

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 will 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 helps 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. That said, it’s still important to eat carbohydrates throughout the day 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 you make it or take it) regulates 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 (RD) may consider the following factors in helping you determine the healthiest plan for you:

- **Consistency:** If you use diabetes medications or insulin, it is 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.
- **Maximums:** Setting a meal-time maximum for carbohydrates along with focusing on a healthy lifestyle, and/or taking diabetes medications, is another way you can help keep your blood sugar from getting too high.
- **Matching:** If your insulin plan includes varying your dose based on what you are eating, it is important to know how much carbohydrate you are eating.

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 will not affect blood glucose when eaten in small portions.

Carbohydrate choices and portion sizes

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

The total carbohydrate from any food has about the same effect on blood glucose.

- Small portions of sweets or sugar can occasionally be used in place of other carbohydrate-containing food.
- Measure or weigh foods to 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 to keep in mind when reading food labels. Remember: Always compare the serving size listed to your actual portion.

1 Find the serving size.

Nutrition Facts

Serving Size 15 crackers (30g)
Servings Per Container about 14

Calories 130
Calories from Fat 30

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%

Calcium 2%

3 Compare the serving size listed to your actual portion.

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

4 Count the grams of carbohydrate or the number of carbohydrate choices. In this example, 10 crackers would 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.



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, then 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. Visit the home page of your preferred search engine (like Google or Bing) and enter the key words “nutrition information for _____ (the name of the food you are looking for)” in the search window.
4. Download a nutrition app onto your cell phone such as:
 - a. My Food-a-Pedia (<http://apps.usa.gov/myfood-a-pedia>)
 - b. MyFitnessPal (<http://www.myfitnesspal.com/mobile>)
5. Check out your favorite chain restaurant’s nutrition information on their website so you can stick to your plan when you are eating away from home.

Food lists

The lists below 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.

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 low-fat or fat-free plain 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 melon ½ cup fruit juice 2 TBSP dried fruit 1 cup raspberries 1 ¼ cup strawberries ¾ cup blackberries, blueberries	½ cup potato, sweet potato, peas, corn ½ cup cooked beans, legumes (garbanzo, kidney, black beans) 1 cup winter squash 1 ½ cups cooked vegetables (small portions of non-starchy vegetables are free)	¾ ounce snack food (pretzels, 4-6 crackers) 15 potato chips 1 ounce sweet snack (2 small sandwich cookies, 5 vanilla wafers) 1 TBSP sugar or honey ½ cup regular ice cream



How much to eat?

Women

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



Men

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



Carb choices for common serving sizes

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

Better carb choices

All carbs are not alike. Choose better carb choices, such as whole grains and less-processed foods.

- 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.
- Opt for beans and other legumes.
- Select a variety of vegetables such as cauliflower, tomato, carrots and spinach (most vegetables are great choices).

Breakfast	
2 slices whole grain toast	2 carb choices
1 teaspoon light margarine	
1 egg omelet with spinach and mushrooms	
1 small orange	1 carb choice

Lunch	
1 sandwich	2 carb choices
1 small fruit	1 carb choice
1-2 cups veggies	0-1 carb choice

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

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

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

Dinner	
1 cup pasta	3 carb choices
½ cup red sauce with meat	1 carb choice
1 piece bread	1 carb 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, including:

- at least 5 servings of fruits and vegetables
- at least 3 servings of whole grains
- 2-3 servings of low-fat or fat-free dairy

Foods in the protein (including meat, poultry and fish) and fat groups do not directly affect blood glucose. However, to keep your heart healthy, some healthy fats (like those found in nuts, seeds and fish) can be helpful.

Diabetes Care and Education

a dietetic practice group of the
eat right. American Dietetic Association

© 2011 Diabetes Care and Education Dietetic Practice Group. Permission to reproduce for non-profit educational purposes granted through 2014.

This handout has been authored by Susan Wang, MS, RD, CDE and Belinda O'Connell, MS, RD, CDE. It is meant to help you get started in carb counting. For a referral to an RD, or for more information on meal planning and advanced carbohydrate counting, contact the Diabetes Care and Education Practice group, at www.dce.org, or the American Dietetic Association at www.eatright.org, or 1-800-877-1600.