydrate snack with you.
- Find an exercise buddy, if possible.
- Carry a cell phone.
- Wear or carry a medical alert ID.
- Check your feet for blisters, cuts and reddened areas before and after exercising.
- Protect your feet with socks and shoes that fit well and are soft and absorbent.
- Drink enough water to replace what you lose from sweating.

Before you begin an exercise program, talk with your healthcare provider to ensure the activity is safe for you.

Why is it important to check my blood sugar?

Regularly checking tells you how food, exercise, medication, or stress affects your blood sugar. Knowing this information, and keeping a record of it, can help you and your healthcare provider improve your blood sugar levels.

What should my blood sugar be?

Your healthcare provider will tell you what target blood sugar range is safe for you. The goal is to keep your blood sugar level as close to your target range as possible to stay healthy. The chart below includes the blood sugar goals from the American Diabetes Association.

Time of Check	Acceptable Range	My Target Range
When you first wake up or before meals	80–130 mg/dL	mg/dL
2 hours after the start of a meal	Less than 180 mg/dL	mg/dL
Bedtime or before driving or exercising	100–150 mg/dL If less than 100 mg/dL, have at least a 15-gram carbohydrate snack with you when driving or exercising or have 15-gram carbohydrate snack at bedtime.	mg/dL

Tips for accurate blood sugar testing with a glucose meter:

1. Ask your doctor or healthcare team when to check your blood sugars.
2. Here are some options to learn how to use your glucose meter:
   a. Ask your doctor for a referral to see a diabetes educator.
   b. Ask the pharmacist how your glucose meter works when you pick it up at the pharmacy.
   c. Follow the testing instructions that come with your glucose meter or call the manufacturer's toll-free number on the back of the glucose meter.
3. Thoroughly wash your hands with soap and water before you check. Food or liquid on your hands can affect your results.
4. Write down your results. Bring your results and your meter when you visit your doctor or healthcare team.
5. Keep all unused test strips in the container, tightly capped. Do not use expired test strips.
6. Lancets should be disposed of in a sharps container after each use.

Continuous Glucose Monitoring (CGM)

Continuous glucose monitoring (CGM) is a system with the following features:

- The sensor (often referred to as a patch) contains both a filament and transmitter.
- The filament is placed just beneath the surface of the skin which measures sugar levels throughout the day and night.
- A CGM checks your sugar levels in the fluid between your cells, not directly in your blood like a regular fingerstick test. Because of this, and other possible factors CGM readings may be a little behind your actual blood sugar levels.
- The transmitter sends the blood sugar level to a device or your phone.
- The CGM stays on for 10-15 days depending on the manufacturer.

CGM readings

- CGMs provide a continuous stream of blood sugar data for a more complete picture of your values throughout the day and night.
- You will see your sugar value, and the direction your sugar is going (trend arrow).
- CGM's first day: With newly inserted sensors, the differences between your glucose meter and the CGM number may be greater. Generally, the numbers get closer over the first 24 hours.
- Pressure on CGM: Sometimes when something is pressing on your sensor, for example, if you're lying on it, it can affect your CGM readings.
- Glucose changing quickly: When sugars are changing quickly, a larger difference between blood glucose and interstitial fluid may occur. The numbers should be closer when sugars stabilize.

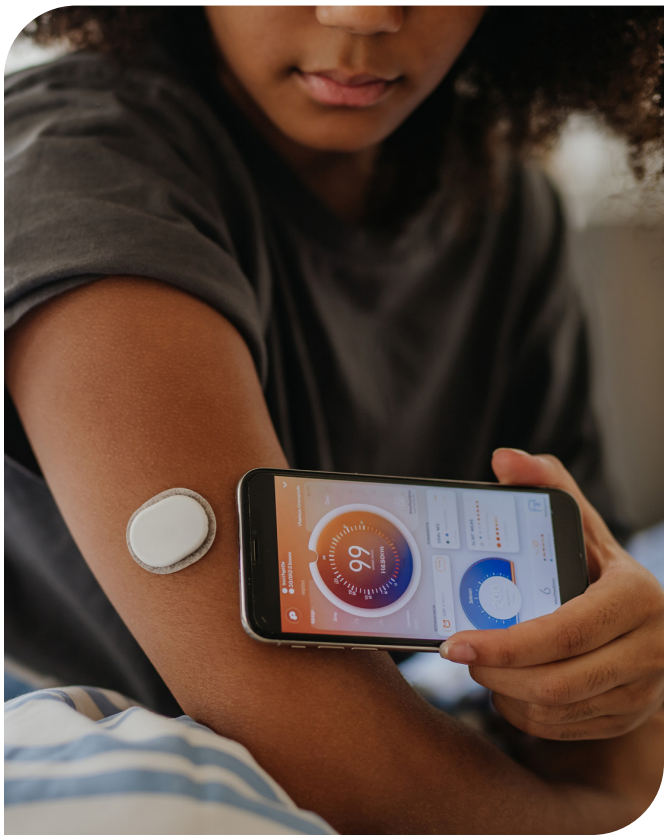
Types of CGMs

Prescribed CGMs

- For individuals that have Type 1 diabetes, Type 2 diabetes who take insulin or other diabetes medications, or individuals with prediabetes.
- These CGMs can alarm if your blood sugar is high or low.

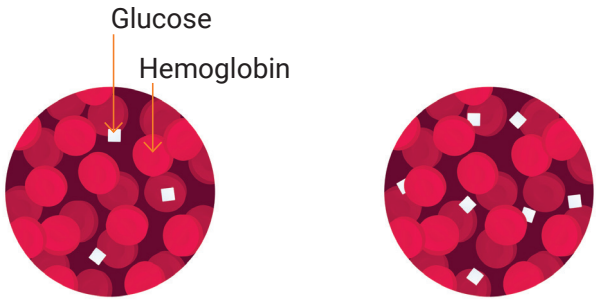
Over the counter CGMs

- You can purchase these without a prescription from the company's website.
- Recommended for people with Type 2 diabetes who are not on insulin or at risk for a low blood sugar, or for people with pre-diabetes.
- These CGMs will not alarm if you are high or low and display a limited blood sugar range.



What is the A1C lab test?

The A1C blood test provides an average blood sugar level from the previous two to three months. When your blood sugar is high, more sugar sticks to your red blood cells, resulting in a higher A1C. Your healthcare provider may order this test every three to six months.



Low A1C

High A1C

The A1C level tells your doctor or healthcare team if your diabetes care plan is working. If your level is above your target A1C goal, your treatment plan may need to be changed. A1C goals:

- The American Diabetes Association (ADA) recommends keeping your A1C under 7% to prevent complications of diabetes.
- Your provider might suggest a goal less than 6.5% if you can achieve this goal without significant low blood sugar, or if you are planning to become pregnant to reduce the risk of birth defects.
- Your provider might suggest a goal of 7–8% if you have severe or frequent low blood sugars or if you have multiple medical conditions.

	A1C (%)	Estimated average glucose (mg/dL)
ADA goal	6	126
	7	154
Action suggested	8	183
	9	212
Immediate action suggested	10	240
	11	269
	12	298

Why is it important to take my medications?

Along with healthy eating and regular physical activity, taking medications regularly is another powerful tool that can help keep blood sugar in your target range. Diabetes medications work on different parts of the body, so your healthcare provider may order one or more medications to manage your blood sugar. Talk to your healthcare provider about which medications are best for you.

- Keep your medications visible: Store them somewhere you'll see at the right time.
- Pill organizers: Weekly or monthly pillboxes help you see whether you've taken your dose.
- Blister packs or pharmacy prepacks: Some pharmacies can prepackage your meds by time of day.
- Set phone alarms or reminders: You can name each alarm.
- Use a medication reminder app: They can track doses and send alerts.
- Smart devices: Smartwatches, Alexa, or Google Assistant can give verbal reminders.
- Sticky notes: Put them where you'll notice (fridge, mirror, computer).
- Medication chart: Check off doses when taken.
- Have someone check in on you (friend or family member).
- Let your healthcare provider know if you are having difficulty remembering to take your medications. They may suggest simplifying your regimen or adjusting your medication schedule.

** For medication lists and how to give insulin, please see appendices A–G on pages 12–19.*

Managing my blood sugar at home

Symptoms of low blood sugar (hypoglycemia)

- Confused, light-headed or dizzy
- Sweaty or shaky
- Hunger
- Headache
- Fast or pounding heartbeat
- Drowsy or sleepy
- Irritable
- Slow speech

If your blood sugar is less than 70:

If your blood sugar level is low, usually below 70 mg/dL, eat or drink 15 grams of fast acting carbohydrates such as:

- Three to four glucose tablets*
- One tube of glucose gel*
- Liquid glucose such as Dex4 Glucose Liquid Blast®*
- ½ cup (4 ounces) of fruit juice
- ½ cup (4 ounces) of regular soda (not sugar-free) soda
- 1 cup (8 ounces) of skim milk
- Six to eight Life Savers® or SweeTARTS®
- 15 Skittles® or Jelly Belly® jelly beans
- 1 tablespoon sugar, jam, honey, or syrup

After **15 minutes**, check your blood sugar again. If your level is still low, **eat or drink 15 more grams of carbohydrates.** Once your blood sugar level is in your goal range, eat a meal or light snack.

Common causes for low blood sugar include skipping meals, more exercise than usual without a snack, too much diabetes medication or drinking alcohol on an empty stomach.

** Available without a prescription at drugstores.*

Symptoms of high blood sugar (hyperglycemia)

- Increased thirst
- Frequent urination (peeing)
- Blurry vision
- Drowsy or sleepy
- Hunger
- Slow healing of wounds
- Dry skin

High blood sugar plan

It is important that you and your healthcare provider find out the reason for your high blood sugar. Allowing blood sugar levels to remain high harms your body and will increase your risk for complications. When blood sugar levels are very high (above 300 mg/dl), you can become dehydrated and get sick very quickly.

- Keep a record of the times you have high blood sugar levels and note any possible causes (overeating, little exercise, not taking medications, extreme stress, sickness or infection). Your diabetes plan may need to be changed.
- When your blood sugar is high, you need to stay hydrated. Drink plenty of calorie-free or low-calorie liquids such as water, sugar-free soda, caffeine-free teas and broth.
- Ask your healthcare provider when to call the office.

Whether your blood sugars are low or high, it is important to discuss these levels with your healthcare provider. Your diabetes plan may need to be changed.

Driving and low blood sugar

Driving with low blood sugar is very dangerous and puts you and others at risk for injury. To be safe, check your blood sugar before driving. Always carry your blood glucose meter, glucose tabs and a small snack with you. That way, if you get stuck in traffic or your blood sugar gets low, you can treat it.

Do not drive if your blood sugar is below 70 mg/dL or you have symptoms of low blood sugar.

Managing your blood sugar when sick

How can I manage my blood sugar when I'm sick?

- Check your blood sugar every two to four hours.
- If you cannot eat or are vomiting, ask your healthcare provider if you should adjust the dose of your diabetes medication (pills/insulin).
- Drink plenty of sugar-free fluids such as water, broth or tea (decaffeinated). Drink about 8 ounces of sugar-free fluids every hour you are awake.
- If you have Type 1 diabetes, check for urine ketones as directed by your provider.
- If you are too sick to eat regular food, drink a liquid or eat a snack every one or two hours that gives you 10–15 grams of carbohydrates, such as:
  - 4 ounces (½ cup) of regular gelatin
  - 1 regular double popsicle
  - 4 ounces (½ cup) applesauce
  - 6 ounces (⅔ cup) yogurt
  - 6 ounces (¾ cup) regular soda
  - 4 ounces (½ cup) fruit juice
  - 8 ounces (1 cup) sports drink
  - 8 ounces (1 cup) soup
  - 6 soda crackers
  - 1 slice of toast

When should I call my healthcare provider?

- You have a cold, flu, fever of 102° F (38.9° C) or higher, nausea, throwing up or diarrhea.
- Your blood sugar was greater than 200 most of the time in the last week, or you have had low blood sugars (less than 70 mg/dL).

Appendix

APPENDIX | A

What do I need to know about insulin?

Insulin type and name	Onset (When it starts to work)	Peak (When it lowers the glucose the most)	Duration (How long it stays in the body)	Use & Expiration (When dose is usually taken or as directed by your doctor or healthcare team)
Rapid acting Insulin aspart (Novolog®) Insulin lispro (Humalog®, Admelog®) Insulin glulisine (Apidra®)	5–15 minutes	30–90 min	3–5 hours	Take within 15 minutes before meals. Once opened, good for 28 days
Short acting Regular Insulin Humulin® R Novolin® R	30–60 minutes	2–3 hours	5–8 hours	Take 30 minutes before a meal. • Humulin R vial: once opened, good for 31 days. • Novolin R vial: once opened, good for 42 days. • Novolin R flexpen: once opened, good for 28 days.
Ultra-rapid acting Insulin aspart (Fiasp) Insulin lispro (Lyumjev®)	2–5 minutes	60 minutes	3–5 hours	Take immediately before a meal. • Lyumjev: once opened, good for 28 days. • Fiasp: once opened, good for 28 days.
Intermediate acting NPH (cloudy insulin) Humulin®N Novolin® N	2–4 hours	4–10 hours	10–16 hours	Roll vial or pen to mix. • Humulin N vial: once opened, good for 31 days. • Humulin N pen: once opened, good for 14 days. • Novolin N vial: once opened, good for 42 days. • Novolin N pen: once opened, good for 28 days
Long acting insulin glargine Lantus®, Basaglar®, Semglee®, Rezvoglar®	2–4 hours	No peak	Up to 24 hours	Usually take 1-2 times daily. Take at the same time every day. Once opened, good for 28 days.
Long acting insulin degludec U-100 Tresiba®	60 minutes	No peak	Up to 42 hours	Usually take 1-2 times daily. Take at the same time every day. Once opened, good for 28 days.
Pre-mixed (intermediate + short acting) Humulin® 70/30 Novolin® 70/30	30–60 minutes	2–12 hours	10–16 hours	Usually taken before breakfast and dinner. • Humulin 70/30 vial: once opened, good for 31 days. • Humulin 70/30 pen: once opened, good for 10 days. • Novolin 70/30 vial: once opened, good for 42 days. • Novolin 70/30 pen: once opened, good for 28 days
Pre-mixed (intermediate + rapid acting) Humalog-Mix® 75/25 Novolog-Mix ® 70/30	5–15 minutes	30 minutes to 1-6 hours	10–16 hours	Usually taken before breakfast and dinner. • Humalog-Mix 75/25 vial: once opened, good for 28 days. • Humalog-Mix 75/25 pen: once opened, good for 10 days. • Novolog- Mix 70/30 vial: once opened, good for 28 days. • Novolog- Mix 70/30 pen: once opened, good for 14 days.

How do I use an insulin pen?

1. Wash your hands and gather supplies: insulin pen, pen needle, alcohol swabs.


2. Remove the pen cap. Check insulin for type, expiration date and appearance. Wipe the rubber stopper with alcohol swab. For cloudy insulin, mix the insulin by rolling the pen. Rolling is not needed for clear insulin.

3. Attach a new pen needle by screwing it into place, then remove both the outer and inner needle caps.


4. Always test the flow of your pen before you inject. Turn the dose button to 2 units. Holding your pen with the needle pointing up, press the dose button until it goes back to "0". Check that you see insulin drops coming out from the needle tip. If you do not see insulin come out after four attempts, remove the needle and place a new needle.

5. Dial your insulin dose by turning the dial at the end of pen.

6. Prepare the injection site by cleaning with an alcohol swab and allow the skin to dry. Inject the dose and hold for 6–10 seconds before releasing. A pinch up of skin is usually not necessary with pen needle length 5 mm or less.

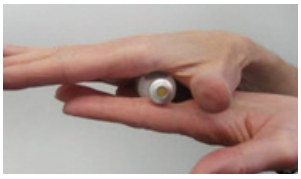
7. Place the outer cap on the needle and remove the disposable needle from the pen (pen needles are used one time only).

8. Throw the needle away in a hard plastic container (sharps container). Replace pen cap. Store pens per manufacturer's instruction.


How do I inject using a vial (bottle) and syringe?

1. Wash your hands and gather supplies: insulin bottle, syringe and alcohol swabs.

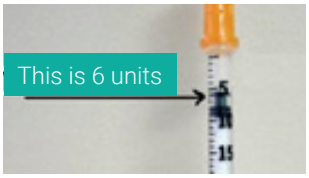
2. If you take cloudy insulin, roll the bottle between your hands for one minute. Rolling is not needed with clear insulins.



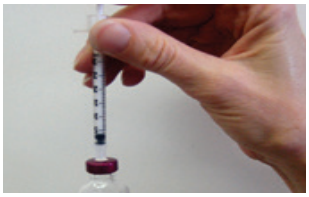
3. If opening a new bottle, remove the plastic cap (and discard). Wipe the top of the bottle with an alcohol swab.

4. Remove the caps from both the top and bottom of the syringe. Do not touch the needle.

5. Note the amount of insulin you will need. Pull the plunger down until you fill the syringe with that amount of air. Check insulin for type, expiration date and appearance.



6. With the bottle on the table, insert the needle into the top of the bottle. Push the plunger down to inject the air into the bottle.



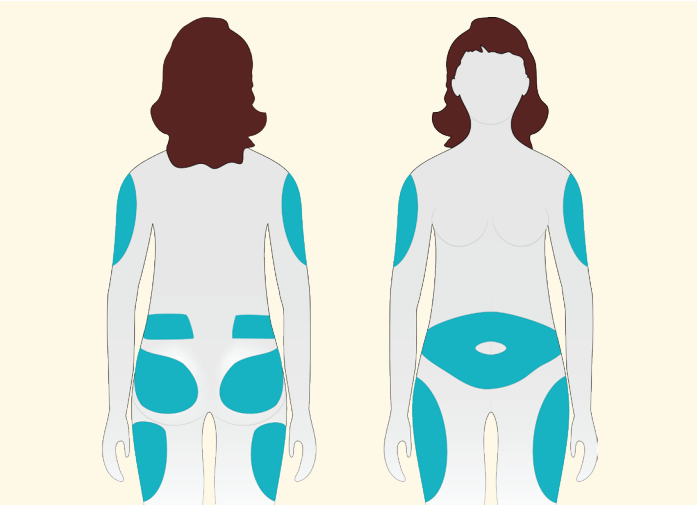
7. Turn the bottle upside down with the needle still in the rubber stopper. Hold the bottle at eye level. Make sure the needle is in the bottle. Pull plunger down to fill the syringe with insulin. To get the right number of units, line the top of the black end of plunger to the number of insulin units needed. Check for air. If no air seen, pull needle out of bottle. If air is seen, push insulin back into bottle and draw insulin out again.

8. Prepare the injection site by cleaning with an alcohol swab and allow the skin to dry. Holding syringe like a pencil, insert the needle into the skin at a 90 degree angle. Push plunger until all insulin is injected. Throw syringe away in a hard, plastic container (sharps container).

Selecting an injection site

Generally, the best place for you to inject insulin is into your abdomen (belly). You may also inject insulin into the outer side of the upper arm (avoiding deltoid muscle), the small of the back, the thigh or the buttocks. To work best, insulin is injected into the fatty tissue beneath the skin.

It is important to move the injection site by at least two inches each time in order to avoid building up scar tissue.



How do I store my insulin pens and vials (bottles)?

In use	Not in use
• Write the date on the insulin pen or vial once you first open it. • Store the pen or vial you are using at room temperature or in the door of the refrigerator. • Avoid extreme temperatures. Insulin will not work correctly if exposed to very hot (more than 86°F (30.0° C)) or very cold temperatures. • Do not keep insulin in a parked car or in direct sunlight. • Once opened, most insulins can be stored at room temperature or in the refrigerator for 28 days. Follow the manufacturer's guidelines.	• Keep all unopened insulin in the refrigerator (do not freeze). • Insulin will be good until the expiration date on the box if unopened and stored in the refrigerator. • Never use insulin past its expiration date. *** If insulin color changes, is clumpy, has anything floating in it, or is expired, properly dispose of using a community drug take-back bin or mail-back program. Locations can be found at medtakebackcalifornia.org.**

What do I need to know about concentrated and inhaled insulin?

Name/concentration	Onset (When it starts to work)	Peak (When it works the strongest)	Duration (How long it stays in the body)	Considerations
Humulin® Regular U-500 500 units insulin/mL Kwikpen or Vial	30–60 minutes	2–4 hours	13–24 hours	• 5 times the concentration of U-100 insulin. • 3 mL pen. Once opened, good for 28 days. • 20 mL vial. Once opened, good for 40 days. Use designated U-500 syringe.
Humalog® KwikPen (lispro) U-200 200 units insulin/ mL	5–15 minutes	30–90 minutes	3–5 hours	• 2 times concentration of U-100 insulin. • 3 mL pen. Once opened, good for 28 days.
Toujeo® Solostar (glargine) U-300 Pen 300 units insulin/mL	6 hours	No peak	Up to 36 hours	• 3 times concentration of U-100 insulin. • 1.5 mL pen. Once opened, good for 42 days.
Tresiba® FlexTouch (degludec) U-200 Pen 200 units insulin/mL	1 hour	No Peak	Up to 42 hours	• 2 times concentration of U-100 insulin. • 3 mL pen. Once opened, good for 8 weeks.
Inhaled insulin Afrezza® Inhaled regular human insulin	15 minutes	1 hour	3 hours	• Side effects: hypoglycemia, throat irritation, cough. • Dose range: 4, 8, 12 unit cartridges before meals.

What do I need to know about my diabetes pills?

Drug type/ How it works	Generic name	Brand name: Dose range	Side effects	Considerations/ Instructions
Biguanide Decreases amount of sugar released from liver.	**metformin** **metformin ER**	500-2500 mg	Nausea, diarrhea, bloating, B12 deficiency, does not cause weight gain or low blood sugar	• Take with food to avoid gastrointestinal (stomach and gut) side effects. • Liver and kidney function tests are needed regularly
Sulfonylurea Helps the pancreas release more insulin.	**glipizide** **glipizide ER**	2.5-40 mg 2.5-20 mg	Low blood sugar especially in those with kidney disease, possible weight gain, rash	• **Do not take if meal is skipped.** • Risk for low blood sugar. • Take once or twice daily before meals (glipizide and glyburide are taken 30 minutes before meals, glimepiride is taken with first meal of the day).
	glyburide	1 .25-20 mg 0.75-12 mg		
	glimepiride	1 -8 mg		
Dipeptidyl peptidase-4 (DPP-4) Inhibitor Lowers blood sugar when it is high, especially after a meal. Lowers amount of sugar released by the liver.	**sitagliptin**	Januvia®: 25–100 mg	Headache, joint pain, upper respiratory infection, stuffy or runny nose, sore throat, headache	• Take with or without food. • Kidney function tests are needed regularly • Do not use if taking a GLP1
	saxagliptin	2.5–5 mg		
	linagliptin	Tradjenta®: 5 mg		
	alogliptin	6.25–25 mg		
Sodium-glucose Cotransporter-2 (SGLT2) Inhibitor Works on the kidneys to help remove extra sugar through urine.	**empagliflozin**	Jardiance®: 10–25 mg	Urinary tract infections, yeast infections, urinating more often, weight loss	• Take with or without food • Do not take if you are unable to eat or throwing up • Stay well hydrated • May lower blood pressure, monitor your blood pressure at home • To reduce risk of infection, keep your genital area clean
	dapagliflozin	Farxiga®: 5–10 mg		
	ertugliflozin	Steglatro: 5–15 mg		
	canagliflozin	Invokana®: 100–300 mg		
	bexagliflozin	Brenzavvy: 20 mg		

Continued next page

Drug type/ How it works	Generic name	Brand name: Dose range	Side effects	Considerations/ Instructions
Thiazolidinedione Improves the way insulin works in the body.	**pioglitazone**	Actos®: 15–45 mg	Swelling, weight gain, risk for fractures	• Take with or without food. • Report swelling, rapid weight gain or shortness of breath to your healthcare provider.
Alpha-glucosidase inhibitor Slows the breakdown of carbohydrates in the intestines to slow the rise of blood sugar	**acarbose**	25–300 mg with meals	Stomach upset (bloating, gas, diarrhea, nausea, cramps)	• **Do not take if meal is skipped.** • Take with first bite of meal. • Treat low blood sugar with glucose tabs, gel, or milk.
	miglitol	25–300 mg with meals		
Meglitinide Helps the pancreas release more insulin right after meals to lower your blood sugar.	**repaglinide**	0.5–4 mg before meals	Low blood sugar, weight gain, stomach upset	• **Do not take if meal is skipped.** • Take 15–30 minutes before a meal. • Risk of low blood sugar.
	nateglinide	60–120 mg before meals		

Combination oral medications

Combination oral medications are listed to the right. They are two medications in one pill. They can have benefits and side effects of each one of the medications.

Actoplus Met® (pioglitazone/metformin)
Avandamet® (rosiglitazone/metformin)
Duetact® (pioglitazone/glimepiride)
Glucovance® (glyburide/metformin)
Glyxambi® (empagliflozin/linagliptin)
Invokamet® (canagliflozin/metformin)
Janumet® (sitagliptin/metformin)
Janumet® XR (sitagliptin/metformin)
Xigduo® XR (dapagliflozin/metformin)
Jentadueto® (linagliptin/metformin)
Kazano® (alogliptin/metformin)
Kombiglize® XR (onglyza/metformin XR)
Metaglip™ (glipizide/metformin)
Oseni® (alopgliptin/pioglitazone)
Qtern® (saxagliptin/dapagliflozin)
Synjardy® (empagliflozin/metformin)
Synjardy® XR (empagliflozin/metformin XR)

What do I need to know about my non-insulin injectables?

Drug type/ How it works	Generic name	Brand name: Dose range	Side effects	Considerations/ Instructions
GLP-1 agonist Helps the pancreas make more insulin when blood sugar is high. Keeps you full longer by slowing down digestions. Lowers amount of sugar released by the liver.	**semaglutide**	Ozempic®: 0.5 mg–2 mg once weekly	Nausea, vomiting, diarrhea, constipation, decreased appetite, weight loss	• Rybelsus oral agent taken without food with no more than 4 ounces of water. Do not take other medications for 30 minutes. • Byetta is taken within one hour of the morning and evening meals • All other injectables (other than Byetta) can be taken with or without food • If you are having severe abdominal pain, stop the medication and call your provider
	semaglutide	Rybelsus: 3-14 mg once daily		
	dulaglutide	Trulicity®: 0.75 mg - 4.5 mg once weekly		
	liraglutide	Victoza®: 0.6 mg-1.8 once daily		
	exenatide **exenatide XR**	Byetta® 5-10 mcg twice daily Bydurein® Bcise .2mg once weekly		
	tirzepatide	Mounjaro 2.5-15 mg once weekly		

If you are experiencing any side effects of the medicine that is prescribed to you, contact your doctor or healthcare team for further instructions.

APPENDIX | H

Using the plate method for a healthy meal

The plate method is a good way to plan well-balanced meals that are limited in carbohydrates.

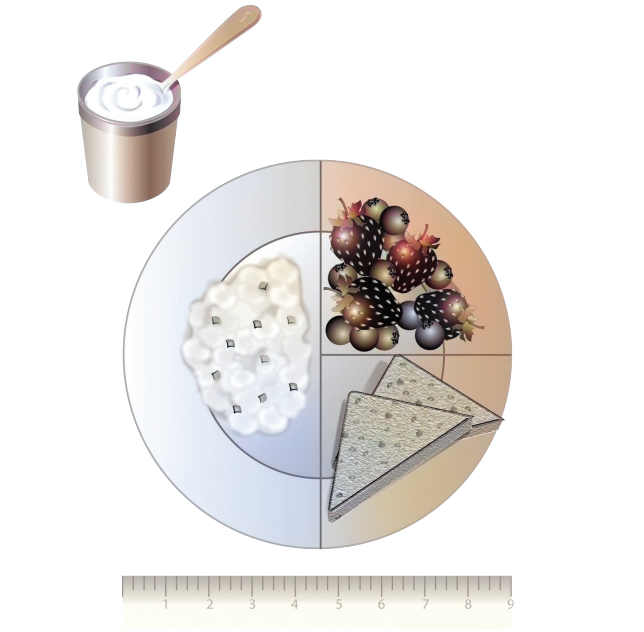
Divide your food groups on a 9- to 10-inch plate as shown in the diagram.

A common goal for meals may include two to four servings of carbohydrates.

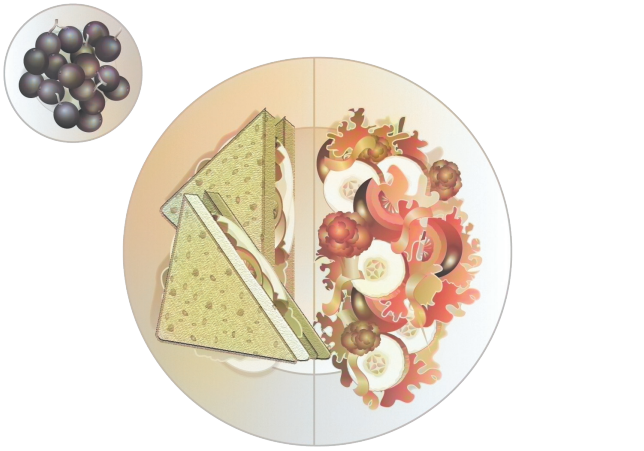
General guidelines:

- A portion of whole grain, such as breads and cereals, lentils, dried beans, or starchy vegetables, fits on one-quarter of the plate.
- A portion of lean protein fits on one-quarter of the plate.
- A variety of colorful, non-starchy vegetables fits on half the plate.
- Include fruits and/or vegetables at every meal.
- A cup of milk or yogurt and/or a serving of fruit may be eaten with the meal or saved for snack.
- Use a small amount of heart-healthy oil for cooking or flavoring foods and/or add a few nuts or seeds to your meal.
- Use herbs and spices liberally.
- Choose a wide variety of types and colors of fruits and vegetables, such as dark green and orange vegetables and blue and red fruits.

* The sandwich at lunch contains whole grain bread (one-quarter of the plate) and lean protein (one-quarter of the plate).



BREAKFAST



LUNCH

DINNER

Carbohydrate choices: **STARCH** (1 serving = 15 grams carbohydrate)

BREADS	**Portion**
Bagel (large)	¼ (1 oz.)
Biscuit (2½ inches across)	1
Bread, loaf	
• white, whole-grain, pumpernickel, rye, unfrosted raisin	1 slice (1 oz.)
• reduced-calorie	2 slices (1½ oz.)
Chapatti (6 inches across)	¼
Corn bread (1¾ inch cube)	1
English muffin	½
Hot dog bun or hamburger bun	½ (1 oz.)
Naan (8 inches x 2 inches)	¼
Pan dulce (4½ inches across)	¼
Pancake (4 inches across)	1
Pita (6 inches across)	½
Roll (plain, small)	1 (1 oz.)
Roti (6 inches across)	½
Stuffing bread	⅓ cup
Taco shell (5 inches across)	2
Tortilla	
• corn (6 inches across)	1
• flour (6 inches across)	1
• flour (10 inches across)	⅓
Waffle (4-inch square or 4 inches across)	1

CEREALS AND COOKED GRAINS	**Portion**
Barley (cooked)	⅓ cup
Bran (dry)	
• Oat	¼ cup
• Wheat	½ cup
Bulgur (cooked)	½ cup
Cereals, cold	
• Bran flakes	½ cup
• Granola	¼ cup
• Muesli	¼ cup
• Puffed	1½ cups
• Shredded wheat (plain)	½ cup
• Unsweetened (ready-to-eat)	¾ cup
Cereals, hot	
• Oats (cooked)	½ cup
• Grits (cooked)	½ cup
Couscous	⅓ cup
Kasha	½ cup
Millet (cooked)	⅓ cup
Pasta (cooked)	⅓ cup
Rice stick noodles	½ cup
Bean thread noodles	½ cup
Polenta (cooked)	⅓ cup
Quinoa (cooked)	⅓ cup
Rice, white or brown (cooked)	⅓ cup
Tabbouleh (tabouli) (prepared)	½ cup

CRACKERS AND SNACKS*	**Portion**
Animal crackers	8
Crackers	
• round (butter type)	6*
• saltine type	6
• sandwich-style (cheese or peanut butter filling)	3*
• whole-wheat (regular)	2–5 (¾ oz.)*
• whole-wheat (lower fat) or crisp	2–5 (¾ oz.)
• graham crackers (2½ inch square)	3
• Matzah	¾ oz.
• oyster crackers	20
Popcorn	3 cups*
Pretzels	¾ oz.
Rice cakes (4 inches across)	2
Snack chips	
• tortilla, potato, pita (fat-free or baked)	15–20 (¾ oz.)
• tortilla, potato (regular)	9–13 (¾ oz.)*

STARCHY VEGETABLES	**Portion**
Cassava	⅓ cup
Corn	
• kernels	½ cup
• cob (large)	½ cob (5 oz.)
Edamame (shelled)	½ cup
Hominy (canned)	¾ cup
Mixed vegetables (with corn, peas or pasta)	1 cup
Parsnips	½ cup
Peas (green)	½ cup
Plantain (ripe)	⅓ cup
Potato	
• baked (with skin)	¼ large (3 oz.)
• boiled (all kinds)	½ cup or ½ medium
• mashed (with milk and fat)	½ cup
• French fried (oven-baked)	1 cup (2 oz.)
Pumpkin (canned, no sugar added)	1 cup
Squash, winter (acorn, butternut)	1 cup
Succotash	½ cup
Yam/sweet potato (plain)	½ cup

BEANS, PEAS, AND LENTILS**	**Portion**
Baked beans	½ cup
Beans, cooked (black, garbanzo, kidney, lima, navy, pinto, white)	½ cup
Lentils, cooked (brown, green, orange, yellow)	½ cup
Miso	3 Tbsp.
Peas, cooked (black-eyed, split)	½ cup
Refried beans	½ cup

**** May be high in unhealthy fat.***

***** Beans, peas and lentils are an excellent source of plant-based protein and fiber.***

Carbohydrate choices: **FRUIT** (1 serving = 15 grams carbohydrate)

FRUIT	**Portion**
Apple (unpeeled, small)	1 (4 oz.)
Apples (dried)	4 rings
Applesauce (unsweetened)	½ cup
Apricots	
• Canned	½ cup
• Dried	8 halves
• Fresh	4 whole (5½ oz.)
Banana (large)	½ (4 oz.)
Blackberries	¾ cup
Blueberries	¾ cup
Cantaloupe (small)	½ melon (11 oz.)
Cherries	
• sweet (canned)	½ cup
• sweet (fresh)	12 (3 oz.)
Dates	3
Dried fruits (blueberries, cherries, cranberries, mixed fruit, raisins)	2 Tbsp.
Figs	
dried	1½
fresh	1½ large or 2 medium (3½ oz.)
Fruit cocktail	½ cup
Grapefruit	
• large	½ (11 oz.)
• sections (canned)	¾ cup
Grapes (small)	17 (3 oz.)
Guava (medium)	1½
Honeydew melon	1 slice or 1 cup cubed (10 oz.)
Kiwi	(3 ½ oz.)
Loquat	4
Mandarin oranges (canned)	¾ cup
Mango (small)	½ fruit (5 ½ oz.) or ½ cup
Nectarines (small)	1 (5 oz.)
Oranges (small)	1 (6 ½ oz.)
Papaya	½ fruit or 1 cup cubed (8 oz.)
Passion fruit	1
Peaches	
• canned	½ cup
• fresh (medium)	1 (6 oz.)
Pineapple	
• canned	½ cup
• fresh (medium)	1 (6 oz.)
Pears	
• canned	½ cup
• fresh	¾ cup
Plums	
• canned	½ cup
• fresh	¾ cup
• small	2 (5 oz.)
Raspberries	1 cup
Strawberries (whole berries)	1¼ cup
Tangerines (small)	2 (8 oz.)
Watermelon	1 slice or 1¼ cup cubes

JUICE*	**Portion**
Apple juice/cider	½ cup
Cranberry juice	⅓ cup
Cranberry juice cocktail (reduced calorie)	1 cup
Fruit juice blends (100% juice)	⅓ cup
Grape juice	⅓ cup
Grapefruit juice	½ cup
Guava juice	½ cup
Mango juice	⅓ cup
Orange juice	½ cup
Pineapple juice	½ cup
Prune juice	⅓ cup

** Less or none preferred*

Carbohydrate choices: **MILK** (1 serving = 15 grams carbohydrate)

FAT-FREE OR LOW-FAT (1%)	**Portion**
Milk	
• Plain	1 cup
• Flavored	½ cup
• Lactose–free	1 cup
Buttermilk, acidophilus milk, natural kefir	1 cup
Evaporated milk	½ cup
Rice, soy, and almond milk	
• Plain	1 cup
• Flavored	½ cup
Yogurt	
• Plain	1 cup (8 oz.)
• Flavored (sweetened with non-nutritive sweeter and fructose)	⅔ cup (6 oz.)
• Greek (plain)	2 cups

REDUCED-FAT (2%)	
Milk	
• Plain	1 cup
• Flavored	½ cup
• Lactose-free	1 cup
Buttermilk, acidophilus milk, natural kefir	1 cup
Evaporated milk	½ cup
Rice, soy, and almond milk	
• Plain	1 cup
• Flavored	½ cup
Yogurt	
• Plain	1 cup (8 oz.)
• Flavored (sweetened with non-nutritive sweeter and fructose)	⅔ cup (6 oz.)
• Greek (plain)	2 cups

WHOLE	
Milk	
• Plain	1 cup
• Flavored	½ cup
• Lactose-free	1 cup
Buttermilk, acidophilus milk, plain kefir	1 cup
Evaporated milk	½ cup
Rice, soy, and almond milk	
• Plain 1 cup	
• Flavored ½ cup	
Yogurt	
• Plain 1 cup	(8 oz.)
• Flavored, (sweetened with non-nutritive sweeter and fructose	⅔ cup (6 oz.)
• Greek (plain)	2 cups

Carbohydrate choices: **OTHER** (1 serving = 15 grams carbohydrate)

Cake (unfrosted)	2-inch square
Cake (frosted)	1-inch square
Cookie (small)	2
Cranberry sauce	⅛ cup
Cupcake (small, frosted)	½
Doughnut (small, plain cake)	1 (1 oz.)
Doughnut (glazed)	½ (1 oz.)
Fruit juice bars (frozen)	1 bar (3 oz.)
Fruit spreads (100% fruit)	1½ Tbsp.
Gelatin (regular)	½ cup
Honey	1 Tbsp.
Ice cream (no added sugar)	½ cup
Jam or jelly	1 Tbsp.
Pie (fruit, 2 crusts)	1/24 pie
Pie (pumpkin or custard)	1/26 pie
Pudding (regular)	¼ cup
Pudding (sugar-free)	¼ cup
Salad dressing (fat-free)	¼ cup
Sherbet, sorbet	¼ cup
Sports drinks	8 oz.
Sugar	1 Tbsp.
Syrup (regular)	1 Tbsp.
Teriyaki sauce	3 Tbsp.
Tomato sauces	½ cup
Yogurt (frozen)	⅓ cup

Non-starchy **VEGETABLES**

Non-starchy vegetables are important to a healthy meal plan. Most people do not eat enough of these. Include more of them in your snacks, as well as your meals.

- Artichoke
- Artichoke hearts
- Asparagus
- Baby corn, canned
- Bamboo shoots
- Beans (green, wax, Italian)
- Bean sprouts
- Beets
- Borscht
- Broccoli
- Brussels sprouts
- Cabbage (green, bok choy, Chinese)
- Carrots
- Cauliflower
- Celery
- Chayote
- Chinese spinach
- Cucumber
- Eggplant
- Gourds (bitter, bottle, luffa, melon)
- Green onions or scallions
- Greens (collard, chard, kale, mustard, turnip)
- Hearts of palm
- Jicama
- Kohlrabi
- Leeks
- Mixed vegetables (without corn, peas, or pasta)
- Mung bean sprouts
- Mushrooms, all kinds, fresh
- Nopales
- Okra
- Onions
- Oriental radish or daikon
- Pea pods (snow peas, snap peas)
- Peppers (all varieties)
- Radishes
- Rutabaga
- Salsa de Chile
- Sauerkraut
- Soybean sprouts
- Spinach
- Squash (summer, crookneck, zucchini)
- Sugar pea snaps
- Tomato (fresh, canned)
- Tomato/vegetable juice
- Turnips
- Water chestnuts
- Yard-long beans

Protein: **LEAN** (1–3 grams of fat per ounce)

- Beef: Select or Choice grades trimmed of fat: ground round, roast (chuck, rib, rump), round, sirloin, steak (cubed, flank, porterhouse, T-bone), tenderloin
- Beef jerky
- Cheese, fat free or low fat
- Cottage cheese, low fat or nonfat
- Egg substitutes, plain, ¼ cup
- Egg whites, 2
- Fish, canned or drained: salmon, tuna, sardines, mackerel
- Fish, smoked: herring or salmon (lox)
- Game: buffalo, ostrich, rabbit, venison
- Hot dog with 3 grams of fat or less per ounce. (Check label for carbohydrates.)
- Lamb: chop, leg, or roast
- Organ meats: heart, kidney, liver (Note: may be high in cholesterol.)
- Oysters, fresh or frozen, 6 medium
- Pork, lean: Canadian bacon, rib or loin chop/roast, ham, tenderloin
- Poultry, without skin: Cornish hen, chicken, domestic duck, or goose (well-drained of fat), turkey
- Processed sandwich meats with 3 grams of fat or less per ounce: chipped beef, deli thin-sliced meats, turkey ham, turkey kielbasa, turkey pastrami
- Sausage, only if less than 3 grams of fat
- Shellfish: clams, crab, imitation shellfish, lobster, scallops, shrimp
- Veal: loin chop, roast

PLANT-BASED OPTIONS*

- Beans, cooked: azuki, black, cannellini, kidney, pinto, red
- Edamame
- Lentils
- Meatless burger*
- Peas, cooked: black-eyed and split
- Soy "sausage" with less than 3 grams fat per ounce
- Tempeh
- Tofu

**** Check label for saturated fat.***

Protein: **MEDIUM FAT** (4–7 grams of fat per ounce)

- Beef: corned beef, ground beef, meat loaf, prime grades trimmed of fat (prime rib), short ribs, tongue
- Cheeses with 4–7 grams of fat per ounce: feta, mozzarella, pasteurized processed cheese spread, reduced-fat cheeses, string
- Eggs (high in cholesterol, so limit to 3 per week)
- Fish, any fried product
- Lamb: ground, rib roast
- Pork: cutlet, shoulder roast
- Poultry: chicken with skin; dove, pheasant, wild duck, or goose; fried chicken; ground turkey
- Ricotta cheese
- Sausage with 4 to 7 grams of fat per ounce
- Veal, cutlet (no breading)
- Poultry, without skin: Cornish hen, chicken, domestic duck, or goose (well-drained of fat), turkey
- Processed sandwich meats with 3 grams of fat or less per ounce: chipped beef, deli thin-sliced meats, turkey ham, turkey kielbasa, turkey pastrami
- Sausage, only if less than 3 grams of fat
- Shellfish: clams, crab, imitation shellfish, lobster, scallops, shrimp
- Veal, loin chop, roast

PLANT-BASED OPTIONS*

- Soy "bacon" strips
- Soy "chicken nuggets"
- Soy nuts
- Soy "sausage" patty with 4 to 7 grams of fat per ounce
- Hummus, ¼ cup

**** These plant-based options may contain carbohydrates, too. If you are counting carbohydrates, count them into your meal plan.***

Protein: **HIGH FAT** (8 grams or more fat per ounce)

These foods are high in fat, cholesterol, and calories. Choose small amounts of these foods.

- Bacon: pork or turkey
- Cheese, regular: American, bleu, Brie, cheddar, hard, goat, Monterey Jack, queso fresco and Swiss
- Hot dog: beef, pork or combination
- Hot dog: turkey or chicken
- Pork: ground, sausage, spareribs
- Sandwich meats with 8 grams of fat or more per ounce: bologna, pastrami, ham, salami
- Sausage with 8 grams fat or more per ounce: bratwurst, chorizo, Italian, knockwurst, Polish, smoked, summer

PLANT-BASED OPTIONS*

- Nuts or seeds, ¼ cup
- Nut spreads (butters): almond, cashew, peanut, soy nut, sunflower, 2 Tbsp

**** These plant-based options may contain carbohydrates, too. If you are counting carbohydrates, count them into your meal plan.***

FATS

Saturated and trans fats are unhealthy. They raise cholesterol and increase the risk for heart disease. Monounsaturated and polyunsaturated fats are healthier and help to lower cholesterol when chosen over unhealthy fats. To protect your health, avoid unhealthy fats, limit the total amount of fat consumed each day and be aware of hidden sources of fats (especially in packaged foods).

Monounsaturated Fats

- Avocado
- Nut butters (natural): almond butter, cashew butter or peanut butter (smooth or crunchy)
- Nuts: almonds, Brazil, cashews, filberts (hazelnuts), macadamia, mixed (50% peanuts), peanuts, pecans or pistachios
- Oil: canola, olive, peanut
- Olives

Polyunsaturated Fats

- Margarine: lower-fat spread (30%–50% vegetable oil, trans fat-free)
- Margarine: stick, tub (trans fat-free) or squeeze (trans fat-free)
- Mayonnaise: reduced-fat or regular
- Mayonnaise-style salad dressing: reduced-fat or regular
- Nuts: pine nuts, English walnuts
- Oil: corn, cottonseed, flaxseed, grape seed, safflower, soybean, sunflower
- Salad dressing: reduced-fat* or regular
- Seeds: flaxseed, pumpkin, sunflower, sesame seeds, Tahini or sesame paste

**** May be high in carbohydrates.***

Saturated Fats (Unhealthy)

- Bacon: cooked, regular or turkey
- Butter: reduced-fat, stick or whipped
- Butter blends made with oil: reduced-fat, light or regular
- Chitterlings: boiled, baked or fried
- Coconut
- Coconut milk: light or regular
- Cream: coffee creamers, half-and-half, heavy, light or whipped
- Cream cheese: reduced-fat or regular
- Lard
- Oil: coconut, palm or palm kernel
- Salt pork
- Shortening, solid
- Sour cream: reduced-fat, light or regular

Note that regular cheese, meat, chicken and some other high-fat proteins contain these unhealthy fats.

How do I read a food label?

Sample label:

Nutrition Facts

4 servings per container
Serving size **1 cup (227g)**

Amount per serving
Calories **280**

	% Daily Value*
Total Fat 9g	**12%**
Saturated Fat 4.5g	**23%**
Trans Fat 0g	
Cholesterol 35mg	**12%**
Sodium 850mg	**37%**
Total Carbohydrate 34g	**12%**
Dietary Fiber 4g	**14%**
Total Sugars 6g	
Includes 0g Added Sugars	**0%**
Protein 15g	
Vitamin D 0mcg	0%
Calcium 320mg	25%
Iron 1.6mg	8%
Potassium 510mg	10%

* 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.

1. **Serving Information**
2. **Calories**
3. **Nutrients**
4. **Quick Guide to percent Daily Value (%DV)**
   - 5% or less is **low**
   - 20% or more is **high**
5. **Know how many carbohydrates are in that Serving Size. (Sugars are already accounted for in Total Carbohydrate.)**

Note:
1 carbohydrate serving equals 15 grams of carbohydrates. This food would be considered just over 2 carbohydrate servings.

Home insulin plan

Check your blood sugar:

☐ Before each meal ☐ At bedtime ☐ ____Hours after meal ☐ Other: _____

Before meal blood sugar target: ☐ 80 – 130 mg/dL **OR** ☐ Other:_____

Treat low blood sugar or low blood sugar symptoms with one of the following:

Low blood sugar is less than 70 mg/dL. Symptoms you may feel are shaky, sweaty, lightheaded or headache.

• 3–4 glucose tablets • 1/2 cup juice • 1–2 pieces of hard candy (not sugar free)

Recommended carbohydrates (carbs) per meal: Eat_____grams (gm)

	Breakfast	Lunch	Dinner	Bedtime
Basal insulin A long-acting insulin that provides background coverage to meet the basic needs of the body. Inject once or twice a day.	_____ **(insulin name)** **_____units**		_____ **(insulin name)** **_____units** *Mixed insulin is given at breakfast and dinner.*	_____ **(insulin name)** **_____units**
Mealtime insulin Rapid-acting insulin prevents increased blood sugars after eating carbs. Inject within 15 minutes before meals or immediately following meals. ***If you skip a meal, skip this dose.***	_____ **(insulin name)** **_____units** **OR** **1 unit per** **_____gm carbs**	_____ **(insulin name)** **_____units** **OR** **1 unit per** **_____gm carbs**	_____ **(insulin name)** **_____units** **OR** **1 unit per** **_____gm carbs**	
Correction insulin Rapid-acting insulin to lower high blood sugar levels. Add additional insulin to your mealtime dose or take before meals as outlined here.	This is the same insulin type as your mealtime insulin. If not taking mealtime insulin, inject _____ (insulin name)			
	151 to 200 mg/dL, add ____ units 201 to 250 mg/dL, add ____ units 251 to 300 mg/dL, add ____ units 301 to 350 mg/dL, add ____ units 351 to 400 mg/dL, add ____ units 400 mg/dL or higher, add ____ units		**Example:** Mealtime insulin (breakfast) = 4 units Before breakfast blood sugar = 175 mg/dL Correction insulin 151 to 200 mg/dL = 2 units 4 units + 2 units = **6 units total**	

Call 9-1-1 if you are having a medical emergency!

Call your doctor when:

- Your blood sugar was out of your target range for several tests in one week.
- Your blood sugar is over 300 mg/dL.
- You have a blood sugar below 70 mg/dL or symptoms of low blood sugar.
- You have any questions about insulin.

Diabetes resources*

Association of Diabetes Care & Education Specialists (ADCES)
diabeteseducator.org

American Diabetes Association
diabetes.org

Academy of Nutrition and Dietetics
eatright.org

American Heart Association
heart.org

California Department of Public Health Chronic Disease Control Branch
cdph.ca.gov/Programs/CCDPHP/DCDIC/CDCB/Pages/ChronicDiseaseControlBranch

Centers for Disease Control and Prevention (CDC)
National Center for Chronic Disease Prevention and Health Promotion
cdc.gov/diabetes
800-CDC-INFO (800-232-4636)

diaTribe
diatribe.org

National Institute of Diabetes, Digestive and Kidney Diseases (NIDDK)
ndep.nih.gov

National Institutes of Health
National Diabetes Education Program (NDEP)
ndeph.nih.gov

Nutrition and Food Information
dietfacts.com; calorieking.com

Tobacco Cessation
English 800-NO-BUTTS (800-662-8887)
Spanish 800-45-NO-FUME (800-456-6386)

Mobile applications

Association of Diabetes Care & Education Specialists (ADCES) Diabetes Goal Tracker (goal setting)
diabeteseducator.org/DiabetesEducation/PWD_Web_Pages/DiabetesGoalTracker.html

CalorieKing (carbohydrate counting)
calorieking.com

Fooducate (food tracker)
fooducate.com

Glooko (glucose tracker)
glooko.com

Glucose Buddy (glucose tracker)
glucosebuddy.com

Map my Walk (activity tracker)
mapmywalk.com/app

Myfitnesspal (glucose tracker, food tracker)
myfitnesspal.com

Striiv (activity tracker)
striiv.com

mySugr (Diabetes Tracker Log)
mysugr.com

Start Simple with MyPlate
myplate.gov

** Many sites have materials available in English and Spanish.*

Sutter Health diabetes education

Sacramento Valley Area

Sutter Medical Foundation patient education
Services in 15 locations in the Sacramento Region
916-755-7240

Sutter diabetes care center/sweet success
916-887-4013

Sutter Gould Medical Foundation community health education
Services in Modesto, Tracy, Turlock, Patterson and Stockton
209-550-4747

San Francisco Bay Area

Alta Bates Summit diabetes center
510-204-1081

Mills-Peninsula Medical Center diabetes and pregnancy program
650-696-5469

Palo Alto Medical Foundation nutrition and diabetes education
Please call the location most convenient to you.

- Burlingame: 650-652-8220
- Dublin and Fremont: 510-498-2184
- Palo Alto and San Carlos: 650-853-2961
- Santa Cruz County: 831-460-7333
- Mountain View, Los Gatos, and Blossom Hill

Sutter Pacific Medical Foundation diabetes and pregnancy program
415-641-6826 (Diabetes Education)
415-600-0110 (Office of Endocrinology)

Sutter Health East Bay Medical Foundation
Services in Castro Valley, Antioch, Orinda and Oakland
(510) 727-8370

Sutter Santa Rosa Regional Hospital sweet success
(707) 576-4519

Sutter Pacific Medical Foundation endocrinology and diabetes services

- **Van Ness Campus**
  415-641-6826 (Diabetes Education)
  415-600-0110 (Office of Endocrinology)
- **Mission Bernal Campus (formerly St. Lukes)**
  415-641-6826 (Diabetes Education)

Notes

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Sutter Health

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