

# Diabetes Diet, Eating, & Physical Activity

## In this section:

- [What foods can I eat if I have diabetes?](#)
- [What foods and drinks should I limit if I have diabetes?](#)
- [When should I eat if I have diabetes?](#)
- [How much can I eat if I have diabetes?](#)
- [What is medical nutrition therapy?](#)
- [Will supplements and vitamins help my diabetes?](#)
- [Why should I be physically active if I have diabetes?](#)
- [How can I be physically active safely if I have diabetes?](#)
- [What physical activities should I do if I have diabetes?](#)

Nutrition and physical activity are important parts of a healthy lifestyle when you have diabetes. Along with other benefits, following a healthy meal plan and being active can help you keep your [blood glucose level](#), also called blood sugar, in your target range. To manage your blood glucose, you need to balance what you eat and drink with physical activity and diabetes medicine, if you take any. What you choose to eat, how much you eat, and when you eat are all important in keeping your blood glucose level in the range that your health care team recommends.

Becoming more active and making changes in what you eat and drink can seem challenging at first. You may find it easier to start with small changes and get help from your family, friends, and health care team.

Eating well and being physically active most days of the week can help you

- keep your blood glucose level, blood pressure, and cholesterol in your target ranges
- lose weight or stay at a [healthy weight](#)

Source: National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); Use of this document does not constitute endorsement or recommendation by the U.S. Government, HHS, NIH, or NIDDK.

- prevent or delay [diabetes problems](#)
- feel good and have more energy

## What foods can I eat if I have diabetes?

You may worry that having diabetes means going without foods you enjoy. The good news is that you can still eat your favorite foods, but you might need to eat smaller portions or enjoy them less often. Your health care team will help create a diabetes meal plan for you that meets your needs and likes.

The key to eating with diabetes is to eat a variety of healthy foods from all food groups, in the amounts your meal plan outlines.

The food groups are

- **vegetables**
  - nonstarchy: includes broccoli, carrots, greens, peppers, and tomatoes
  - starchy: includes potatoes, corn, and green peas
- **fruits**—includes oranges, melon, berries, apples, bananas, and grapes
- **grains**—at least half of your grains for the day should be [whole grains](#)
  - includes wheat, rice, oats, cornmeal, barley, and quinoa
  - examples: bread, pasta, cereal, and tortillas
- **protein**
  - lean meat
  - chicken or turkey without the skin
  - fish
  - eggs
  - nuts and peanuts
  - dried beans and certain peas, such as chickpeas and split peas
  - meat substitutes, such as tofu
- **dairy—nonfat or low fat**
  - milk or lactose-free milk if you have [lactose intolerance](#)
  - yogurt
  - cheese

Learn more about the food groups at the U.S. Department of Agriculture's (USDA)

[ChooseMyPlate.gov](https://www.choosemyplate.gov) .

Eat foods with heart-healthy fats, which mainly come from these foods:

- oils that are liquid at room temperature, such as canola and olive oil
- nuts and seeds
- heart-healthy fish such as salmon, tuna, and mackerel
- avocado

Use oils when cooking food instead of butter, cream, shortening, lard, or stick margarine.

Choose healthy fats, such as from nuts, seeds, and olive oil.

## What foods and drinks should I limit if I have diabetes?

Foods and drinks to limit include

- fried foods and other foods high in [saturated fat](#) and [trans fat](#)
- foods high in salt, also called [sodium](#)
- sweets, such as baked goods, candy, and ice cream
- beverages with [added sugars](#), such as juice, regular soda, and regular sports or energy drinks

Drink water instead of sweetened beverages. Consider using a sugar substitute in your coffee or tea.

Source: National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); Use of this document does not constitute endorsement or recommendation by the U.S. Government, HHS, NIH, or NIDDK.

If you drink alcohol, drink moderately—no more than one drink a day if you're a woman or two drinks a day if you're a man. If you use insulin or diabetes medicines that increase the amount of insulin your body makes, alcohol can make your blood glucose level drop too low. This is especially true if you haven't eaten in a while. It's best to eat some food when you drink alcohol.

## When should I eat if I have diabetes?

Some people with diabetes need to eat at about the same time each day. Others can be more flexible with the timing of their meals. Depending on your diabetes medicines or type of insulin, you may need to eat the same amount of carbohydrates at the same time each day. If you take “mealtime” insulin, your eating schedule can be more flexible.

If you use certain diabetes medicines or insulin and you skip or delay a meal, your blood glucose level can drop too low. Ask your health care team when you should eat and whether you should eat before and after physical activity.

## How much can I eat if I have diabetes?

Eating the right amount of food will also help you manage your blood glucose level and your weight. Your health care team can help you figure out how much food and how many calories you should eat each day.

## Weight-loss planning

If you are [overweight](#) or have [obesity](#), work with your health care team to create a weight-loss plan.

The [Body Weight Planner](#) can help you tailor your calorie and physical activity plans to reach and maintain your goal weight.

To lose weight, you need to eat fewer calories and replace less healthy foods with foods lower in calories, fat, and sugar.

If you have diabetes, are overweight or obese, and are planning to have a baby, you should try to lose any excess weight before you become pregnant. [Learn more about planning for pregnancy if you have diabetes.](#)

## Meal plan methods


Two common ways to help you plan how much to eat if you have diabetes are the plate method and carbohydrate counting, also called carb counting. Check with your health care team about the method that's best for you.

### Plate method

The plate method helps you control your [portion sizes](#). You don't need to count calories. The plate method shows the amount of each food group you should eat. This method works best for lunch and dinner.

Use a 9-inch plate. Put nonstarchy vegetables on half of the plate; a meat or other protein on one-fourth of the plate; and a grain or other starch on the last one-fourth. Starches include starchy vegetables such as corn and peas. You also may eat a small bowl of fruit or a piece of fruit, and drink a small glass of milk as included in your meal plan.

The plate method shows the amount of each food group you should eat.

You can find many different combinations of food and more details about using the plate method from the American Diabetes Association's [Create Your Plate](#) .

Source: National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); Use of this document does not constitute endorsement or recommendation by the U.S. Government, HHS, NIH, or NIDDK.

Your daily eating plan also may include small snacks between meals.

## Portion sizes

- You can use everyday objects or your hand to judge the size of a portion.
- 1 serving of meat or poultry is the palm of your hand or a deck of cards
- 1 3-ounce serving of fish is a checkbook
- 1 serving of cheese is six dice
- 1/2 cup of cooked rice or pasta is a rounded handful or a tennis ball
- 1 serving of a pancake or waffle is a DVD
- 2 tablespoons of peanut butter is a ping-pong ball

## Carbohydrate counting

Carbohydrate counting involves keeping track of the amount of carbohydrates you eat and drink each day. Because carbohydrates turn into glucose in your body, they affect your blood glucose level more than other foods do. Carb counting can help you manage your blood glucose level. If you take [insulin](#), counting carbohydrates can help you know how much insulin to take.

Carbohydrate counting is a meal planning tool for people with diabetes who take insulin, but not all people with diabetes need to count carbohydrates. Your health care team can help you create a personal eating plan that will best meet your needs.

The amount of carbohydrates in foods is measured in grams. To count carbohydrate grams in what you eat, you'll need to

- learn which foods have carbohydrates
- read the [Nutrition Facts food label](#), or learn to estimate the number of grams of carbohydrate in the foods you eat
- add the grams of carbohydrate from each food you eat to get your total for each meal and for the day


Most carbohydrates come from starches, fruits, milk, and sweets. Try to limit carbohydrates with added sugars or those with refined grains, such as white bread and white rice. Instead, eat carbohydrates from fruit, vegetables, whole grains, beans, and low-fat or nonfat milk.

Source: National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); Use of this document does not constitute endorsement or recommendation by the U.S. Government, HHS, NIH, or NIDDK.


Choose healthy carbohydrates, such as fruit, vegetables, whole grains, beans, and low-fat milk, as part of your diabetes meal plan.

In addition to using the plate method and carb counting, you may want to visit a [registered dietitian](#) (RD) for medical nutrition therapy.

## What is medical nutrition therapy?

Medical nutrition therapy is a service provided by an RD to create personal eating plans based on your needs and likes. For people with diabetes, medical nutrition therapy has been shown to improve diabetes management. [Medicare pays for medical nutrition therapy for people with diabetes](#)  If you have insurance other than Medicare, ask if it covers medical nutrition therapy for diabetes.

## Will supplements and vitamins help my diabetes?

No clear proof exists that taking [dietary supplements](#)  such as vitamins, minerals, herbs, or spices can help manage diabetes.<sup>1</sup> You may need supplements if you cannot get enough vitamins and minerals from foods. Talk with your health care provider before you take any dietary supplement since some can cause side effects or affect how your medicines work.<sup>2</sup>

Source: National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); Use of this document does not constitute endorsement or recommendation by the U.S. Government, HHS, NIH, or NIDDK.

# Why should I be physically active if I have diabetes?

Physical activity is an important part of managing your blood glucose level and staying healthy. Being active has many health benefits.

## Physical activity

- lowers blood glucose levels
- lowers [blood pressure](#)
- improves blood flow
- burns extra calories so you can keep your weight down if needed
- improves your mood
- can prevent falls and improve memory in older adults
- may help you sleep better

If you are overweight, combining physical activity with a reduced-calorie eating plan can lead to even more benefits. In the Look AHEAD: Action for Health in Diabetes study,<sup>1</sup> overweight adults with [type 2 diabetes](#) who ate less and moved more had greater long-term health benefits compared to those who didn't make these changes. These benefits included improved cholesterol levels, less [sleep apnea](#), and being able to move around more easily.

Even small amounts of physical activity can help. Experts suggest that you aim for at least 30 minutes of moderate or vigorous physical activity 5 days of the week.<sup>3</sup> Moderate activity feels somewhat hard, and vigorous activity is intense and feels hard. If you want to lose weight or maintain weight loss, you may need to do 60 minutes or more of physical activity 5 days of the week.<sup>3</sup>

Be patient. It may take a few weeks of physical activity before you see changes in your health.

# How can I be physically active safely if I have diabetes?

Be sure to drink water before, during, and after exercise to stay well hydrated. The following are some other tips for safe physical activity when you have diabetes.



Drink water when you exercise to stay well hydrated.

## Plan ahead

Talk with your health care team before you start a new physical activity routine, especially if you have other health problems. Your health care team will tell you a target range for your blood glucose level and suggest how you can be active safely.

Your health care team also can help you decide the best time of day for you to do physical activity based on your daily schedule, meal plan, and diabetes medicines. If you take insulin, you need to balance the activity that you do with your insulin doses and meals so you don't get low blood glucose.

## Prevent low blood glucose

Because physical activity lowers your blood glucose, you should protect yourself against low blood glucose levels, also called [hypoglycemia](#). You are most likely to have hypoglycemia if you take insulin or certain other diabetes medicines, such as a [sulfonylurea](#). Hypoglycemia also can occur after a long intense workout or if you have skipped a meal before being active. Hypoglycemia can happen during or up to 24 hours after physical activity.

Planning is key to preventing hypoglycemia. For instance, if you take insulin, your health care provider might suggest you take less insulin or eat a small snack with carbohydrates before, during, or after physical activity, especially intense activity.<sup>4</sup>

Source: National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); Use of this document does not constitute endorsement or recommendation by the U.S. Government, HHS, NIH, or NIDDK.

You may need to check your blood glucose level before, during, and right after you are physically active.

## Stay safe when blood glucose is high

If you have [type 1 diabetes](#), avoid vigorous physical activity when you have ketones in your blood or urine. Ketones are chemicals your body might make when your blood glucose level is too high, a condition called hyperglycemia, and your insulin level is too low. If you are physically active when you have ketones in your blood or urine, your blood glucose level may go even higher. Ask your health care team what level of ketones are dangerous for you and how to test for them. Ketones are uncommon in people with type 2 diabetes.

## Take care of your feet

People with diabetes may have problems with their feet because of poor blood flow and nerve damage that can result from high blood glucose levels. To help prevent foot problems, you should wear comfortable, supportive shoes and [take care of your feet](#) before, during, and after physical activity.

## What physical activities should I do if I have diabetes?

Most kinds of physical activity can help you take care of your diabetes. Certain activities may be unsafe for some people, such as those with low vision or nerve damage to their feet. Ask your health care team what physical activities are safe for you. Many people choose walking with friends or family members for their activity.

Doing different types of physical activity each week will give you the most health benefits. Mixing it up also helps reduce boredom and lower your chance of getting hurt. Try these options for physical activity.

## Add extra activity to your daily routine

If you have been inactive or you are trying a new activity, start slowly, with 5 to 10 minutes

Source: National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); Use of this document does not constitute endorsement or recommendation by the U.S. Government, HHS, NIH, or NIDDK.

a day. Then add a little more time each week. Increase daily activity by spending less time in front of a TV or other screen. Try these simple ways to add physical activities in your life each day:

- Walk around while you talk on the phone or during TV commercials.
- Do chores, such as work in the garden, rake leaves, clean the house, or wash the car.
- Park at the far end of the shopping center parking lot and walk to the store.
- Take the stairs instead of the elevator.
- Make your family outings active, such as a family bike ride or a walk in a park.

If you are sitting for a long time, such as working at a desk or watching TV, do some light activity for 3 minutes or more every half hour.<sup>5</sup> Light activities include

- leg lifts or extensions
- overhead arm stretches
- desk chair swivels
- torso twists
- side lunges
- walking in place

## Do aerobic exercise

Aerobic exercise is activity that makes your heart beat faster and makes you breathe harder. You should aim for doing aerobic exercise for 30 minutes a day most days of the week. You do not have to do all the activity at one time. You can split up these minutes into a few times throughout the day.

To get the most out of your activity, exercise at a moderate to vigorous level. Try

- walking briskly or hiking
- climbing stairs
- swimming or a water-aerobics class
- dancing
- riding a bicycle or a stationary bicycle
- taking an exercise class
- playing basketball, tennis, or other sports

Source: National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); Use of this document does not constitute endorsement or recommendation by the U.S. Government, HHS, NIH, or NIDDK.

Talk with your health care team about how to warm up and cool down before and after you exercise.

## Do strength training to build muscle

Strength training is a light or moderate physical activity that builds muscle and helps keep your bones healthy. Strength training is important for both men and women. When you have more muscle and less body fat, you'll burn more calories. Burning more calories can help you lose and keep off extra weight.

You can do strength training with hand weights, elastic bands, or weight machines. Try to do strength training two to three times a week. Start with a light weight. Slowly increase the size of your weights as your muscles become stronger.

You can do strength training with hand weights, elastic bands, or weight machines.



## Do stretching exercises

Stretching exercises are light or moderate physical activity. When you stretch, you increase your flexibility, lower your stress, and help prevent sore muscles.

You can choose from many types of stretching exercises. Yoga is a type of stretching that focuses on your breathing and helps you relax. Even if you have problems moving or balancing, certain types of yoga can help. For instance, chair yoga has stretches you can do when sitting in a chair or holding onto a chair while standing. Your health care team can suggest whether yoga is right for you.

Source: National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); Use of this document does not constitute endorsement or recommendation by the U.S. Government, HHS, NIH, or NIDDK.

# References

- [1] American Diabetes Association. Foundations of care and comprehensive medical evaluation. *Diabetes Care*. 2016;39(suppl 1):S26 (Table 3.3).
- [2] National Institutes of Health, Office of Dietary Supplements. Dietary supplements: what you need to know. [ods.od.nih.gov/HealthInformation/DS\\_WhatYouNeedToKnow.aspx](https://ods.od.nih.gov/HealthInformation/DS_WhatYouNeedToKnow.aspx) NIH . Reviewed June 17, 2011. Accessed June 21, 2016.
- [3] U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. *Physical Activity Guidelines for Americans, 2nd edition*. Washington, DC: U.S. Department of Health and Human Services; 2018. <https://health.gov/paguidelines/second-edition/> . Updated January 14, 2019. Accessed January 14, 2019.
- [4] Yardley JE, Sigal RJ. Exercise strategies for hypoglycemia prevention in individuals with type 1 diabetes. *Diabetes Spectrum*. 2015;28(1):32–38.
- [5] Colberg SR, Sigal RJ, Yardley JE, et al. Physical activity/exercise and diabetes: a position statement of the American Diabetes Association. *Diabetes Care*. 2016;39(11):2065–2079.

**December 2016**

## Additional Links

- [Young at Heart: Tips for Older Adults](#)
- [Active at Any Size!](#)
- [Energize Yourself and Your Family](#)
- [Walking . . . A Step in the Right Direction](#)
- [Just Enough for You: About Food Portions](#)

This content is provided as a service of the [National Institute of Diabetes and Digestive and Kidney Diseases](#)

Source: National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); Use of this document does not constitute endorsement or recommendation by the U.S. Government, HHS, NIH, or NIDDK.

(NIDDK), part of the National Institutes of Health. The NIDDK translates and disseminates research findings to increase knowledge and understanding about health and disease among patients, health professionals, and the public. Content produced by the NIDDK is carefully reviewed by NIDDK scientists and other experts.

Source: National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); Use of this document does not constitute endorsement or recommendation by the U.S. Government, HHS, NIH, or NIDDK.