

Ready, Set, Start Counting!

Carbohydrate Counting — a Tool to Help Manage Your Blood Glucose

When you have diabetes, keeping your blood glucose in a healthy range can help you feel your best today and in the future. Carbohydrate counting — or “carb counting” — is a flexible meal-planning tool (not a diet) that can help you understand how your food choices affect your blood glucose level.

Carbohydrate and blood glucose

Any carbohydrate food you eat (e.g., milk, fruit, bread and pasta) is digested into glucose, which causes your blood glucose level to increase.

However, eating some carbohydrates throughout the day is important because they provide energy and essential nutrients for your body. To better manage your blood glucose, energy levels and weight, pay attention to how much carbohydrate you eat.

Maintaining the right balance between carbohydrate and insulin (whether your body produces it or you take it) helps to regulate your blood glucose level. Determining when and how much you eat — and whether or not you have snacks — should be based on your lifestyle, medications and meal-planning goals. A registered dietitian nutritionist (RDN) may consider the following ways for you to use carb counting to determine the healthiest plan for you:

- **Portion Control:** Setting a maximum amount of carbs for each meal within your healthy meal plan and/or taking diabetes medications can keep your blood glucose from getting too high.

- **Consistency:** If you use diabetes medications or insulin, it may be important to eat the same amount of food and carbohydrate at the same time each day. Doing this can keep your blood glucose from getting too high or too low.
- **Flexibility:** If your insulin plan includes varying doses based on how much carbohydrate you are eating (carb/insulin ratio), accurate carb counting can help you determine how much insulin to take.

Foods that contain carbohydrate:

- Grains (e.g., breads, crackers, rice, hot and cold cereals, tortillas and noodles)
- Starchy vegetables (e.g., potatoes, peas, corn, winter squash, lentils and beans)
- Fruit and juices
- Milk and yogurt
- Sweets and desserts

Non-starchy vegetables (e.g., carrots, broccoli and tomatoes) contain only a small amount of carbohydrates and do not affect blood glucose when eaten in small portions.

Carbohydrate choices and portion sizes

- A “**carbohydrate choice**” is a portion of food, such as a 1-ounce slice of bread, that has 15 grams of carbohydrate (1 carbohydrate choice = 15 grams of carbohydrate).

The idea is that total carbohydrate from any food often has a similar effect on blood glucose levels.

- Small portions of sweets or sugar can occasionally be used in place of other carbohydrate-containing food.



- Measuring or weighing foods can help you learn what common portion sizes look like. If you do not have access to a scale or measuring cups, refer to these hand-estimated illustrations.



Learn how to read food labels

Here are tips for reading food labels.

Remember: Always compare the serving size listed to your actual portion.

1 Find the serving size.

2 Locate the total carbohydrate in one serving. (Sugars are included in this number, so you do not need to count them separately.)

Nutrition Facts	
Serving Size	15 crackers (30g)
Servings Per Container	about 14
Calories	130
Total Fat	3g 5%
Saturated Fat	0g
Cholesterol	0mg 0%
Sodium	160mg 7%
Total Carbohydrate	22g 7%
Dietary Fiber	2g 8%
Sugars	3g
Protein	3g
Vitamin A	0%
Vitamin C	0%

3 Compare the serving size listed to your actual portion.

4 Count the grams of carbohydrate or the number of carbohydrate choices. In this example, 10 crackers have about 15 grams of carb and equal 1 carb choice.

The number of carbohydrate choices you need depends on your body size, activity level and weight-management goals. An RD or RDN can help you determine the appropriate amount of carbs for you. Visit www.eatright.org to find an RD/RDN near you.



Determine carbohydrate choices online

When a nutrition label is not available, often you can find the information online.

1. Locate the name of the company that produced or packaged the food and visit its website.
2. Refer to a reliable website that provides nutrition information, such as:
 - a. Calorie King (www.calorieking.com)
 - b. The USDA National Nutrient Database (<http://www.nal.usda.gov/fnic/foodcomp/search>)
 - c. MyFoodAdvisor (<http://tracker.diabetes.org/explore>)
3. Download a nutrition app onto your cell phone:
 - a. For a list of apps, visit <http://www.dce.org/public-resources/diabetes/>
4. Check out your favorite chain restaurant’s nutrition information on their website so you can stick to your plan when you eat away from home.

Food lists

Breads, Grains and Cereals	Milk and Yogurt	Fruits	Vegetables and Beans	Sweets and Snack Foods
1 ounce bread product (1 slice bread, ¼ large bagel, 6" tortilla) 1/3 cup cooked rice or pasta 1 cup soup ¾ ounce unsweetened cold cereal (<i>serving sizes vary, check label</i>) ½ cup cooked cereal 3 cups air-popped popcorn	1 cup milk 1 cup low-fat or skim milk, or 6 ounces low-fat or fat-free plain or Greek yogurt 6 ounces flavored yogurt made with low-cal sweetener (<i>these vary, check label</i>)	1 small piece fresh fruit ½ medium fruit (apple, banana) ½ cup canned fruit in own juice 1 cup honeydew or cantaloupe 1 1/4 cup watermelon ½ cup fruit juice 2 TBSP dried fruit 1 cup raspberries 1 ¼ cup strawberries 1 cup blackberries 3/4 cup blueberries	½ cup potato, sweet potato, peas, corn ½ cup cooked beans, legumes (garbanzo, kidney, black beans) 1 cup winter squash 1/3 cup cooked cassava, yam, taro 1/3 plantain (green or yellow) 1 ½ cups cooked vegetables (small portions of nonstarchy vegetables are free)	¾ ounce snack food (pretzels, 4-6 crackers) 8 baked chips, potato, pita 13 regular chips, tortilla, potato 1 ounce sweet snack (2 small sandwich cookies, 5 vanilla wafers) 1 TBSP sugar or honey ½ cup regular ice cream

The lists above provide a basic idea of the carb count in common foods. Each portion is one carbohydrate choice (15 grams of carbohydrate). Foods with fewer than 20 calories and fewer than 5 grams of carbohydrate are considered "free." These include sugar-free beverages, sugar substitutes, spices and seasonings.

Carbohydrate choices for common serving sizes

- 1 regular sandwich = 2 carbohydrate choices or about 30 grams of carbohydrates
- 1 6" sub sandwich = 3 carbohydrate choices or about 45 grams of carbohydrates
- 1 cup cooked rice or pasta = 3 carbohydrate choices or about 45 grams of carbohydrates
- 1 medium (average) apple or banana = 2 carbohydrate choices or about 30 grams of carbohydrates



Better carbohydrate choices

Carbohydrate counting is important, but the type of carbohydrate also is important for both blood glucose and overall health. All carbohydrates are not the same. Choose better carbohydrate choices, such as whole grains and less-processed foods.

- Opt for beans and other legumes.
- Select whole grain bread, whole grain pasta and brown rice over white (refined) varieties.
- Experiment with many types of whole grains, including barley, oatmeal, quinoa and bulgur.
- Go for whole fruits instead of fruit juice or sugary foods.
- Select a variety of vegetables such as cauliflower, tomato, carrots and spinach (most vegetables are great choices).

How much to eat?

For Weight Maintenance



Women

Many women need about 3-4 carbohydrate choices (45-60 grams) at each meal

Breakfast	
1 slice (1 ounce) whole grain toast	1 carbohydrate choice
1 teaspoon light margarine	
1 egg omelet with spinach and mushrooms	
1 small orange	1 carbohydrate choice
6 ounces low-fat plain Greek yogurt	1 carbohydrate choice

Lunch	
1 sandwich with whole grain bread	2 carbohydrate choices
1 small fruit	1 carbohydrate choice
1-2 cups veggies	0-1 carbohydrate choice

Dinner	
1 piece of chicken	
1 cup winter squash	1 carbohydrate choice
1 small fruit	1 carbohydrate choice
1-2 cups broccoli	0-1 carbohydrate choice
1 large green salad	
1 cup fat-free skim milk	1 carbohydrate choice



Men

Many men need about 4-5 carbohydrate choices (60-75 grams) at each meal

Breakfast	
1 small orange	1 carbohydrate choice
1 cup cooked oatmeal made with water	2 carbohydrate choices
1 cup fat-free milk	1 carbohydrate choice
2 tablespoons nuts	
2 tablespoons raisins	1 carbohydrate choice

Lunch	
1 cup brown rice	3 carbohydrate choices
1-2 cups chicken and veggie stir fry	0-1 carbohydrate choice
1 small fruit	1 carbohydrate choice

Dinner	
1 cup pasta	3 carbohydrate choices
½ cup red sauce with meat	1 carbohydrate choice
6 ounces low-fat plain Greek yogurt	1 carbohydrate choice
1 large green salad	

My Individual Carbohydrate Goals

	Time	Carbohydrate choices or grams
Breakfast		
Snack		
Lunch		
Snack		
Dinner		
Snack		
TOTAL		

Healthy eating is about more than just counting carbohydrates. It is important to eat balanced meals with an emphasis on vegetables and fruits.

Eat a variety of foods. For most people these include:

- at least 5 servings of fruits and vegetables
- at least 3 servings of whole grains or legumes (beans)
- 2–3 servings of low-fat or fat-free dairy
- Adequate protein and healthy fats

Protein foods (including meat, poultry and fish) and fats do not directly affect blood glucose and can help you feel satisfied, although they do add calories. To keep your heart healthy, choose healthy fats (like those found in nuts, seeds and fish) in appropriate portions. With all of the food you eat, remember that portion control is important.

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For a referral to a registered dietitian and for additional food and nutrition information, visit the Diabetes Care and Education Practice Group at www.dce.org or the Academy of Nutrition and Dietetics at www.eatright.org, or 1-800-877-1600.